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**AECOM**

# **GROUNDWATER MONITORING EVENT FISHERMANS BEND**





# Groundwater Monitoring Event

Fishermans Bend

Client: Environment Protection Authority Victoria

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Prepared by

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## 1.0 Introduction

AECOM Australia Pty Ltd (AECOM) was requested by the Environment Protection Authority Victoria (EPA) to undertake a regional groundwater monitoring event (GME) at the Fishermans Bend urban renewal area. The GME covered all five (5) precincts within Fishermans Bend, which includes the Employment Precinct, Wirraway, Lorimer, Sandridge and Montague (**Figure F1**). The total area of Fishermans Bend is 485 hectares (ha).

This GME follows a regional groundwater quality assessment conducted in the Employment Precinct in May 2017. The results of that assessment are provided in AECOM (July 2017) and also summarised herein.

As described in AECOM (July 2017), this GME also focused primarily on characterising the condition of the shallow groundwater aquifer, to determine key factors that may be influencing its quality at a regional scale, and provide a summary of regional groundwater quality for future reference. The regional groundwater conditions described in this report may be considered when informing future development decisions at the precinct.

### 1.1 Objectives

The objectives of the July 2017 GME were to:

- Summarise the results of the July 2017 GME conducted across all five (5) precincts within Fishermans Bend.
- Compare the 2015 and May 2017 groundwater data described in AECOM (March 2016) and AECOM (July 2017) with the data from this GME and identify any notable points of difference.
- Summarise any additional knowledge in relation to beneficial uses of shallow groundwater identified at Fishermans Bend.

### 1.2 Scope of Works

The general scope of works undertaken to achieve the objectives was as follows:

- Gauging of standing water levels (SWL) within 78 groundwater monitoring wells.
- Collection of field groundwater quality parameters from 78 groundwater monitoring wells including dissolved oxygen (DO), electrical conductivity (EC), pH, oxygen reduction potential (ORP) and temperature.
  - Note that the well network was to include 79 wells (not 78), however, field parameters could not be collected from one of these wells as it is located at the DSTO site which was inaccessible.
- Collection of groundwater samples from 77 groundwater monitoring wells and quality control and quality assurance (QA/QC) samples.
  - Note that the well network was to include 79 wells, however, the DSTO well was inaccessible, and one of the remaining wells could not be sampled due to the presence of an existing level logger which was jammed in the piezometer.
- Laboratory analysis of groundwater and quality assurance/quality control (QA/QC) samples.
- Data collation, assessment and reporting.

### 1.3 Previous Works

The key reports summarising the previous work undertaken at Fishermans Bend are as follows:

- *Desktop Study and Preliminary Regional Conceptual Site Model* for the Fishermans Bend Urban Renewal Area – prepared by AECOM, dated 28 August 2015.

- *Baseline Groundwater Quality Assessment, Fishermans Bend Urban Renewal Area* – prepared by AECOM, dated 16 March 2016.
- *Groundwater Monitoring Event, Fishermans Bend Urban Renewal Area* – prepared by AECOM, dated 25 July 2016.
- *Final Desktop Study and Preliminary Regional Conceptual Site Model, Fishermans Bend Employment Precinct* – prepared by AECOM, dated 25 May 2017.
- *Regional Groundwater Quality Assessment, Fishermans Bend Employment Precinct* – prepared by AECOM, dated 1 August 2017.

The pertinent findings obtained during the previous work are as follows:

- Thirty-six (36) groundwater wells were installed across the Wirraway, Lorimer, Sandridge and Montague Precincts in October 2015, while another twenty-seven (27) groundwater wells were installed in the Employment Precinct in May 2017 (Total = 63 new groundwater wells). However, as described in **Section 1.2** one of these wells (GW18) could not be sampled due to the presence of an existing level logger which was jammed in the piezometer, and another well could not be sampled as it is located at the DSTO site which was inaccessible.
  - An additional sixteen (16) pre-existing groundwater wells were incorporated into the groundwater sampling program. The total number of existing and new wells included in this GME equates to seventy-nine (79), however, only 77 were able to be sampled.
- The majority of newly installed groundwater wells encountered groundwater within the Port Melbourne Sands and fill material, whilst one well encountered groundwater within Coode Island Silt (CIS), and two wells encountered groundwater within Older Volcanic clays.
- The final position of groundwater wells resulted in a good distribution and coverage across Fishermans Bend, following adjustments for constraints such as underground services. There is an apparent gap in groundwater wells within the south western section of the Wirraway sub-precinct, however, given the constraints and the intent of the baseline groundwater assessments undertaken to date, it is not considered necessary to install additional wells in this area at this point in time.
- Standing water levels (SWLs) across Fishermans Bend were reported to range between 0.73 (GW18) and 3.483 (GW65) mBTOC. The results of the groundwater gauging program indicate that groundwater generally flows in a northerly direction north in the Employment and Lorimer Precincts, and to the south in the Wirraway, Sandridge and Montague Precincts.
- There is considered to be many factors that may influence groundwater flow across Fishermans Bend, including the significant presence of former landfills/quarries, an extensive sewer and stormwater network, former wetland areas and the Yarra River immediately north of Fishermans Bend.
- Based on the Part 1 and Part 2 works, the following groundwater chemicals of potential concern (CoPC) are considered likely to trigger further assessment in relation to assessments and environmental audits associated with future redevelopment of Fishermans Bend.
  - Ammonia as N – Likely from a diffuse source or co-source that is regionally elevated.
  - Nitrate as N – Likely from a diffuse source or co-source that is regionally elevated.
  - Chloride, Sulfate as SO<sub>4</sub>, TDS, Sodium, Metals (Aluminium [Al], Arsenic [As], Cadmium [Cd], Fluoride [F], Iron [Fe], Lead [Pb], Manganese [Mn], Nickel [Ni], Total Chromium [Total Cr]) – Considered to be regionally elevated and further assessment is required to rule these chemicals of potential concern (CoPC) out as pollutants associated with diffuse sources. The GME summarised within this report is intended to address this recommendation.
  - TRHC<sub>10</sub>-C<sub>40</sub> – Likely present from a diffuse source or a number of point sources.
  - Sum of PFHxS/PFOS – Likely present from a number of different types of point sources (e.g. areas of former firefighting activities [within firefighting foams], landfilled areas and various manufacturing and industrial activities).



## 2.0 Site Description

The Fishermans Bend urban renewal area is located in the south-west of the Melbourne Central Business District (CBD) and is bound by Lorimer Street to the north, Williamstown Road to the south, the Westgate Freeway and Todd Road to the west, and CityLink/Bolte Bridge to the east. The Yarra River lies beyond Lorimer Street to the north, and the Westgate Freeway divides Fishermans Bend into two sections (the Employment and Lorimer Precincts to the north of the freeway and Wirraway, Sandridge and Montague Precincts to the south of the freeway). Fishermans Bend is generally used for heavy and light commercial and industrial purposes. The following table summarises the relevant precinct details.

Please refer to AECOM (July 2017) and AECOM (March 2016) for a detailed description of the environmental setting.

**Table 1 Site Information**

Precinct	Area (ha)	Municipality	Current Zoning	Current Overlays
<b>Employment</b>	245	City of Melbourne	IN1Z C2Z PPRZ SUZ3 PUZ1 Road Zone	EAO
<b>Wirraway</b>	90	City of Port Phillip	IN1Z B3Z PPRZ PUZ6	EAO HO CLPO SBO RXO
<b>Sandridge</b>	80	City of Port Phillip	IN1Z B3Z PPRZ PUZ6	HO SBO DDO
<b>Lorimer</b>	45	City of Melbourne	IN1Z B3Z	CLPO SBO DDO
<b>Montague</b>	25	City of Port Phillip	IN1Z PUZ2 MUZ B1Z PUZ4	EAO HO SBO DDO

**Notes:**

*Overlays: EAO = Environmental Audit Overlay, HO = Heritage Overlay, DDO = Design and Development, SBO – Special Building, CLPO = City Link Project, RXO = Road Closure.*

*Zoning: B1Z, B3Z = Business Zones, IN1Z = Industrial Zones, PPRZ – Public Park and Recreation Zones, PUZ1, PUZ2, PUZ4, PUZ6 = Public Use Zones, MUZ = Mixed Use Zones, Road Zone = Road Zone Category 1, C2Z = Commercial 2 Zone, SUZ3 = Special Use 3 Zone.*

## 3.0 Regulatory Setting

### 3.1 EPA and the Environment Protection Act

In Victoria, protection of the environment is regulated by the Environment Protection Authority Victoria (EPA) which is established via the *Environment Protection Act 1970* (the Act). EPA's role is to protect the environment and people by preventing and reducing harm from pollution and waste. EPA is responsible for the regulation of pollution and administration of the Act via its compliance and enforcement actions. EPA recommends and assists in the development of environment policy and prepares guidelines to further guide stakeholders in compliance with the Act.

### 3.2 State Environment Protection Policy

State Environment Protection Policies (SEPP) are subordinate legislation and provide further detail on interpretation and expectations for compliance with the Act. A number of policies have been published and include:

- State Environment Protection Policy - *Prevention and Management of Contamination of Land*;
- State Environment Protection Policy - *Groundwaters of Victoria*;
- State Environment Protection Policy - *Waters of Victoria*;
- State Environment Protection Policy – *Ambient Air Quality*;
- State Environment Protection Policy – *Air Quality Management*;
- State Environment Protection Policy - *Control of Noise from Industry, Commerce and Trade*; and
- State Environment Protection Policy - *Control of Music Noise from Public Premises*.

Some of these policies have been amended or varied and there is currently a review being undertaken to contemplate the amalgamation of the Waters of Victoria and Groundwaters of Victoria SEPPs.

For the purpose of this project the SEPPs for Groundwaters of Victoria and Waters of Victoria (as this relates to the point of discharge for groundwater) are most relevant.

Whilst the soil assessment is not the primary assessment of this project, the *State Environment Protection Policy - Prevention and Management of Contamination of Land* [SEPP (PMCL)] should also be noted, as it provides the framework for the protection of land and associated beneficial uses throughout Victoria.

These SEPPs are discussed in the following sections.

#### 3.2.1 SEPP Groundwaters of Victoria

The *State Environment Protection Policy (Groundwaters of Victoria) 1997, varied 2002* (SEPP GoV) applies to the management of groundwater quality in Victoria. The purpose of the policy is:

*“to maintain and where necessary improve groundwater quality sufficient to protect existing and potential beneficial uses of groundwaters throughout Victoria”*

*Beneficial use* means a use of the environment or any element or segment of the environment which is:

- Conducive to public benefit, welfare, safety, health or aesthetic enjoyment and which requires protection from the effects of waste discharges, emissions or deposits or of the emission of noise; or
- Declared by State Environment Protection Policy (SEPP) to be a beneficial use.

The SEPP (GoV) defines beneficial uses of groundwater on the basis of the classification of a groundwater segment which is based on background salinity, measured as total dissolved solids (TDS). Groundwater is considered to be polluted where current and / or future protected beneficial uses for the relevant segment are precluded. Beneficial uses of groundwater are considered



precluded when relevant groundwater quality objectives have been exceeded, or where non-aqueous phase liquid is present.

The SEPP GoV allows for the EPA to identify Groundwater Quality Restricted Use Zones (GQRUZ) where one or more beneficial uses are precluded due to contamination or pollution. It also indicates that if such a zone is established then the groundwater within the zone must be managed to enable the groundwater to be contained within the restricted use zone. Where pollution of groundwater has been established it must be cleaned up, and in accordance with clause 19(2)(b), groundwater must be cleaned up to the extent practicable (CUTEP).

### 3.2.2 SEPP Waters of Victoria

The *State Environment Protection Policy (Waters of Victoria)* 1988, varied 2004 (SEPP WoV) was originally Gazetted in 1988. Since then a number of variations have been published. These include:

- Variation to the State Environment Protection Policy (Waters of Victoria) – Insertion of Schedule F6. Waters of Port Phillip Bay [27 August 1997]
- Variation to the State Environment Protection Policy (Waters of Victoria) – Insertion of Schedule F7. Waters of the Yarra Catchment [22 June 1999]
- Variation to the State Environment Protection Policy (Waters of Victoria) [4 June 2003]

The purpose of the SEPP (WoV) [clause 5] “*is to help achieve sustainable surface waters by setting out the environmental values and beneficial uses of water that Victorians want, and the environmental quality required to protect them.*”

The SEPP (WoV) is an important policy document for this project where the point of discharge for groundwater is the surface waters of the Yarra River or Hobsons Bay.

## 3.3 National Environment Protection Measure

The National Environment Protection Council (NEPC) *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPM) amended 2013 is the primary guidance document in Australia for the assessment of site contamination. The NEPM is made under the *National Environment Protection Council Act 1994* and is given effect by individual legislation and guidelines in each state and territory. In Victoria, these include the regulatory frameworks established in the relevant State environment protection policies.

The NEPM guidance document was subject to a review process that commenced in 2004 and concluded with the NEPC approving an amending instrument to the 1999 NEPM in April 2013 (NEPC, 2013, *National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1)*). The amended 2013 NEPM guidance came into effect on 16 May 2013. The amendment includes repealing all the original schedules to the 1999 NEPM guidance and the substitution of new schedules. Implementation of the amended 2013 NEPM is the responsibility of each state jurisdiction.

It is noted that the SEPP (PMCL) was varied on 24 September 2013 to capture modifications to the schedules within the NEPM.

## 3.4 EPA Guidelines

As noted above, EPA is responsible for the publication of guidelines to further assist stakeholders to understand their environmental obligations and provide advice relating to compliance.

EPA guidelines that are most relevant to this project and which describe the procedural elements for establishing whether groundwater has been cleaned up to the extent practicable are discussed in the following sections.

### 3.4.1 EPA Publication 759.3

EPA Publication 759.3 *Environmental auditor (contaminated land): Guidelines for issue of certificates and statements of environmental audit* (December 2015) is relevant to this project as it includes guidance to auditors regarding expectations and interpretation of CUTEP process. This project is not

subject to a statutory environmental audit, however, certain elements of the project reference the procedural steps in establishing groundwater pollution, the clean up of groundwater pollution and groundwater quality restricted use zones.

### **3.4.2 EPA Publication 840.2**

EPA Publication 840.2 *The Clean Up and Management of Polluted Groundwater* (April 2016) provides details on EPA's requirements and expectations for developing and implementing the clean up and management of polluted groundwater to ensure the protection of human health and the environment. Where polluted groundwater has been identified, EPA's role is to require clean up of the pollutants. If it is impracticable to clean up groundwater to the level needed to restore beneficial uses, EPA may accept that clean up to the extent practicable has occurred and that, subject to appropriate ongoing management, further clean up is not required.

When clean up to protect beneficial uses is not practicable (or where clean up has not yet occurred or is currently occurring), polluted groundwater should be managed to ensure the protection of human health and the environment.

### **3.4.3 EPA Publication 862**

As noted above, the SEPP (GoV) allows for the establishment of groundwater quality restricted use zones (GQRUZ) as a tracking and information tool to be applied when the beneficial uses of groundwater are precluded due to pollution. EPA Publication 862 *Groundwater Quality Restricted Use Zone* (July 2002) discusses the various aspects and impacts of GQRUZ for Victorians.

### **3.4.4 Other Relevant Publications**

Other relevant EPA Publications include, but are not necessarily limited to, the following:

- EPA Victoria, 2009b. IWGR701 – *Sampling and Analysis of Waters, Waste Waters, Soils and Waste*.
- EPA Victoria, 2006. EPA Publication 668 – *Hydrogeological Assessment (Groundwater Quality) Guidelines*.
- EPA Victoria, 2000. EPA Publication 669 – *Groundwater Sampling Guidelines*.

## 4.0 Beneficial Uses and Environmental Quality Criteria

### 4.1 Introduction

*Beneficial use* means a use of the environment or any element or segment of the environment which is:

- Conducive to public benefit, welfare, safety, health or aesthetic enjoyment and which requires protection from the effects of waste discharges, emissions or deposits or of the emission of noise, or:
- Declared in a State Environment Protection Policy (SEPP) to be a beneficial use.

An *element* of the environment is any of the principal constituent parts of the environment including land, water, atmosphere, vegetation, climate, sound, odour, aesthetics, fish and wildlife. The relevant elements for this GME are considered to be the following:

- Groundwater beneath the surface of Fishermans Bend and down-hydraulic gradient of Fishermans Bend.
- Surface waters hydraulically connected to groundwater and/or receiving runoff from Fishermans Bend.

The selection of environmental quality criteria for this project is based on the consideration of any possible beneficial use that may be feasible, and is particularly focused on the existing and likely future uses of the site.

### 4.2 Groundwater

In accordance with the SEPP Groundwaters of Victoria (SEPP GoV), groundwater quality objectives for beneficial uses are primarily sourced from the Australian Water Quality Guidelines for Fresh and Marine Waters, published by the Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand (ANZECC/ARMCANZ, 2000).

Given the beneficial uses identified, AECOM has referenced the following groundwater quality objectives in order to determine which CoPC are likely to exceed beneficial use criteria on a regional scale.

It is noted that the adopted objectives are preliminary values that were developed using conservative assumptions that may not represent actual site conditions. Exceeding the reference values for a specific chemical does not necessarily indicate that the impact poses significant environmental concerns, only that additional evaluation is warranted. For this project, the additional evaluation is in the form of statistical analysis to determine possible regional ranges of relevant CoPC.

**Table 2 Adopted Guidelines for Groundwater Beneficial Uses**

Receptor Type	Beneficial Use	Adopted Guideline Source
Discharge to surface water	Maintenance of Ecosystems	<p>For maintenance of ecosystems, the SEPP Waters of Victoria (SEPP (WoV)) and its schedules apply. The SEPP (WoV) adopts surface water objectives from Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ, 2000).</p> <p>The Yarra River in the vicinity of the precinct falls within the 'Yarra Port Segment' and 'Highly Modified ecosystem' in the SEPP (WoV) – Schedule F7 – Waters of the Yarra Catchment and therefore a 90% level of ecosystem protection will be adopted.</p> <p>Where no high reliability guideline values are available in ANZECC/ARMCANZ (2000) for potential contaminants of concern (e.g. metals, polycyclic aromatic hydrocarbons (PAH) and total petroleum hydrocarbons (TPH)) the following guidelines will be adopted:</p>



Receptor Type	Beneficial Use	Adopted Guideline Source
		<ul style="list-style-type: none"> <li>ANZECC/ARMANZ (2000) moderate and low reliability trigger values. Where exceedences of these low reliability screening values are reported, the magnitude of exceedence should be considered in light of the reliability of these values.</li> <li>The errata to ANZECC/ARMCANZ (2000) replaced the trigger values for nitrate with “under review”.</li> <li>The 90% grading value for nitrate from Hickey (2013).</li> <li>Updating nitrate toxicity effects on freshwater aquatic species will be adopted.</li> <li>In the absence of receptor-specific screening values established in Australia, publications from other international jurisdictions (e.g. Canada, USA, UK, Netherlands) will be reviewed to identify an indicative screening value for comparative purposes.</li> </ul>
Discharge to surface water	Primary Contact Recreation	<p>AECOM has considered National Health and Medical Research Council (NHMRC) <i>Guidelines for Managing Risks in Recreational Water</i> (2008). This document references the NHMRC <i>Australian Drinking Water Guidelines</i> (2004) (the drinking water guidelines that were current at the time) as a guide. <i>Australian Drinking Water Guidelines 6</i> was published in 2011 (NHRMC 2011). Subsequent revisions to the guidelines were made in 2013, 2014, 2015 and 2016. NHMRC 2011 will be referred to for updated drinking water guideline values.</p> <p>NHMRC (2013) states that to account for percentage of daily intake from recreational waters, the drinking water guidelines provided can be modified by a factor of 10 to provide screening levels for chemicals. Hence, the objectives and approach presented in NHMRC (2011) have been adopted. Where no guidelines are listed for particular contaminants in NHMRC (2011), the following will be adopted (in order of preference) and multiplied by a factor of 10 for chemicals that are based on an ingestion scenario:</p> <ul style="list-style-type: none"> <li>World Health Organisation (2011) <i>Guidelines for Drinking-water Quality</i> (WHO, 2011) United States Environmental Protection Agency (USEPA) Regions 3, 6 and 9 (as amended from time to time) <i>Regional Screening Levels for Chemical Contaminants at Superfund Sites</i> (USEPA, November 2015)</li> </ul>
Extractive Use	Potable water supply	<p>The SEPP (GoV) specifies water quality indicator levels in groundwater should be less than the levels specified in the Australian Water Quality Guidelines for Fresh and Marine Waters. For drinking water, ANZECC/ARMCANZ (2000) refers to the Australian Drinking Water Guidelines.</p> <p>The following hierarchy for drinking water guidelines will therefore be adopted:</p> <ul style="list-style-type: none"> <li>NHMRC (2011) Australian Drinking Water Guidelines</li> <li>WHO (2011)</li> <li>USEPA (November 2015) Regional Screening Levels for Residential Tap Water</li> </ul>

Receptor Type	Beneficial Use	Adopted Guideline Source
Extractive Use	Agriculture, Parks and Gardens	The SEPP (GoV) specifies water quality indicator levels in groundwater should be less than the levels specified in the Australian Water Quality Guidelines for Fresh and Marine Waters. Section 4.2 of ANZECC/ARMCANZ (2000) contains trigger values for irrigation water use. Where both long-term and short-term trigger values are provided for specific chemicals (e.g. heavy metals) the long-term trigger values (LTV) have been conservatively adopted.
Extractive Use	Stock watering	The SEPP (GoV) specifies water quality indicator levels in groundwater should be less than the levels specified in the Australian Water Quality Guidelines for Fresh and Marine Waters. Where Section 4.3 of ANZECC 2000 does not specify an investigation level (IL) for this beneficial use - Table 5.10 in ANZECC 1992 can be used.  Where neither ANZECC 1992 or ANZECC 2000 specify IL, the <i>Australian Drinking Water Guidelines 2011</i> can be referred to in the first instance. WHO (2011) may be referred to where no ILs are specified in the Australian Drinking Water Guidelines (ADWG). For organic chemicals, the USEPA Regional Screening Levels for tap water may also be considered.
Extractive Use	Industrial Use	No adopted guidelines due to the wide range of possible industrial uses of water, and the application of other guidelines herein are considered sufficient to indicate protection of this beneficial use.
Direct contact	Buildings and Structures	The SEPP (GoV) specifies that introduced contaminants shall not cause groundwater to become corrosive to structures or building materials. Australian Standard AS2159 (2009) – Piling, Design and Installation includes exposure condition classifications for sulfate, pH and chloride. Table 6.4.2(C) of AS2159 will be referred to assess the severity of sulfate, pH and chloride on concrete structures.
Vapour Intrusion	Buildings and Structures	NEPM 1999 (as amended 2013) Groundwater HSLs.

## 5.0 Field Investigation

The GME was conducted between 10 and 17 July 2017 as follows:

- Groundwater gauging: The majority of the groundwater wells were gauged on 10 July 2017, however, the groundwater wells located on GMH and Boeing land could not be gauged until the sampling event due to access constraints.
- Groundwater sampling: 10 to 14 July 2017 and 17 July 2017 (5 full days, following gauging).
  - Groundwater wells were generally sampled on a precinct by precinct basis (where possible), and each all 3 groundwater samplers collected samples from approximately 5 – 6 wells per day.

The above tasks are described in detail in the following sections.

### 5.1 Field Methodology

The groundwater sampling and gauging program included the following activities:

- Equipment calibration
- Groundwater gauging
- Groundwater sampling
- Decontamination of groundwater sampling equipment
- Sample transport and laboratory analysis.

The above activities are discussed in detail in the following sub-sections.

#### 5.1.1 Groundwater Gauging Program

**Appendix A** provides a summary of the results of the gauging event. Refer to **Figure F1** for the groundwater well locations.

Groundwater monitoring wells were gauged using an electronic oil/water interface probe, for depth to groundwater, potential light non aqueous phase liquid (LNAPL) presence, and total depth of each well. Gauging records are provided in **Appendix A**.

The groundwater levels recorded during the July 2017 GME gauging program were found to range between 0.73mBTOC/0.83mAHD (GW18) and 3.483mBTOC/0.86mAHD (GW65). The groundwater levels recorded in the previous GME undertaken at the employment precinct only, ranged between 1.321mBTOC/1.87mAHD (GW61) and 3.147mBTOC/0.92mAHD (GW65).

In general, the water levels reported during this GME aligned well with the water levels reported previously for each well. The only notable fluctuations are as follows:

- GW01: 2.91mBTOC/-0.42mAHD (2016) and 1.74mBTOC/0.75mAHD (July 2017)
- GW14: 1.94mBTOC/0.42mAHD (2016) and 2.96mBTOC/-0.60mAHD (July 2017)
- GW45: 2.26mBTOC/1.45mAHD (May 2017) and 3.42mBTOC/0.30mAHD (July 2017)
- GW61: 1.32mBTOC/1.87mAHD (May 2017) and 2.37mBTOC/0.81mAHD (July 2017)

Please refer to **Appendix A** for a summary of the gauging data obtained for this GME and the two preceding GME's.

#### 5.1.2 Groundwater Purging and Sampling

Groundwater purging and sampling for this GME was undertaken between 10 and 17 July 2017 in general accordance with the following:

- EPA Publication 669 (Groundwater Sampling Guidelines) (EPA, 2000)
- EPA Publication 668 (Hydrogeological Assessment (Groundwater Quality) Guidelines) (EPA, 2006)

- Industrial Waste Guidelines, Publication IWRG701 (Sampling and Analysis of Waters, Wastewaters, Soil and Wastes) (EPA, 2009)

All groundwater samples were collected using low-flow, micropurge techniques.

During low-flow purging, groundwater was regularly tested with a small volume covered flow cell for water quality parameters including dissolved oxygen (DO ppm), electrical conductivity (EC mS/cm), pH, redox potential (Eh mV) and temperature (T °C). Water levels were also monitored throughout the purging process to ensure that drawdown was not greater than 10%. Refer to **Appendix B** for a copy of the groundwater sampling forms.

To ensure that samples were as representative as possible of groundwater conditions within the aquifer, groundwater samples were collected when the above parameters had stabilised. Groundwater parameters were considered to have stabilised when at least 3 consecutive readings were taken at least 3 minutes apart within +/- 3% for EC, +/- 10% for DO and temperature, +/- 10 mV for Eh and +/- 0.05 for pH. It is noted that DO was the most challenging parameter to stabilise in one of the two multimeters used, possibly due to the sensitivity of the probes and/or the presence of sediment in the groundwater.

All groundwater samples were placed into appropriate laboratory supplied bottles with the appropriate preservative pre-dosed by the laboratory (as necessary). Groundwater samples that were to be analysed for dissolved metals and ferrous iron were filtered using 0.45 µm disposable Stericup filters and placed in sample containers containing appropriate preservatives. Groundwater samples were immediately chilled and stored at a temperature of approximately 4°C or less prior to transit to the laboratory.

### 5.1.3 Decontamination Procedure

Monitoring and sampling equipment (such as the interface probe and low flow sampling equipment) were decontaminated during the groundwater sampling process. For all groundwater wells that did not undergo perfluorinated alkyl substances (PFAS) analysis, sampling equipment was washed with Decon 90 solution, prior to being double rinsed (first with potable water and then with clean deionised water).

For all groundwater well locations that underwent PFAS analysis, decontamination was undertaken using tap water followed by triple-rinsing with deionised water.

### 5.1.4 Sample Tracking and Chain of Custody Procedures

Once samples were collected, the primary and quality control sample numbers were transcribed onto a chain of custody form (COC). The COC analytical schedule was filled out by the field supervisor and then checked by the Project Manager before analysis.

All groundwater samples were transported cold (with ice) and couriered either overnight or via a same day courier to ensure holding times were not compromised. COC forms and sample receipt notifications (SRN) are provided in **Appendix C**.

### 5.1.5 Laboratory Analysis

All primary groundwater samples were sent to ALS Environmental (ALS) while secondary groundwater samples were sent to Eurofins. Each laboratory is NATA accredited for the analytical methodologies used. Refer to **Appendix D** for a summary of the results and **Appendix C** for a copy of the laboratory transcripts.

Groundwater samples underwent the laboratory analysis described in **Table 3**. All analyses and sampling was undertaken in accordance with Victorian EPA (2000b) *Publication 669 – Groundwater Sampling Guidelines*, and Victorian EPA (2009) *Industrial Waste Resource Guidelines (IWRG701) – Sampling and Analysis of Waters, Wastewaters, Soils, and Wastes*.

**Table 3 Groundwater Laboratory Analysis**

Analyte	No. of Primary Samples
pH, TDS, Metals (Arsenic [As], Cadmium [Cd], Total Chromium [Cr], Copper [Cu], Lead [Pb], Nickel [Ni], Zinc [Zn], Aluminium [Al], Iron [Fe], Selenium [Se] and Mercury [Hg])	77
Total Recoverable Hydrocarbon (TRHC <sub>6</sub> –C <sub>40</sub> ), Polycyclic aromatic hydrocarbons (PAH)	77
Volatile Organic Compounds (VOC) Trace Suite (71 analytes) ALS Method Code: EP074-WF – Includes BTEXN	77
Ionic Chemistry Suite: Sodium (Na), calcium (Ca), magnesium (Mg), potassium (K), chloride (Cl), bicarbonate (HCO <sub>3</sub> ), nitrate (NO <sub>3</sub> ), nitrite (NO <sub>2</sub> ), ammonia (NH <sub>3</sub> ) phosphate (PO <sub>4</sub> ), sulphate (SO <sub>4</sub> ), fluoride (F), and manganese (Mn)	77
PFAS Full Suite (28 Analytes)	23

### 5.1.6 Quality Assurance / Quality Control Procedures

Quality assurance/quality control (QA/QC) procedures were conducted in general accordance with EPA Publication 669 (Groundwater Sampling Guidelines) (EPA, 2000), Industrial Waste Guidelines, Publication IWRG701 (Sampling and Analysis of Waters, Wastewaters, Soils and Wastes) (EPA, 2009), NEPM 1999 (as amended 2013) and Australian Standards (AS4482.1). Refer to **Appendix E** for a register of the QA/QC samples.

The findings of the QA/QC review are summarised in **Table 4**.

**Table 4 Quality Assurance and Quality Control Evaluation**

Quality Assurance and Quality Control Evaluation		
Item	Groundwater Investigation	Adequate
<b>Work plan/s</b>	AECOM prepared a Sampling Analysis Quality Plan (SAQP) for the groundwater investigation. The EPA reviewed this plan and required amendments were made prior to finalisation and execution of field investigations. Adequate planning was undertaken for proposed field works.	Yes
<b>Qualifications of field staff</b>	AECOM has utilised staff who are suitably qualified and experienced.	Yes
<b>Sample preservation</b>	Samples were placed into laboratory supplied containers before being placed on ice in an insulated cooler, while in transit to the laboratory. The laboratory supplied vessels were pre-preserved (where required) by the laboratory.  The laboratory analytical certificates indicate that samples were preserved and attempts to chill samples were evident.	Yes
<b>Analytical schedule</b>	On the basis of the site history and CoPC, we are of the opinion that the analytical program undertaken sufficiently characterises CoPC in groundwater at the precinct.	Yes
<b>Laboratories used</b>	The laboratories that were used are National Association of Testing Authorities (NATA) accredited for the analysis requested.	Yes
<b>Equipment decontamination</b>	All sampling equipment was decontaminated during field works. No evidence of cross-contamination has been identified.	Yes



Quality Assurance and Quality Control Evaluation		
Item	Groundwater Investigation	Adequate
<b>Selection of investigation locations</b>	The distribution of the assessment sampling locations was discussed with EPA prior to finalisation. We are of the opinion that they are suitable based on the site history, identified potential sources of contamination, and satisfactory for the purposes of the assessment.	Yes
<b>Sampling methods</b>	We used low-flow micro-purge sampling techniques for the collection of groundwater samples. We are of the opinion that the sampling method employed was adequate.	Yes
<b>Target depths</b>	The depth of the groundwater wells are considered to be adequate to assess the shallow groundwater conditions at the precinct.	Yes
<b>Equipment calibration</b>	Water quality meters and interface probes have been used during the GME. Calibration certificates are attached in <b>Appendix F</b> .	Yes
<b>Sample nomenclature</b>	We utilised various forms of sample nomenclature to distinguish groundwater samples. We are satisfied that the labelling used is adequate to identify the soil or groundwater sampling location, depth and date of samples collected.	Yes
<b>Field screening</b>	Groundwater Sampling Forms were prepared and are attached in <b>Appendix B</b> . These forms include water quality parameters such as pH, temperature, conductivity, dissolved oxygen and redox as well as an assessment of stabilisation during purging.	Yes
<b>Chain of Custody (COC) documentation</b>	AECOM prepared COC documentation for the groundwater sampling program and included these in <b>Appendix C</b> .	Yes
<b>QC rinsate blanks</b>	We collected rinsate samples during the groundwater investigation at a rate of one per day of sampling (15 in total). Concentrations reported below the limit of reporting (LOR) for all analytes tested. Based on the results, adequate decontamination was undertaken, and an adequate number of rinsate samples were collected.	Yes
<b>QC trip blanks</b>	AECOM collected 16 trip blank samples during the investigation. Concentrations were reported below the LOR for all analytes tested. We are satisfied that cross-contamination has not occurred and that the data can be relied upon.	Yes
<b>QC field duplicate and split data precision</b>	Please refer to Table E4 in <b>Appendix E</b> .	Yes
<b>Laboratory internal QC procedures</b>	A review of laboratory internal QC procedures was undertaken in <b>Appendix E</b> . Elements such as duplicate sample RPD, laboratory control sample recovery, matrix spike recovery and laboratory blanks were reviewed. The findings indicate that the primary results reported by the laboratories could be relied upon.	Yes

Quality Assurance and Quality Control Evaluation		
Item	Groundwater Investigation	Adequate
<b>Holding times</b>	As described in <b>Appendix E</b> , there were a number of holding time exceedences. However, these are not considered to invalidate the analytical data that has been reported. The reliability of the data set has been evaluated using multiple lines of evidence (holding times being one of these). We are confident that the reported data is accurate and representative of aquifer conditions, as the analytical data for those samples that have exceeded holding times is not significantly different to the remainder of the data set, or the data reported in previous sampling events. Further, it should be noted that the holding times provided in NEPM (as amended 2013) are a guideline only.	Yes
<b>Laboratory's LOR</b>	The laboratory LORs were below our adopted ILs in groundwater samples with the exception of a number organic analytes. The chemical results for the broader organics suites did not indicate any elevated concentrations. Any departures are not considered to affect the outcome of this assessment.	Yes
<b>Completeness of data set</b>	AECOM considers that the number of samples collected and chemicals analysed is sufficient for the purposes of this assessment.	Yes

## 6.0 Data Assessment

The Regional Groundwater Quality Assessment (1 August 2017) containing the previous May 2017 GME data describes an assessment framework which aims to:

- Describe the physical-chemical condition of the shallow aquifer encountered.
- Evaluate whether the data collected are representative of a single or multiple elements of the groundwater flow system.
- Identify potential anomalies and/or outliers (including potential localised contaminant sources/impacts) for separate consideration to the main data set.
- Identify chemicals that are detectable in groundwater and whether they may be associated with natural and/or anthropogenic sources.
- Describe the concentration ranges of these chemicals that may be encountered in groundwater in association with anthropogenic ambient conditions (non-point source) and/or natural background conditions
- Identify whether the detected concentrations of these chemicals have the potential to preclude beneficial uses of the aquifer.

The assessment framework was worked through in a step-wise manner within AECOM (1 August 2017) to identify a representative data set that could be utilised as a point of reference for future environmental assessments at the Employment Precinct.

The following sections provide an assessment of the July 2017 GME data and should be read in conjunction with the findings of the AECOM report on the May 2017 GME (1 August 2017). These sections aim to:

- Compare the field and laboratory data from both GMEs.
- Summarise any additional knowledge obtained in relation to shallow groundwater quality identified in the May 2017 GME.
- Summarise any additional knowledge in relation to beneficial uses of shallow groundwater identified in the May 2017 GME.

### 6.1 Lithology

Based on the field observations obtained during installation of groundwater wells in 2016 and 2017, all groundwater well locations (except GW19 [Coode Island Silt - CIS], GW37 and GW38 [Older Volcanics]) were considered to be installed in Port Melbourne Sands and Fill and showed evidence of hydraulic continuity. As such, and in terms of further regional data interrogation, locations GW19, GW37 and GW38 were removed from the overall regional groundwater data set in AECOM (July 2016).

No further stratigraphic information has been obtained since the installation of wells in May 2017. As a result, the data from wells GW19, GW37 and GW38 will continue to be considered separately for the purposes of assessing shallow groundwater conditions across Fishermans Bend.

### 6.2 Groundwater flow paths

#### 6.2.1 Flow Direction

In a regional context, the shallow groundwater flow paths in fill and in the Port Melbourne Sands across Fishermans Bend are generally in a northerly direction towards the Yarra River within the Employment Precinct and Lorimer Precinct, and generally in a southerly direction towards Hobsons Bay in the Wirraway, Sandridge and Montague Precincts.

The July 2017 gauging data for shallow groundwater across Fishermans Bend is also mostly consistent with the gauging data obtained in the previous GMEs. The highest groundwater elevations (>1 m AHD) were observed around wells GW49, GW69, MW133\_0.2 and GMW03.

As seen in **Figure F3**, a groundwater high/divide is apparent along the Westgate Freeway (approximately). Given the presence of a historical landfill/quarry in the southern portion of the Employment Precinct and the ground disturbance activities that would have occurred during construction of the Freeway, it is not unexpected to observe a groundwater high between the Employment Precinct and the precincts that lie south of the Westgate Freeway.

As described in AECOM (July 2017), the shallow groundwater flowing in the fill material and Port Melbourne Sands is considered to be an unconfined aquifer and is likely to be recharged by direct infiltration of rainfall, leaking services, or flows from the Yarra River under high tide conditions. However, in general terms, we would anticipate that tidal influence on groundwater is most likely to occur close to the northern boundary of the precinct, or in the western portion of the Employment Precinct, which is closer to the mouth of the Yarra River.

Based on the results of all four gauging rounds undertaken to date at Fishermans Bend, various site activities and surface coverage of land are considered to be affecting the extent of recharge of the shallow aquifer. In addition, shallow underground infrastructure is expected to create artificial recharge (via leakage at points that are shallower than groundwater) and preferential flow paths (via groundwater draining at points that are deeper than groundwater). Given the shallow depth of the upper unconfined aquifer being assessed at Fishermans Bend, it is unlikely that deep underground infrastructure has a significant impact on flow direction.

### 6.3 Potential groundwater flow anomalies

As indicated in AECOM (July 2017), there are many physical features across Fishermans Bend that could act as preferential flow pathways, including:

- Former swamps and wetlands.
- The local sewer network across all of the five (5) precincts.
- The drainage and stormwater system.
- Former quarries/landfills.

The results from this gauging event confirm our findings in AECOM (July 2017) with respect to groundwater elevation at well GW49. Groundwater elevations in GW49 located adjacent to a known freshwater lake are high compared to the closest bores (GW48, GW44, GW50, GW54 and GW56). High elevations in this well may reflect groundwater recharge by surface water from the lake in this area.

The elevation in GMW03 is also considered to be higher than immediately surrounding groundwater wells, however, it is not significantly higher than elevations in other wells in the southern part of the precinct (i.e. GMW69 and MW1333\_0.2).

The July 2017 groundwater contours and flow direction are also consistent with the 2015 and 2016 findings in the precincts that lie south of the Westgate Freeway. It appears that shallow groundwater is likely draining to local sewer and/or stormwater systems in the south eastern portion of Fishermans Bend. The Melbourne Main is understood to be present in this area, however, it is unlikely that shallow groundwater is draining through this particular system as the anticipated depth of the Melbourne Main is between 10 and 15 meters below ground level (mBGL).

Following a review of the surrounding land uses and groundwater well network in the south eastern area of Fishermans Bend, it is still unclear what is influencing the apparent drainage described above. It appears to be widespread and a regional influence may be a key factor.

### 6.4 General chemistry of shallow groundwater

**Chart 1** presents the major ion composition of groundwater sampled during the July 2017 GME. This chart includes data from all wells, with the exception of GW19, GW37 and GW38, as these wells are considered to be installed within different lithologies (i.e. not within Fill and Port Melbourne Sands).

The Piper Plot (Chart 1) shows that groundwater from the wells sampled across Fishermans Bend have a range of major ion compositions, reflecting the range of physical and chemical processes that

are likely to be affecting the groundwater composition in the area. Such processes include rainfall infiltration, influence of leaking services, former quarrying or landfill areas, presence of fill material that potentially includes waste cinders and other industrial wastes, interaction with the Yarra River and Westgate Park Lakes (ephemeral, freshwater and saline ponds) and interaction with groundwater from the underlying Coode Island Silt.

The major cation composition is generally dominated by either calcium or sodium, or a mix of the two cations. The groundwaters that are sodium dominated typically showed a higher salinity (TDS concentration), and a mixing trend is apparent between these waters and the less saline groundwaters that were dominated by calcium. None of the groundwater was found to be dominated by magnesium.

The anion composition was typically dominated by bicarbonate, with some wells showing higher proportions of sulfate or chloride. The dominance of bicarbonate likely reflects the shallow nature of groundwater in the area and the influence of recent rainfall of the groundwater composition. Some wells showed very low proportions of sulphate (F3, GW02, GW05, GW24, GW33 and MW1333\_02) with reported concentrations of sulphate less than the limit of reporting (LOR). Groundwater wells with elevated sulphate (where sulphate is the dominant anion) include GW22, GW26, GW42AC, GW46 and GW48.

Carbonate alkalinity was not measured above the limit of reporting (LOR) for any samples.

The wells reported to have elevated sodium compositions also tend to report higher chloride compositions and higher salinity, which is consistent with more “evolved” groundwater. While wells with fresher groundwater are more typically dominated by calcium and bicarbonate.

Overall, the major ion observations across all GMEs is similar with the exception of the following:

- Increasing sulphate in GW01.
- Lower TDS and ionic concentrations in GW7 and GW12 in 2017.
- High sulphate in GW20 in 2016.
- Lower sulphate in GW28 in 2015.

When reviewing the low TDS values across Fishermans Bend, it is difficult to conclude that any trends in the spatial distribution of fresh water are present. However, based on the laboratory reported TDS values:

- 12 groundwater bores corresponds with Segment A1.
- 21 groundwater bores correspond with Segment A2.
- 34 groundwater bores correspond with Segment B.
- 7 groundwater bores correspond with Segment C.
- 3 groundwater bores correspond with Segment D.



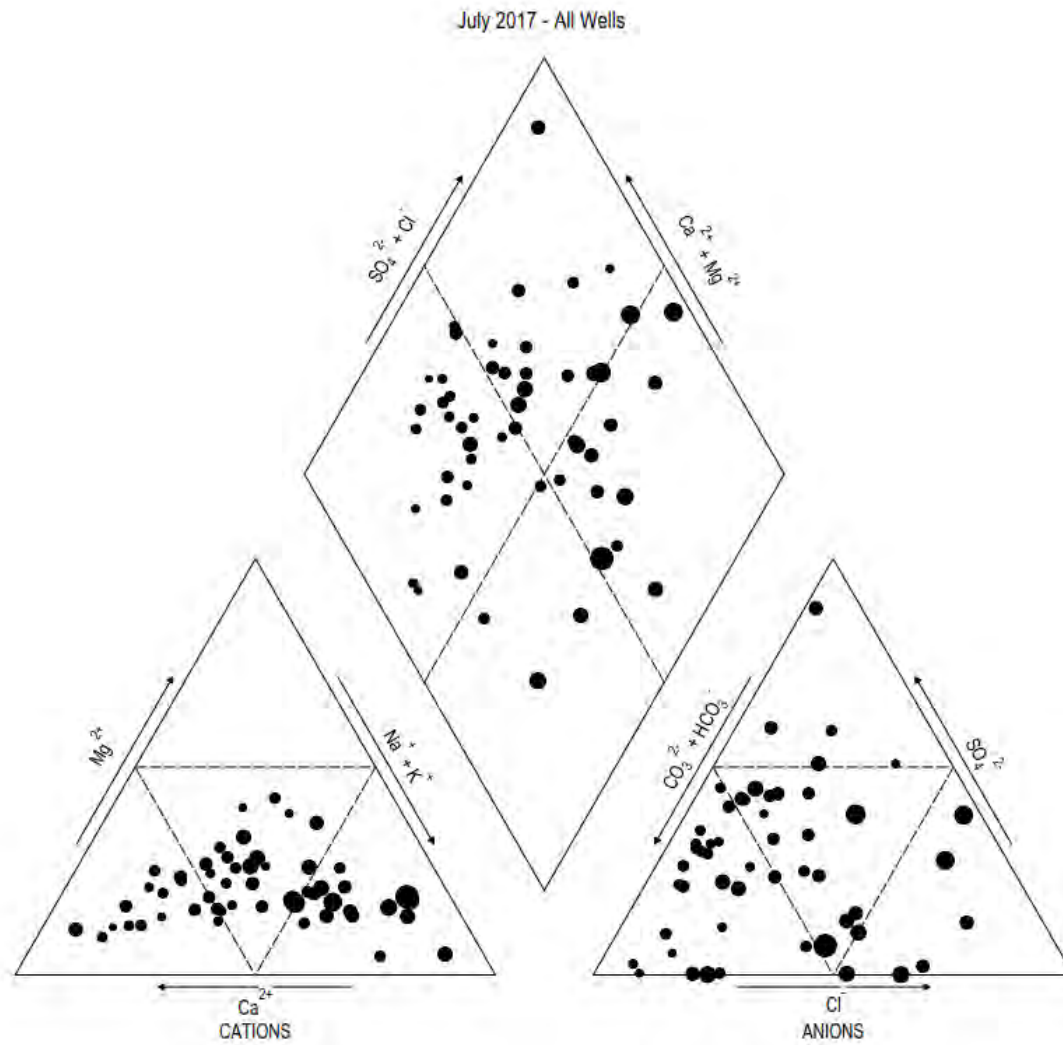


Chart 1

## 6.5 Detected Contaminants of Potential Concern

All groundwater results that have been reported since 2015 have been tabulated against applicable guidelines within **Appendix D**, whilst the July 2017 laboratory transcripts are provided in **Appendix C**.

### 6.5.1 Key groundwater CoPC identified in May 2017

Based on the results of the previous GME (May 2017), the following CoPC reported concentrations that exceed Potable Water Supply (Drinking Water) criteria. They were therefore considered as CoPC that could trigger further consideration in relation to future redevelopment of the Employment precinct and may be considered as potentially regionally elevated.

- Ammonia as N – Likely from a diffuse source or co-source that is regionally elevated.
- Nitrate as N – Likely from a diffuse source or co-source that is regionally elevated.
- Chloride, Sulfate as SO<sub>4</sub>, TDS, Arsenic, Manganese, Nickel and Iron – Considered regionally elevated.
- TRHC<sub>10</sub>-C<sub>40</sub> – Likely present from a diffuse source or a number of point sources.
- Sum of PFHxS/PFOS – Likely present from a number of different types of point sources (e.g. areas of former firefighting activities [within firefighting foams], landfilled areas and various manufacturing and industrial activities).
- Total Chromium, Lead, Cadmium, Fluoride, Sodium and Aluminium – Considered regionally elevated.

### 6.5.2 Groundwater CoPC in excess of guidelines (July 2017 GME)

AECOM has compared the July 2017 GME groundwater results to the guidelines developed for the beneficial uses described in **Section 4.0**. The following CoPC were reported to be in excess of these guidelines:

- **CoPC in excess of Maintenance of Ecosystem guidelines:**
  - Total Recoverable Hydrocarbons C6-C10 (TRHC<sub>6</sub>-C<sub>10</sub>) – 1 sample
  - TRHC<sub>10</sub>-C<sub>40</sub> – 7 samples
  - Toluene – 1 sample
  - Ethylbenzene – 1 sample
  - O-xylene – 1 sample
  - PAHs – Naphthalene, Anthracene, Fluorene, Phenanthrene – 1 sample
  - PAHs – BAP – 2 samples
  - Total Metals (Al – 77 samples, As – 66 samples, Cd – 6 samples, Cr – 62 samples, Cu – 60 samples, Fe – 76 samples, Pb – 45 samples, Mn – 60 samples, Ni – 2 samples, Se – 5 samples, Zn – 63 samples)
  - Dissolved Metals (Al – 55 samples, As – 30 samples, Cr – 11 samples, Cu – 5 samples, Fe – 68 samples, Mn – 53 samples, Se – 1 sample, Zn – 28 samples)
  - NH<sub>3</sub> (as N) – 28 samples
  - NO<sub>3</sub> (as N) – 2 samples
  - PFOS – 12 samples
- **CoPC in excess of Potable Water Supply guidelines:**
  - Benzene – 3 samples
  - Toluene – 2 samples
  - Ethylbenzene – 1 sample

- Total Xylene – 1 sample
- 1,2,4-trimethylbenzene – 1 sample
- 1,3,5-trimethylbenzene – 1 sample
- PAHs – Naphthalene, Acenaphthene, Fluorene, Fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Chrysene, Pyrene, Indeno(1,2,3-cd)pyrene – 1 sample
- PAHs – Benz(a)anthracene – 2 samples
- Total Metals (Al – 76 samples, As – 52 samples, Cd – 4 samples, Cr – 15 samples, Fe – 76 samples, Pb – 38 samples, Mn – 59 samples, Ni – 49 samples, Se – 5 samples)
- Dissolved Metals (Al – 9 samples, As – 14 samples, Cr – 1 sample, Fe – 68 samples, Mn – 52 samples, Ni – 24 samples, Se – 1 sample)
- 1,2-Dichlorobenzene (GW46)
- 1,4-Dichlorobenzene – 2 samples (GW01 and GW02)
- Vinyl chloride – 2 samples (GW46 and GMW02)
- Bromomethane – 1 sample (GW44)
- 1,1-Dichloroethane – 1 sample (GW44)
- cis-1,2-Dichloroethene (GMW02)
- NH<sub>3</sub> (as N) – 55 samples
- NO<sub>3</sub> (as N) – 2 samples
- Cl – 29 samples
- F – 2 samples
- Dissolved Na – 38 samples
- SO<sub>4</sub> (as S) – 25 samples
- PFHxS & PFOS – 9 samples
- **CoPC in excess of Agriculture, Parks and Gardens guidelines:**
  - Total Metals (Al – 30 samples, As – 5 samples, Cr – 4 samples, Cu – 2 samples, Iron – 77 samples, Pb – 1 sample, Mn – 40 samples, Ni – 3 samples, Zn – 1 sample)
  - Dissolved Metals (Iron – 70 samples, Mn – 30 samples)
  - NH<sub>3</sub> (as N) – 27 samples
  - NO<sub>3</sub> (as N) – 2 samples
  - Nutrients (Cl – 55 samples, F – 8 samples, Dissolved Na – 49 samples)
- **CoPC in excess of Stock Watering guidelines:**
  - Benzene – 3 samples
  - Toluene – 1 sample (GW32)
  - Ethylbenzene – 1 sample (GW32)
  - Total Xylene – 1 sample (GW32)
  - 1,2,4-trimethylbenzene – 1 sample (GW32)
  - 1,3,5-trimethylbenzene – 1 sample (GW32)
  - PAHs – Naphthalene, Acenaphthene, Anthracene, Fluorene, Fluoranthene, Benzo(k)fluoranthene, Chrysene, Pyrene, Indeno(1,2,3-cd)pyrene – 1 sample (GW32)
  - PAHs – Benz(a)anthracene, Benzo(a)pyrene – 2 samples

- Total Metals (Al – 30 samples, Cu – 2 samples, Pb – 13 samples, Mn – 21 samples)
- Dissolved Metals (Al – 1 sample, Mn – 12 samples)
- Vinyl chloride – 2 samples (GW46 and GMW02)
- Bromomethane – 1 sample (GW44)
- 1,1-Dichloroethane – 1 sample (GW44)
- cis-1,2-Dichloroethene – 1 sample (GMW02)
- NH<sub>3</sub> (as N) – 44 samples
- SO<sub>4</sub> – 7 samples
- **CoPC in excess of Primary Contact Recreation guidelines:**
  - TRHC<sub>6</sub>-C<sub>10</sub> – 1 sample (GW32)
  - TRHC<sub>10</sub>-C<sub>16</sub> – 10 samples
  - TRHC<sub>16</sub>-C<sub>34</sub> – 4 samples
  - Benzene – 3 samples
  - Toluene – 1 sample (GW32)
  - Ethylbenzene – 1 sample (GW32)
  - Total Xylenes – 1 sample (GW32)
  - 1,2,4-trimethylbenzene – 1 sample (GW32)
  - 1,3,5-trimethylbenzene – 1 sample (GW32)
  - PAHs – Naphthalene, Benzo(k)fluoranthene, Indeno(1,2,3-cd)pyrene – 1 sample
  - PAHs – Benz(a)anthracene, Benzo(a)pyrene – 2 samples
  - Total Metals (Al – 75 samples, As – 5 samples, Fe – 76 samples, Pb – 13 samples, Mn – 21 samples, Ni – 2 samples)
  - Dissolved Metals (Al – 9 samples, Fe – 68 samples, Mn – 12 samples)
  - Vinyl chloride – 2 samples (GW32 and GMW02)
  - Bromomethane – 1 sample (GW44)
  - 1,1-Dichloroethane – 1 sample (GW44)
  - cis-1,2-Dichloroethene – 1 sample (GMW02)
  - NH<sub>3</sub> (as N) – 43 samples
  - Cl – 29 samples
  - Dissolved Na – 38 samples
  - SO<sub>4</sub> – 14 samples
  - PFHxS & PFOS – 1 sample
- **CoPC in excess of Buildings and Structures guidelines:**
  - pH – 1 sample
  - Cl – 4 samples
  - SO<sub>4</sub> – 7 samples

### 6.5.3 Groundwater – Per- and poly-fluoroalkyl substances (PFAS)

In addition to the PFAS exceedences reported above, the following observations have been made on the July 2017 data:

- Nine (9) of the twenty-three (23) samples analysed for PFAS reported a combined perfluorooctanesulfonic acid (PFOS) and perfluorohexane sulfonic acid (PFHxS) concentration in excess of the current Australian drinking water guidelines. One of these samples (GW27) reported a combined PFOS and PFHxS concentration in excess of the Primary Contact Recreation guidelines as well.
- Twelve (12) samples reported PFOS concentrations in excess of the incoming ANZECC 2000 Maintenance of Ecosystems Freshwater 99% protection level for freshwater aquatic ecosystems.
- No PFOA concentrations were found to exceed the current drinking water guidelines (*Health Based Guidance Values for PFAS for use in site investigations in Australia*), Department of Health [April 2017]), or the incoming ANZECC 2000 Maintenance of Ecosystems Freshwater 99% protection level for freshwater aquatic ecosystems.
- As seen in Figure F4, the PFAS signature in 10 samples (GW10, GW21, GW31, GW40A/C, GW41, GW42A/C, GW51, GW67, GW73 and DAMW5) is dominated by sulphonates. This pattern is typically seen on Aqueous Film Forming Foam (AFFF) sites in association with older formulations such as 3M Lightwater. There is no obvious trend in the distribution of these samples, as seen in **Figure F4**.
- The PFAS signature in sample GW01, GW02, GW34, GW61 and GW81 is dominated by acids, indicating a potential different source type. Again, there is no obvious trend in the distribution of these samples, as seen in **Figure F4**.

### 6.5.4 Key observations of the May and July 2017 GME data

The CoPC found to exceed relevant guidelines in the July 2017 GME were similar to the CoPC that were reported to exceed guidelines in the May 2017 GME. The only notable differences and observations are as follows:

- GW32: TRH, BTEX and PAH concentrations were reported to be an order of magnitude higher for a number of these compounds compared to the results reported during the previous sampling event conducted at this well (in 2016).
- Vinyl chloride (VC) was detected for the first time since regional groundwater sampling commenced at Fishermans Bend in 2015. Two groundwater wells (GW46 and GMW02) reported concentrations of VC in excess of Potable Water Supply guidelines, Primary Contact Recreation guidelines and Stock Watering guidelines, with concentrations of 42.2 and 91.3 µg/L respectively. Neither of these wells had been sampled for VOCs prior to the July 2017 GME.
- All groundwater wells were analysed for VOC during the July 2017 GME, whereas only 50% of the wells had been analysed for VOC during previous GMEs. Despite this, little variation was observed in the VOC concentrations across all GMEs.

## 6.6 Beneficial Uses of Shallow Groundwater

The most sensitive groundwater segment that may be applicable at the precinct (based on TDS concentrations reported in July 2017) is Segment A1 (<500mg/L).

Segment A1 requires the protection of Potable Water Supply – Desirable, which aligns with the most conservative guidelines. AECOM has therefore summarised descriptive statistics of CoPC detected at concentrations in excess of the most conservative guideline (Potable Water Supply – Desirable). These are considered to be the CoPC at the precinct, which are most likely to trigger further investigation during future assessments/audits. It should be noted that the area is serviced by a reticulated water supply, which may limit the potential for this beneficial use to be realised.

**Table 5** provides a summary of groundwater CoPC that reported concentrations in excess of Potable Water Supply – Desirable since 2015 (i.e. the statistical summary is based on all four GMEs).



Quantile-Quantile (QQ) Plots have also been developed as an additional data visualisation tool for those CoPC with a minimum of eight data points that are in excess of PWS guidelines, as seen in **Appendix G**.

We acknowledge that there are many ways to present the data and conduct statistical analysis. For this assessment, we are of the opinion that it would be reasonable to assume that CoPC with <8 exceedances would indicate the relevant CoPC is associated with specific sources (hence, conducting statistical analysis on >8 exceedances).

Should the data in this report be used (in part or in whole) within other assessments undertaken across the precinct, we recommend that the appointed Assessor and/or Auditor use a statistical approach which is justifiable and specific to the needs of the investigation at the time.

Further discussion regarding beneficial uses is provided in the following sections.

### **6.6.1 Maintenance of Ecosystems**

Following completion of the July 2017 GME, we are of the opinion that the complete Fishermans Bend data set is robust enough to formulate some preliminary conclusions with respect to each beneficial use.

As described in **Section 6.5**, a number of CoPC were reported at concentrations that exceeded the investigation levels (ILs) for the protection of Maintenance of Ecosystems in the July 2017 GME, including: TRH, BTEX compounds, PAH compounds, metals, ammonia and PFAS.

Some of the CoPC in excess of ecosystem guidelines reported <8 exceedances, (i.e. BTEX compounds, PAH compounds, some metals and PFAS), and as such, they are not considered to be statistically significant on a regional scale for the purposes of assessing this beneficial use.

We have made the following preliminary conclusions with respect to this beneficial use:

- NH<sub>3</sub> (as N) and NO<sub>3</sub> contamination is likely to be associated with diffuse sources of groundwater pollution from urban sources such as leaking drainage and sewerage infrastructure.
- Metals (Al, As, Cd, Cr, Cu, Fe, Pb, Mn, Ni and Zn) are considered to be regionally elevated, however, some of these metals may be associated with anthropogenic ambient conditions (non-point source) or representative of natural background conditions. Further consideration of potential point sources around each impacted groundwater well may be required to assist in determining whether these metals are representative of pollution or natural background conditions.
- TRHC<sub>10</sub>-C<sub>40</sub> contamination is likely to be associated with diffuse sources of groundwater pollution or multiple point sources.

Our conclusions remain consistent with AECOM (1 August 2017).

Based on the July 2017 GME data the beneficial use, Maintenance of Ecosystems is assumed to be precluded at the point of discharge (the Yarra River) by NH<sub>3</sub>, NO<sub>3</sub> and TRHC<sub>10</sub>-C<sub>40</sub>.

PFAS and VOCs reported in groundwater appear to be unlikely as pollutants associated with diffuse sources, and more likely associated with one or more point sources.

### **6.6.2 Agriculture, Parks and Gardens**

As described in **Section 6.5.2**, a number of CoPC were reported at concentrations that exceeded the ILs for the protection of Agriculture, Parks and Gardens, including: Metals, NH<sub>3</sub>, NO<sub>3</sub>, Cl, F and Na.

Some of the CoPC in excess of Agriculture, Parks and Garden guidelines reported <8 exceedances, (i.e. NO<sub>3</sub>, As, Cr, Cu, Pb, Ni and Zn), and as such, they are not considered to be statistically significant on a regional scale for the purposes of assessing this beneficial use.

We have made the following preliminary conclusions with respect to this beneficial use:

- NH<sub>3</sub> contamination is likely to be associated with diffuse sources of groundwater pollution from urban sources such as leaking drainage and sewerage infrastructure.

- Metals (Al, Fe and Mn), Cl, F and Na are considered to be regionally elevated, however, some of these CoPC may be associated with anthropogenic ambient conditions (non-point source) or representative of natural background conditions. Further desktop consideration of potential point sources around each impacted groundwater well would assist in determining whether these inorganic CoPC are representative of pollution or natural background conditions.

Based on the July 2017 GME data the beneficial use Agriculture, Parks and Gardens is assumed to be precluded at the precinct by NH<sub>3</sub> and NO<sub>3</sub>.

### 6.6.3 Stock Watering

As described in **Section 6.5.2**, a number of CoPC were reported at concentrations that exceeded the ILs for the protection of Stock Watering, including: MAH, PAH, Metals, Vinyl Chloride, Bromomethane, 1,1-Dichloroethane, cis-1,2-Dichloroethene, NH<sub>3</sub> and SO<sub>4</sub>.

However, MAH, PAH, Metals (Cu), Vinyl Chloride, Bromomethane, 1,1-Dichloroethane, cis-1,2-Dichloroethene and SO<sub>4</sub> reported <8 exceedances, and as such, they are not considered to be statistically significant on a regional scale for the purposes of assessing this beneficial use.

We have made the following preliminary conclusions with respect to this beneficial use:

- NH<sub>3</sub> contamination is likely to be associated with diffuse sources of groundwater pollution from urban sources such as leaking drainage and sewerage infrastructure.
- Metals (Al, Pb, Mn) and SO<sub>4</sub> are considered to be regionally elevated, however, some of these CoPC may be associated with anthropogenic ambient conditions (non-point source) or representative of natural background conditions. Further desktop consideration of potential point sources around each impacted groundwater well would assist in determining whether these inorganic CoPC are representative of pollution or natural background conditions.

Based on the July 2017 GME data, the beneficial use Stock Watering is assumed to be precluded at the precinct by NH<sub>3</sub>.

### 6.6.4 Industrial Water Use

We have not provided specific industrial water use screening levels due to the various types of industry that may extract groundwater and the varying requirements of water quality. We note that the TDS concentrations in shallow groundwater may limit particular industrial water uses, however, TDS is considered to be naturally occurring and therefore not pollution.

The concentrations of ammonia measured in shallow groundwater could preclude industrial water use.

### 6.6.5 Primary Contact Recreation

As described in **Section 6.5.2**, a number of CoPC were reported at concentrations that exceeded the ILs for the protection of Primary Contact Recreation, including: TRHC<sub>6</sub>-C<sub>10</sub>, TRHC<sub>10</sub>-C<sub>16</sub>, TRHC<sub>16</sub>-C<sub>34</sub>, MAH, PAH, 1,1-Dichloroethane, Metals (Al, As, Fe, Pb, Mn and Ni), Vinyl Chloride, Bromomethane, 1,1-Dichloroethane, cis-1,2-Dichloroethene, NH<sub>3</sub>, Cl, Na, SO<sub>4</sub> and PFHxS & PFOS.

However, TRHC<sub>6</sub>-C<sub>10</sub>, TRHC<sub>16</sub>-C<sub>34</sub>, MAH, PAH, Metals (As and Ni), Vinyl Chloride, Bromomethane, 1,1-Dichloroethane, cis-1,2-Dichloroethene and PFHxS & PFOS reported <8 exceedances, and as such, they are not considered to be statistically significant on a regional scale for the purposes of assessing this beneficial use.

We have made the following preliminary conclusions with respect to this beneficial use:

- NH<sub>3</sub> contamination is likely to be associated with diffuse sources of groundwater pollution from urban sources such as leaking drainage and sewerage infrastructure.
- Metals (Al, Fe, Pb and Mn), Cl, Na and SO<sub>4</sub> are considered to be regionally elevated, however, some of these CoPC may be associated with anthropogenic ambient conditions (non-point source) or representative of natural background conditions. Further desktop consideration of potential point sources around each impacted groundwater well would assist in determining whether these inorganic CoPC are representative of pollution or natural background conditions.

- TRHC<sub>10</sub>-C<sub>16</sub> contamination is likely to be associated with diffuse sources of groundwater pollution or multiple point sources.

Based on the July 2017 GME data, the beneficial use Primary Contact Recreation is assumed to be precluded at the precinct by NH<sub>3</sub> and TRHC<sub>10</sub>-C<sub>16</sub>.

#### **6.6.6 Buildings and Structures**

As detailed in **Section 6.5.2**, Cl concentrations in four groundwater samples and SO<sub>4</sub> concentrations in 7 groundwater samples indicate that groundwater could be aggressive to concrete piles in some areas at the precinct. However, the chloride and sulfate concentrations are considered to be naturally occurring and therefore do not constitute pollution.

Based on the July 2017 GME data the beneficial use Buildings and Structures is considered to be a protected beneficial use.

Table 5 Summary of CoPC in groundwater in excess of Potable Water Supply guidelines (minimum of 8 detectable concentrations in excess of PWS guidelines)

Statistics	TDS	TRH C <sub>10</sub> -C <sub>40</sub>	Total Al	Total As	Total Cr	Total Fe	Total Pb	Total Mn	Total Ni	NH <sub>3</sub> (as N)	NO <sub>3</sub> (as N)	Cl	F	Na	SO <sub>4</sub>	Sum of PFHxS and PFOS
<b>No. of Results</b>	194	193	118	117	117	118	117	112	117	194	194	194	194	159	194	34
<b>No. of Detects</b>	194	64	118	116	117	118	113	112	117	192	142	194	184	159	178	19
<b>Min Conc.</b>	124	<100	0.04	<0.001	0.002	0.23	<0.001	0.013	0.002	<0.01	<0.01	6	<0.1	6	<1	<0.01
<b>Min Detect</b>	124	100	0.04	0.002	0.002	0.23	0.001	0.013	0.002	0.02	0.01	6	0.1	6	2	0.02
<b>Max Conc.</b>	30300	147000	117	0.265	0.393	106	5.15	3.52	0.466	106	102	12300	1.9	7680	2510	4.89
<b>Max Detect</b>	30300	147000	117	0.265	0.393	106	5.15	3.52	0.466	106	102	12300	1.9	7680	2510	4.89
<b>Avg Conc.</b>	2803	959	9.5	0.031	0.032	21	0.088	0.37	0.048	8.8	1.2	1004	0.51	669	349	0.24
<b>Median Conc.</b>	1220	50	4.04	0.017	0.017	16	0.011	0.239	0.028	2.22	0.02	122.5	0.4	161	193	0.03
<b>Std Dev</b>	4700	10577	14	0.041	0.045	21	0.48	0.43	0.056	18	8.1	2465	0.35	1500	429	0.84

Notes:

Total Metals (rather than dissolved metals) have been presented in this table (as a conservative approach)

## 7.0 Conclusions

The objectives of the July 2017 GME were to:

- Summarise the results of the July 2017 GME conducted across all five (5) precincts within Fishermans Bend.
- Compare the May 2017 groundwater data described in AECOM (July 2017) with the data from this GME and identify any notable points of difference.
- Summarise any additional knowledge in relation to beneficial uses of shallow groundwater identified at Fishermans Bend.

With consideration of the findings from the previous GMEs conducted at Fishermans Bend, the following conclusions can be made following completion of the July 2017 GME.

### **Comparison of May 2017 and July 2017 Field Data:**

- In general, the water levels reported during the July 2017 GME aligned well with the water levels reported previously for each well. The notable fluctuations are as follows:
  - GW01: 2.91mBTOC/-0.42mAHD (2016) and 1.74mBTOC/0.75mAHD (July 2017)
  - GW14: 1.94mBTOC/0.42mAHD (2016) and 2.96mBTOC/-0.60mAHD (July 2017)
  - GW45: 2.26mBTOC/1.45mAHD (May 2017) and 3.42mBTOC/0.30mAHD (July 2017)
  - GW61: 1.32mBTOC/1.87mAHD (May 2017) and 2.37mBTOC/0.81mAHD (July 2017)
- The above fluctuations may be a reflection of the physical processes that are likely to be affecting the groundwater such as rainfall infiltration, influence of leaking services, former quarrying or landfill areas, presence of fill material, interaction with the Yarra River and Westgate Park Lakes and interaction with groundwater from the underlying Coode Island Silt.
- The shallow groundwater flow paths in fill and the Port Melbourne Sands across Fishermans Bend are in a northerly direction towards the Yarra River within the Employment Precinct and Lorimer Precinct, and in a southerly direction towards Hobsons Bay in the Wirraway, Sandridge and Montague Precincts.
- A groundwater high/divide is apparent along the Westgate Freeway (approximately). Given the presence of a historical landfill/quarry in the southern portion of the Employment Precinct and the ground disturbance activities that would have occurred during construction of the Freeway, it is not unexpected to observe a groundwater high between the Employment Precinct and the precincts that lie south of the Westgate Freeway.
- The major cation composition in shallow groundwater was found to be generally dominated by either calcium or sodium, or a mix of the two cations.
- The anion composition in shallow groundwater was found to be typically dominated by bicarbonate, with some wells showing higher proportions of sulphate or chloride. The dominance of bicarbonate likely reflects the shallow nature of groundwater in the area and the influence of recent rainfall of the groundwater composition.
- Overall, the major ion observations across all GMEs undertaken at Fishermans Bend to date is similar with the exception of the following:
  - Increasing sulphate in groundwater well GW01.
  - Lower TDS and ionic concentrations in groundwater wells GW7 and GW12 in 2017.
  - High sulfate in groundwater well GW20 in 2016.
  - Lower sulfate in groundwater GW28 in 2015.
- When reviewing the low TDS values across Fishermans Bend, it is difficult to conclude that any trends in the spatial distribution of fresh water are present. However, based on the laboratory reported TDS values:

- 12 groundwater bores corresponds with Segment A1.
- 21 groundwater bores correspond with Segment A2.
- 34 groundwater bores correspond with Segment B.
- 7 groundwater bores correspond with Segment C.
- 3 groundwater bores correspond with Segment D.

#### **Comparison of May 2017 GME data with July 2017 GME data**

- There are a number of inorganic compounds that were either detected in May 2017 and not detected in July 2017, or detected in July 2017 and not detected in May 2017. There is no obvious trend associated with these minor changes and none of the changes are considered to be significant as the relative percent differences (RPD's) between the inorganic data from both GMEs are generally low.
- Overall, the CoPC found to exceed relevant guidelines in the July 2017 GME were similar to the CoPC that were reported to exceed guidelines in the May 2017 GME. The notable differences and observations are as follows:
  - GW32: TRH, BTEX and PAH concentrations were reported to be an order of magnitude higher for a number of these compounds compared to the results reported during the previous sampling event conducted at this well (in 2016).
  - Vinyl chloride (VC) was detected for the first time since regional groundwater sampling commenced at Fishermans Bend in 2015. Two groundwater wells (GW46 and GMW02) reported concentrations of VC in excess of Potable Water Supply guidelines, Primary Contact Recreation guidelines and Stock Watering guidelines, with concentrations of 42.2 and 91.3 µg/L respectively. Neither of these wells had been sampled for VOCs prior to the July 2017 GME.
  - All groundwater wells were analysed for VOC during the July 2017 GME, whereas only 50% of the wells had been analysed for VOC during previous GMEs. Despite this, little variation was observed in the VOC concentrations across all GME's.

#### **Beneficial Uses of Shallow Groundwater at Fishermans Bend**

- The conclusions relating to the potential regional protected and precluded beneficial uses at Fishermans Bend remain similar to the conclusions made following completion of the May 2017 GME (i.e. no additional regional pollutants have been identified).
- The most sensitive groundwater segment that is likely to be applicable at Fishermans Bend (based on TDS concentrations reported in July 2017) is Segment A1 (<500mg/L).
- Based on the July 2017 GME data, the following conclusions can be made regarding each beneficial use:
  - *Maintenance of Ecosystems* is assumed to be precluded at the point of discharge (the Yarra River) by NH<sub>3</sub>, NO<sub>3</sub> and TRHC<sub>10</sub>-C<sub>40</sub>.
  - *Agriculture, Parks and Gardens* is assumed to be precluded by NH<sub>3</sub> and NO<sub>3</sub>.
  - *Stock Watering* is assumed to be precluded by NH<sub>3</sub>.
  - The concentrations of ammonia measured in shallow groundwater could preclude *Industrial Water Use*.
  - *Primary Contact Recreation* is assumed to be precluded by NH<sub>3</sub> and TRHC<sub>10</sub>-C<sub>16</sub>.
  - Whilst Cl and SO<sub>4</sub> concentrations indicate that groundwater could be aggressive to concrete piles in some areas at the precinct, they are not pollutants, and as such, the beneficial use *Buildings and Structures* is considered to be a protected beneficial use.
- There are a number of metals and other inorganic compounds that are considered to be regionally elevated (i.e. Al, As, Cr, Fe, Pb, Mn, Ni, Cl, F, Na and SO<sub>4</sub> in particular) and in excess of one or more beneficial use guideline, however, some of these CoPC may be associated with



anthropogenic ambient conditions (non-point source) or representative of natural background conditions. Further consideration of potential point sources around each impacted groundwater well may be required to assist in determining whether these metals are representative of pollution or natural background conditions.

## 8.0 Limitations

AECOM has performed the services for this project in accordance with its current professional standards for site assessment investigations and remedial activities. The scope of works for the investigation works was limited to that detailed in communications with EPA Victoria.

We do not assume any liability for misrepresentation or items not visible, accessible or present at the subject site during the time of the works. AECOM assumes that all historical information provided by other parties is accurate.

There are no remedial or investigative works which are thorough enough to preclude the presence of material, which presently or in the future, may be considered hazardous at or surrounding the site or at sampling locations. Because regulatory evaluation criteria are constantly changing, concentrations of contaminants presently considered low may, in the future, fall under different regulatory standards that require further remediation.

Opinions and judgements expressed herein, which are based on our understanding and interpretation of current regulatory standards, should not be construed as legal opinions. This document and the information herein have been prepared for EPA Victoria. This report may not be relied upon by any other party without the explicit written agreement of AECOM. No other warranty, expressed or implied, is made as to the professional advice included in this report.

## 9.0 References

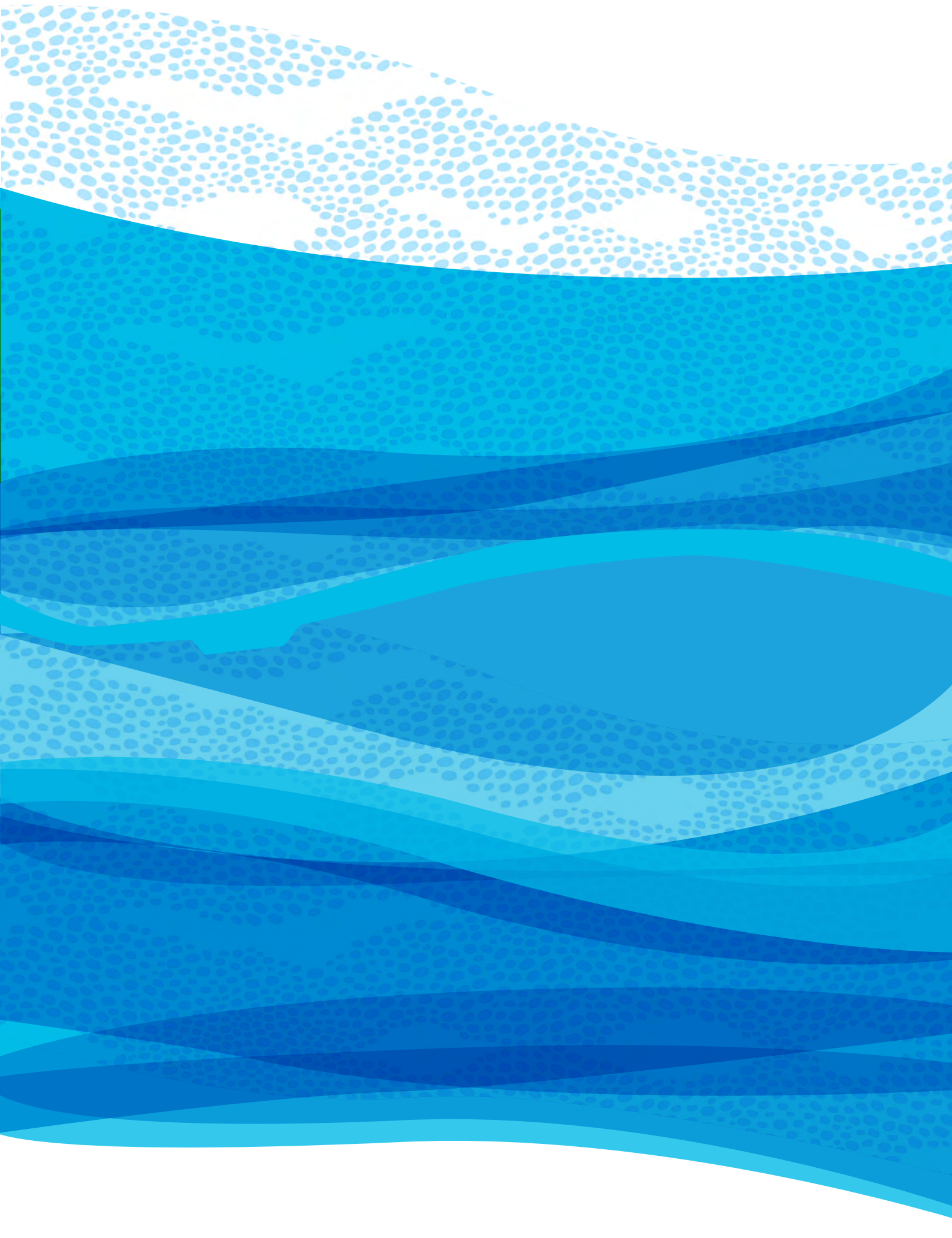
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- AECOM (March 2016) *Baseline Groundwater Quality Assessment, Fishermans Bend Urban Renewal Area*
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Victorian Government (June 2002) *State Environment Protection Policy - Prevention and Management of Contamination of Land*

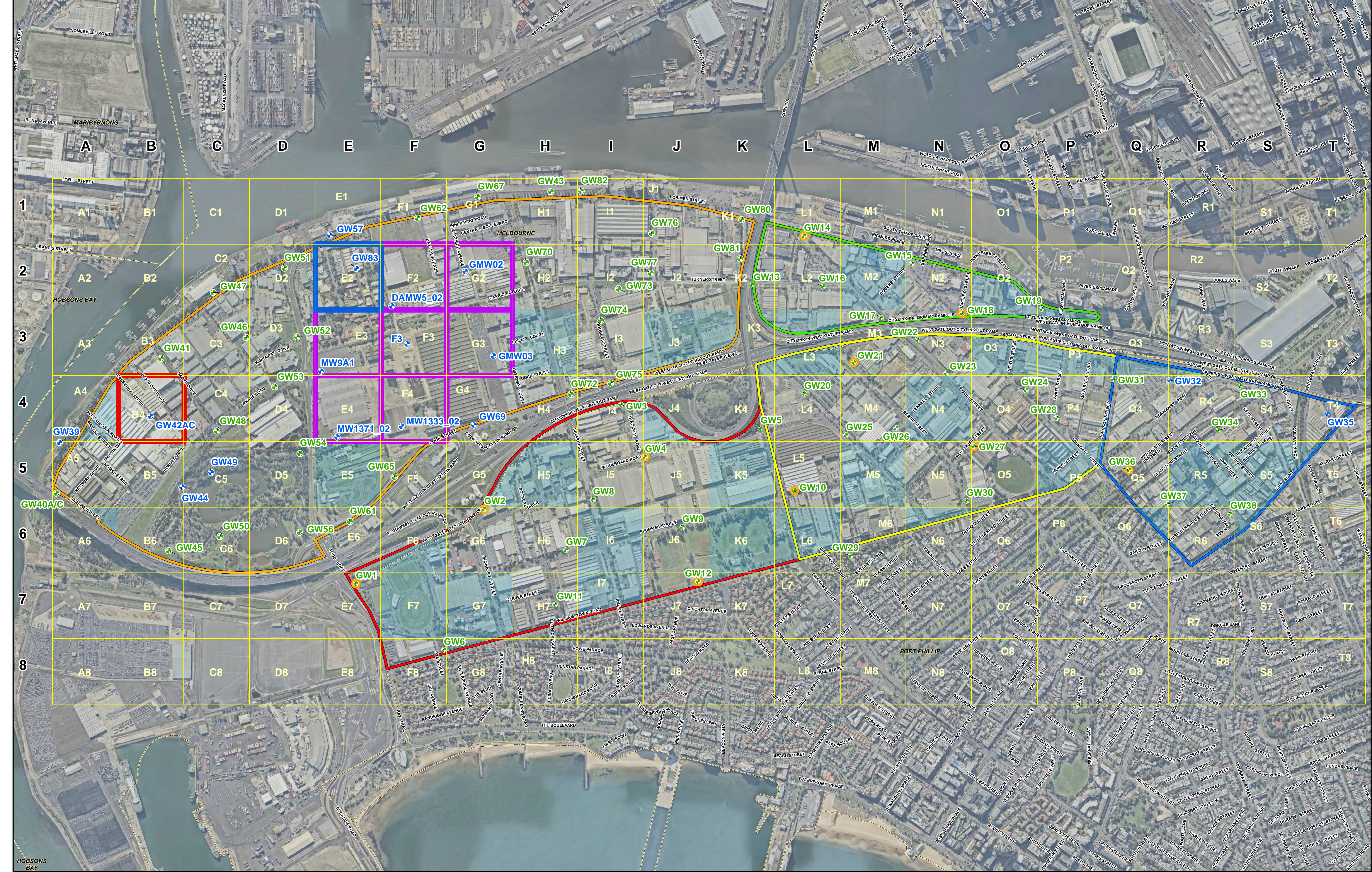
Victorian Government (August 1997) *State Environment Protection Policy – Schedule F6 Waters of Port Phillip Bay (as varied in 2003)*

# FIGURES









PROJECT ID: 60537162  
 CREATED BY: DUB  
 LAST MODIFIED: 08/11/2017  
 www.aecom.com

DATUM: GDA 1994 PROJECTION: MGA ZONE 55  
 0 80 160 320  
 metres  
 (when printed at A1)

**LEGEND**

- Existing Well
- New Well
- Soil samples collected
- LGA Boundary
- 250m Grid
- Boeing land
- DSTO land
- GMH land
- Grid without bore location
- Employment Precinct
- Lorimer Precinct
- Montague Precinct
- Sandridge Precinct
- Wirraway Precinct

**GROUNDWATER BORE LOCATIONS**

EPA  
 Regional Groundwater Assessment  
 Fisherman's Bend, Melbourne, VIC

Figure  
**F1**





**PROJECT ID:** 60527182  
**CREATED BY:** DUB  
**LAST MODIFIED:** 08/06/2017  
**www.aecom.com**

**LEGEND**

- Existing Well
- New Well
- Soil samples collected
- Inferred Groundwater Contours (mAH)
- Inferred Flow Direction
- LGA Boundary
- 250m Grid
- Grid without Bore Location
- Employment Precinct
- Lorimer Precinct
- Montague Precinct
- Sandridge Precinct
- Wirraway Precinct

**Scale:** 1:6,275 (when printed at A1)

**DATUM:** GDA 1994 PROJECTION: MGA ZONE 55

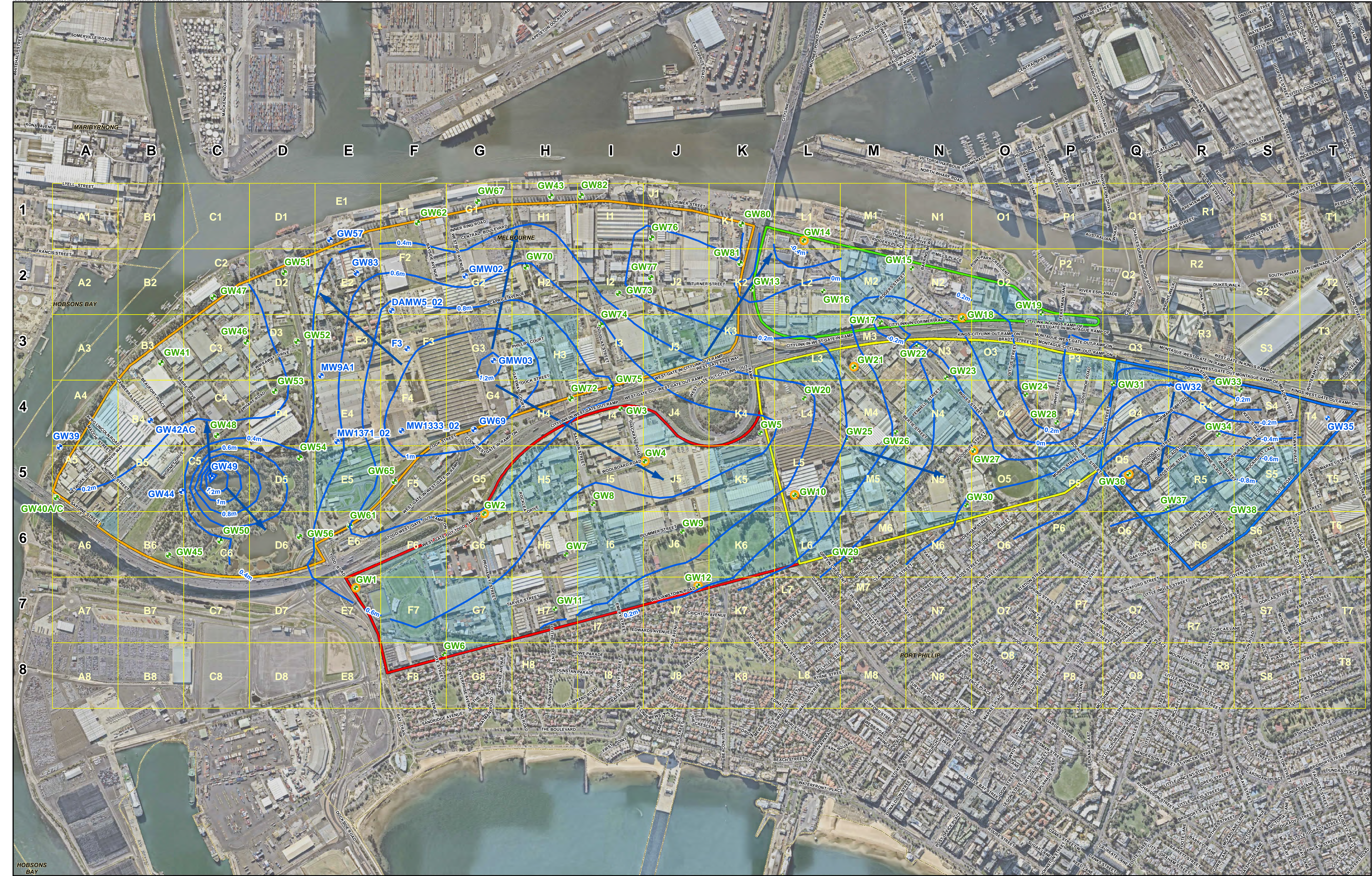
**INFERRED GW CONTOURS MAY 2017**

**EPA**  
 Regional Groundwater Assessment  
 Fisherman's Bend, Melbourne, VIC

**Figure**  
**F2**



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PROJECT ID: 60537182  
 CREATED BY: DJB  
 LAST MODIFIED: 08/06/2017  
 www.aecom.com

DATUM: GDA 1994 PROJECTION: MGA ZONE 55  
 0 80 160 320  
 metres (when printed at A1)  
 1:6,275

**LEGEND**

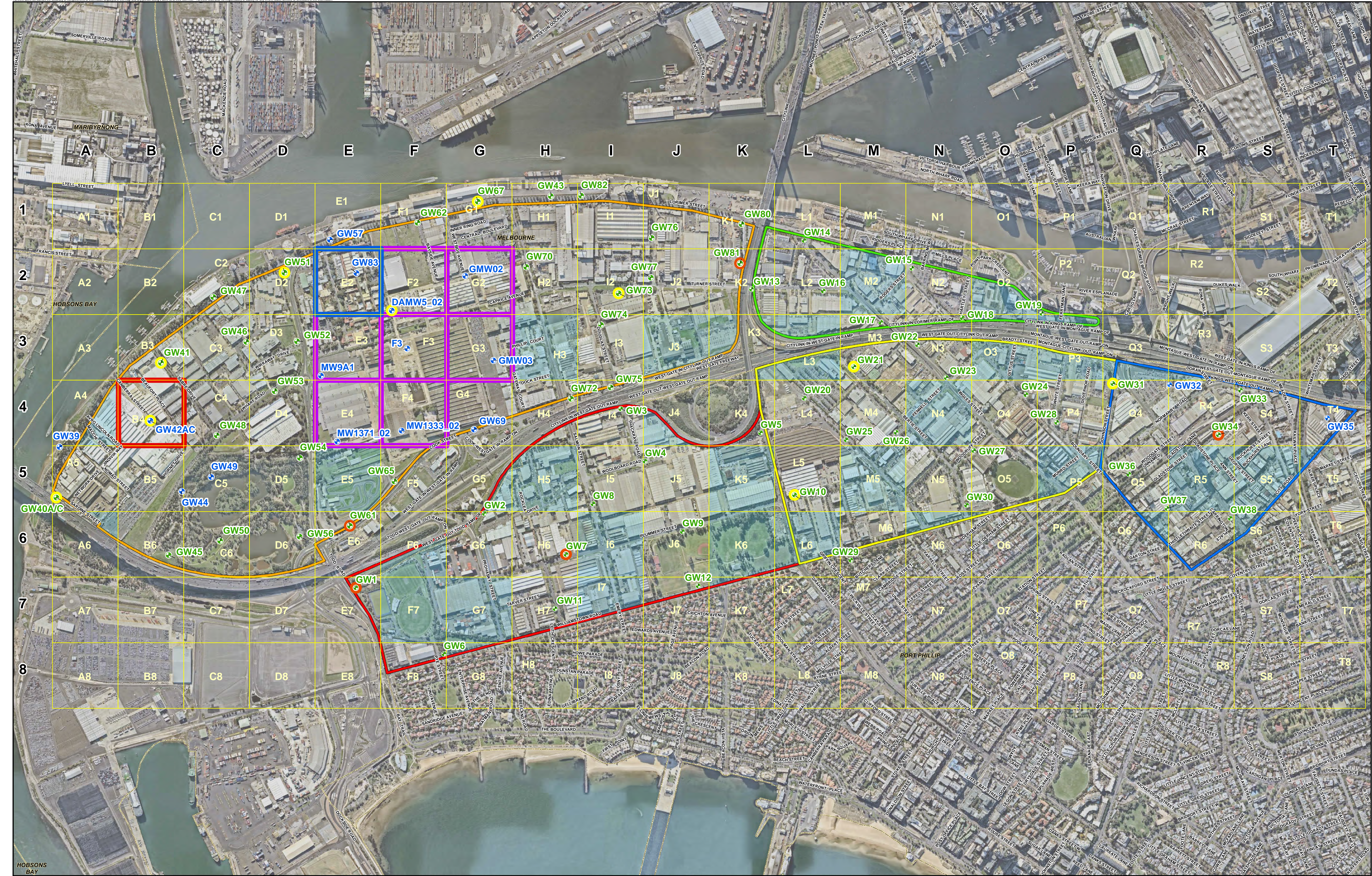
- Existing Well
- New Well
- Soil samples collected
- Inferred Flow Direction
- Inferred Groundwater Contours (mAHD)
- LGA Boundary
- 250m Grid
- Grid without Bore Location
- Employment Precinct
- Lorimer Precinct
- Montague Precinct
- Sandridge Precinct
- Wirraway Precinct

**INFERRED GW CONTOURS JULY 2017**

EPA  
 Regional Groundwater Assessment  
 Fisherman's Bend, Melbourne, VIC

Figure  
**F3**





PROJECT ID: 60537182  
 CREATED BY: DBR  
 LAST MODIFIED: 08/11/2017  
 www.aecom.com

DATUM: GDA 1994 PROJECTION: MGA ZONE 55  
 0 80 160  
 metres  
 (when printed at A1)

**LEGEND**

- Existing Well
- New Well
- LGA Boundary
- 250m Grid
- Boeing land
- DSTO land
- GMH land
- Grid without bore location
- Employment Precinct
- Lorimer Precinct
- Montague Precinct
- Sandridge Precinct
- Wirraway Precinct
- PFAS Signature
- acids
- sulfonates

**PFAS SIGNATURES**

EPA Regional Groundwater Assessment Fisherman's Bend, Melbourne, VIC	Figure F4
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# Gauging Results

## APPENDIX A





Well ID	Date	Eastings	Northings	Elevation TOC (mAHD)	Total Well Depth	Total Well Depth	Water Level (mBTC)	Water Level (mAHD)
GW1	2016	316394.9	5810553.2	2.50	4.50	-2.01	2.91	-0.42
GW1	Jul-17	316394.9	5810553.2	2.50	4.50	-2.01	1.74	0.75
GW2	2016	316883.5	5810836.1	3.97	4.00	-0.03	3.24	0.73
GW2	Jul-17	316883.5	5810836.1	3.97	4.00	-0.03	3.18	0.79
GW3	2016	317403.6	5811235	3.85	4.90	-1.05	3.04	0.81
GW3	Jul-17	317403.6	5811235	3.85	4.90	-1.05	3.09	0.76
GW4	2016	317495.7	5811035.3	3.82	5.10	-1.28	3.55	0.27
GW4	Jul-17	317495.7	5811035.3	3.82	5.10	-1.28	3.10	0.73
GW5	2016	317935.8	5811143.3	3.05	4.50	-1.45	2.33	0.72
GW5	Jul-17	317935.8	5811143.3	3.05	4.50	-1.45	2.36	0.69
GW6	2016	316729.8	5810300.9	2.25	4.00	-1.76	1.90	0.34
GW6	Jul-17	316729.8	5810300.9	2.25	4.00	-1.76	1.73	0.51
GW7	2016	317194.7	5810680.7	3.09	5.50	-2.41	2.64	0.45
GW7	Jul-17	317194.7	5810680.7	3.09	5.50	-2.41	2.63	0.46
GW8	2016	317297.9	5810872.8	3.13	4.20	-1.07	2.63	0.50
GW8	Jul-17	317297.9	5810872.8	3.13	4.20	-1.07	2.61	0.52
GW9	2016	317637.8	5810767.9	3.28	5.50	-2.22	2.76	0.52
GW9	Jul-17	317637.8	5810767.9	3.28	5.50	-2.22	2.78	0.50
GW10	2016	318065.1	5810906.7	3.10	5.50	-2.40	2.70	0.40
GW10	Jul-17	318065.1	5810906.7	3.10	5.50	-2.40	2.75	0.35
GW11	2016	317152.8	5810474.1	2.58	5.10	-2.52	2.12	0.46
GW11	Jul-17	317152.8	5810474.1	2.58	5.10	-2.52	2.13	0.45
GW12	2016	317698	5810560.8	2.85	4.20	-1.35	2.64	0.22
GW12	Jul-17	317698	5810560.8	2.85	4.20	-1.35	2.53	0.32
GW13	2016	317901.5	5811689.8	2.40	4.20	-1.80	2.280	0.12
GW13	Jul-17	317901.5	5811689.8	2.40	4.20	-1.80	2.485	-0.09
GW14	2016	318101	5811876	2.36	4.00	-1.64	1.937	0.42
GW14	Jul-17	318101	5811876	2.36	4.00	-1.64	2.957	-0.60
GW15	2016	318512	5811770.4	1.22	4.50	-3.28	0.940	0.28
GW15	Jul-17	318512	5811770.4	1.22	4.50	-3.28	0.968	0.25
GW16	2016	318174.4	5811683.8	2.48	4.00	-1.52	2.193	0.28
GW16	Jul-17	318174.4	5811683.8	2.48	4.00	-1.52	2.295	0.18
GW17	2016	318393.8	5811564.6	2.04	3.00	-0.96	2.363	-0.33
GW17	Jul-17	318393.8	5811564.6	2.04	3.00	-0.96	2.318	-0.28
GW19	2016	319006.5	5811598.5	1.56	5.50	-3.94	1.015	0.54
GW19	Jul-17	319006.5	5811598.5	1.56	5.50	-3.94	1.252	0.31
GW20	2016	318102	5811275.1	3.42	4.45	-1.04	2.850	0.57
GW20	Jul-17	318102	5811275.1	3.42	4.45	-1.04	2.939	0.48
GW21	2016	318290.6	5811395.4	2.61	4.00	-1.40	2.445	0.16
GW21	Jul-17	318290.6	5811395.4	2.61	4.00	-1.40	2.515	0.09
GW22	2016	318533.4	5811478.3	2.02	4.00	-1.98	2.369	-0.35
GW22	Jul-17	318533.4	5811478.3	2.02	4.00	-1.98	2.247	-0.23
GW23	2016	318642.6	5811353.2	1.90	4.00	-2.10	2.303	-0.40
GW23	Jul-17	318642.6	5811353.2	1.90	4.00	-2.10	2.168	-0.27
GW24	2016	318946.2	5811288.5	1.67	3.00	-1.33	1.375	0.30
GW24	Jul-17	318946.2	5811288.5	1.67	3.00	-1.33	1.428	0.25
GW25	2016	318261.5	5811117.5	3.17	5.00	-1.84	2.870	0.30
GW25	Jul-17	318261.5	5811117.5	3.17	5.00	-1.84	2.965	0.20
GW26	2016	318451.7	5811145.2	2.45	4.00	-1.55	2.475	-0.03
GW26	Jul-17	318451.7	5811145.2	2.45	4.00	-1.55	2.453	0.00
GW27	2016	318747.1	5811075.8	2.30	5.00	-2.70	3.192	-0.89
GW27	Jul-17	318747.1	5811075.8	2.30	5.00	-2.70	2.704	-0.40
GW28	2016	319063.1	5811183.3	1.62	2.50	-0.88	1.433	0.19
GW28	Jul-17	319063.1	5811183.3	1.62	2.50	-0.88	1.240	0.38

Well ID	Date	Easting	Northings	Elevation TOC (mAHD)	Total Well Depth	Total Well Depth	Water Level (mBTOC)	Water Level (mAHD)
GW29	2016	318279.2	5810658.7	2.58	4.00	-1.42	2.845	-0.26
GW29	Jul-17	318279.2	5810658.7	2.58	4.00	-1.42	2.831	-0.25
GW30	2016	318719.8	5810867.9	2.16	4.50	-2.34	2.699	-0.54
GW30	Jul-17	318719.8	5810867.9	2.16	4.50	-2.34	2.572	-0.41
GW31	2016	319277.3	5811331.1	1.49	4.50	-3.01	1.664	-0.18
GW31	Jul-17	319277.3	5811331.1	1.49	4.50	-3.01	1.450	0.04
GW32	2016	319493.6	5811327.3	1.88	8.74	-6.87	2.282	-0.41
GW32	Jul-17	319493.6	5811327.3	1.88	8.74	-6.87	2.125	-0.25
GW33	2016	319763	5811306.6	2.51	4.00	-1.49	2.347	0.16
GW33	Jul-17	319763	5811306.6	2.51	4.00	-1.49	2.120	0.39
GW34	2016	319678.8	5811135.9	1.10	4.00	-2.90	1.593	-0.50
GW34	Jul-17	319678.8	5811135.9	1.10	4.00	-2.90	1.570	-0.47
GW35	2016	320094.5	5811199.7	2.00	4.00	-2.00	2.137	-0.14
GW35	Jul-17	320094.5	5811199.7	2.00	4.00	-2.00	2.240	-0.24
GW36	2016	319337.7	5810985.8	1.67	3.50	-1.83	2.647	-0.98
GW36	Jul-17	319337.7	5810985.8	1.67	3.50	-1.83	2.576	-0.91
GW37	2016	319483.1	5810855.6	2.24	7.00	-4.77	2.864	-0.63
GW37	Jul-17	319483.1	5810855.6	2.24	7.00	-4.77	2.952	-0.72
GW38	2016	319724.1	5810818.2	2.36	7.00	-4.64	3.537	-1.18
GW38	Jul-17	319724.1	5810818.2	2.36	7.00	-4.64	3.478	-1.12
GW39	May-17	315266.55	5811089.92	1.94	1.000	0.940	1.534	0.41
GW39	Jul-17	315266.55	5811089.92	1.94	1.000	0.940	1.945	-0.01
GW40A/C	May-17	315254.09	5810896.88	2.19	2.000	0.194	1.664	0.53
GW40A/C	Jul-17	315254.09	5810896.88	2.19	2.000	0.194	1.956	0.24
GW41	May-17	315652.79	5811410.02	1.88	3.770	-1.893	1.578	0.30
GW41	Jul-17	315652.79	5811410.02	1.88	3.770	-1.893	1.774	0.10
GW43	May-17	317136.82	5812044.18	2.17	4.460	-2.293	1.836	0.33
GW43	Jul-17	317136.82	5812044.18	2.17	4.460	-2.293	1.898	0.27
GW44	May-17	315732.45	5810920.84	2.98	6.140	-3.159	2.595	0.39
GW44	Jul-17	315732.45	5810920.84	2.98	6.140	-3.159	2.661	0.32
GW45	May-17	315681.68	5810678.12	3.72	5.030	-1.312	2.264	1.45
GW45	Jul-17	315681.68	5810678.12	3.72	5.030	-1.312	3.415	0.30
GW46	May-17	315977.41	5811489.27	2.34	3.960	-1.620	2.167	0.17
GW46	Jul-17	315977.41	5811489.27	2.34	3.960	-1.620	2.229	0.11
GW47	May-17	315884.2	5811686.6	1.92	3.220	-1.302	1.751	0.17
GW47	Jul-17	315884.2	5811686.6	1.92	3.220	-1.302	1.760	0.16
GW48	May-17	315865.15	5811133.39	2.33	3.690	-1.358	2.060	0.27
GW48	Jul-17	315865.15	5811133.39	2.33	3.690	-1.358	2.106	0.23
GW49	May-17	315843.92	5810975.08	4.77	7.450	-2.684	3.048	1.72
GW49	Jul-17	315843.92	5810975.08	4.77	7.450	-2.684	3.124	1.64
GW50	May-17	315878.03	5810732.38	3.30	4.170	-0.873	2.946	0.35
GW50	Jul-17	315878.03	5810732.38	3.30	4.170	-0.873	2.959	0.34
GW51	May-17	316122.65	5811753.17	2.34	3.270	-0.931	1.944	0.40
GW51	Jul-17	316122.65	5811753.17	2.34	3.270	-0.931	2.078	0.26
GW52	May-17	316170.42	5811492.44	2.69	3.920	-1.232	2.273	0.42
GW52	Jul-17	316170.42	5811492.44	2.69	3.920	-1.232	2.386	0.30
GW53	May-17	316085.28	5811301.56	2.62	3.820	-1.204	2.481	0.13
GW53	Jul-17	316085.28	5811301.56	2.62	3.820	-1.204	2.532	0.08
GW54	May-17	316181.54	5811047.99	3.45	4.760	-1.313	3.028	0.42
GW54	Jul-17	316181.54	5811047.99	3.45	4.760	-1.313	3.033	0.41
GW56	May-17	316180.3	5810748	1.95	3.980	-2.028	1.404	0.55
GW56	Jul-17	316180.3	5810748	1.95	3.980	-2.028	1.423	0.53
GW57	May-17	316295.71	5811878.79	1.79	1.570	0.221	1.213	0.58
GW57	Jul-17	316295.71	5811878.79	1.79	1.570	0.221	1.457	0.33
GW61	May-17	316372.13	5810788.84	3.19	4.010	-0.824	1.321	1.87



Well ID	Date	Easting	Northings	Elevation TOC (mAHD)	Total Well Depth	Total Well Depth	Water Level (mBTOC)	Water Level (mAHD)
GW61	Jul-17	316372.13	5810788.84	3.19	4.010	-0.824	2.374	0.81
GW62	May-17	316629.77	5811943.45	1.98	4.220	-2.236	1.624	0.36
GW62	Jul-17	316629.77	5811943.45	1.98	4.220	-2.236	1.700	0.28
GW65	May-17	316541.09	5810957.84	4.34	4.960	-0.621	3.417	0.92
GW65	Jul-17	316541.09	5810957.84	4.34	4.960	-0.621	3.483	0.86
GW67	May-17	316858.86	5812024.37	2.10	4.000	-1.899	1.753	0.35
GW67	Jul-17	316858.86	5812024.37	2.10	4.000	-1.899	1.881	0.22
GW69	May-17	316844.56	5811155.92	3.83	3.900	-0.067	2.700	1.13
GW69	Jul-17	316844.56	5811155.92	3.83	3.900	-0.067	2.769	1.06
GW70	May-17	317043.31	5811774.92	2.05	3.600	-1.546	1.345	0.71
GW70	Jul-17	317043.31	5811774.92	2.05	3.600	-1.546	1.414	0.64
GW72	May-17	317213.88	5811273.01	3.36	3.940	-0.577	2.408	0.96
GW72	Jul-17	317213.88	5811273.01	3.36	3.940	-0.577	2.518	0.85
GW73	May-17	317394.88	5811674.82	2.96	4.560	-1.604	2.367	0.59
GW73	Jul-17	317394.88	5811674.82	2.96	4.560	-1.604	2.709	0.25
GW74	May-17	317328.25	5811554.1	3.01	4.090	-1.083	2.236	0.77
GW74	Jul-17	317328.25	5811554.1	3.01	4.090	-1.083	2.344	0.66
GW75	May-17	317364.6	5811316.22	3.64	4.150	-0.513	2.667	0.97
GW75	Jul-17	317364.6	5811316.22	3.64	4.150	-0.513	2.795	0.84
GW76	May-17	317520.73	5811885.61	2.26	5.890	-3.627	1.999	0.26
GW76	Jul-17	317520.73	5811885.61	2.26	5.890	-3.627	2.089	0.17
GW77	May-17	317518.02	5811734.4	1.96	4.910	-2.954	1.860	0.10
GW77	Jul-17	317518.02	5811734.4	1.96	4.910	-2.954	1.960	0.00
GW80	May-17	317862.16	5811922.68	2.058	5.000	-2.942	1.580	0.48
GW80	Jul-17	317862.16	5811922.68	2.058	5.000	-2.942	1.794	0.26
GW81	May-17	317860.71	5811790.84	2.408	5.000	-2.592	1.980	0.43
GW81	Jul-17	317860.71	5811790.84	2.408	5.000	-2.592	2.192	0.22
GW82	May-17	317326.53	5812100.49	1.887	5.000	-3.113	1.600	0.29
GW82	Jul-17	317326.53	5812100.49	1.887	5.000	-3.113	1.625	0.26
MW9A1	May-17	316261.7	5811361.2	2.775	4.880	-2.105	2.238	0.54
MW9A1	Jul-17	316261.7	5811361.2	2.775	4.880	-2.105	2.304	0.47
MW1371_02	May-17	316323.3	5811110.3	3.208	3.650	-0.442	2.648	0.56
MW1371_02	Jul-17	316323.3	5811110.3	3.208	3.650	-0.442	2.672	0.54
DAMW5_02	May-17	316531.3	5811609.4	2.157	2.470	-0.313	1.610	0.55
DAMW5_02	Jul-17	316531.3	5811609.4	2.157	2.470	-0.313	1.285	0.87
MW1333_02	May-17	316569.1	5811151.1	3.356	5.290	-1.934	2.082	1.27
MW1333_02	Jul-17	316569.1	5811151.1	3.356	5.290	-1.934	2.186	1.17
GMW02	May-17	316811.3	5811741.1	2.039	2.700	-0.661	1.526	0.51
GMW02	Jul-17	316811.3	5811741.1	2.039	2.700	-0.661	1.558	0.48
GMW03	May-17	316918.4	5811419	3.178	3.440	-0.262	1.800	1.38
GMW03	Jul-17	316918.4	5811419	3.178	3.440	-0.262	1.909	1.27

**Notes:**

mBTOC = meters below top of casing

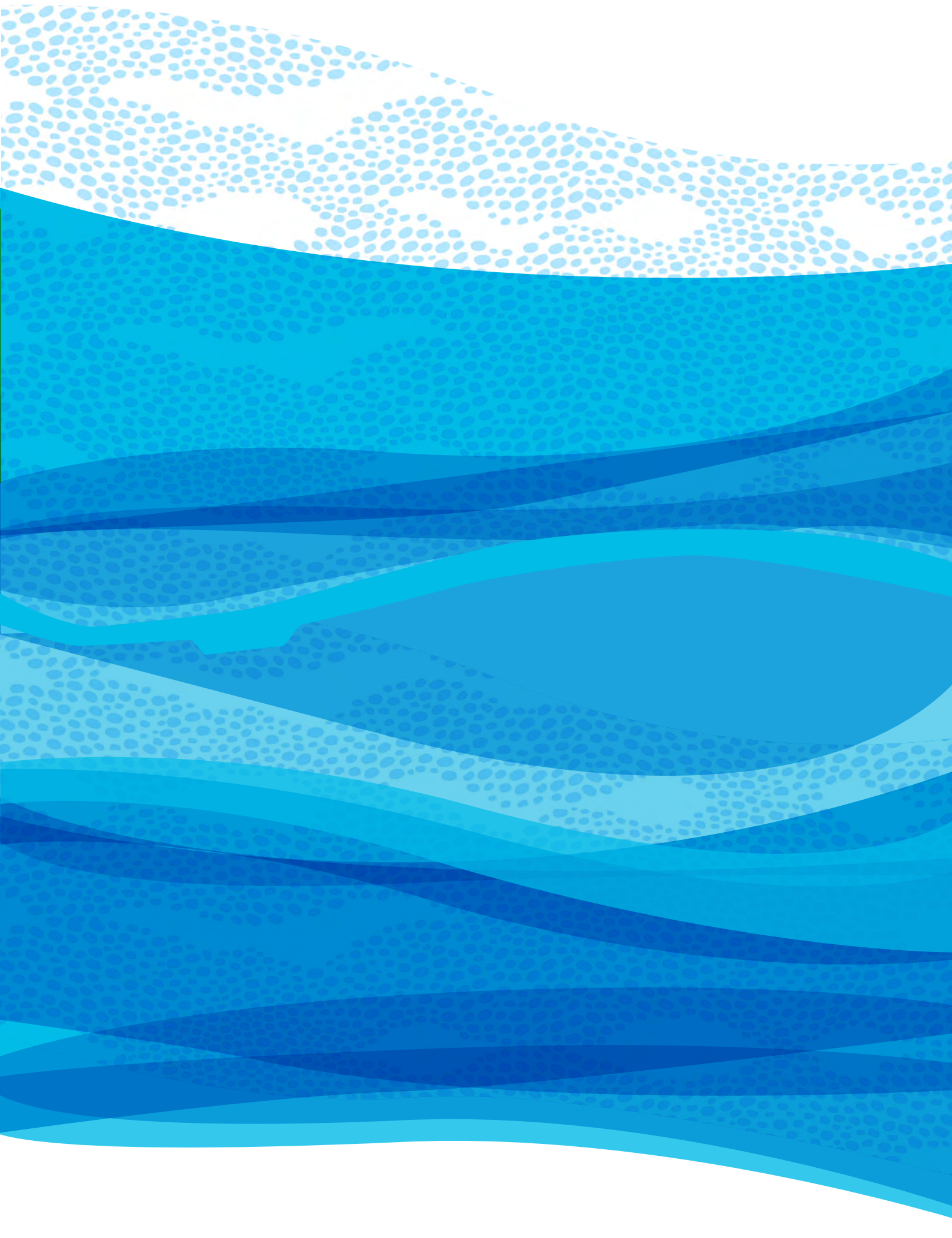
mAHD = meters Australian Height Datum

Locations that could not be surveyed due to access constraints – GW42A/C (Boeing), GMW83 (DSTO) and F3 (GMH). The lack of survey data at these three locations is not considered likely to alter the groundwater contours on a regional scale, however, it should be noted that the inferred flow direction map may be missing isolated groundwater flow anomalies at these locations (if present).

# **Groundwater Sampling Forms**

## **APPENDIX B**









GROUNDWATER SAMPLING RECORD FORM  
LOW FLOW PURGING and SAMPLING (incl. low yielding wells)

PROJECT INFORMATION

WELL ID: **BH9**

Project Number: **1780642** Date: **13/07/17**

Client: **BAA/Geosyntec** Sampled By: **AHL**

Site Location: **BAA Port Melbourne** Time: \_\_\_\_\_

Weather Conditions (Temperature, Precipitation, Wind) **Clear, windy, 8°C**

Well Maintenance Required? YES / NO

Detail \_\_\_\_\_

WELL INFORMATION	
Diameter of standpipe (mm)	—
Standpipe stick up (m)	~0.40
Surveyed reference point	—
Depth to top of filter pack (from log)	—
Depth to bottom of filter pack (from log)	—
Depth of well (from log)	—

mbRP - metres below top of reference point  
Hose volume - 0.12 L/m of 1/2 inch diameter hose  
Hose volume - 0.07 L/m of 3/8 inch diameter hose  
Hose volume - 0.03 L/m of 1/4 inch diameter hose

GAUGING INFORMATION			
Pre-Sampling Information		Purging and Sampling Information	
Interface probe used?	YES / NO	Depth of pump intake (mbRP)	2.40
Initial depth to water (mbRP)	2.487	Length of hose (m)	5.00
Depth to product (mbRP)	—	Volume in hose (L)	0.35
Thickness of product (m)	—	Depth to water after placement of pump (mbRP)	2.490
Bailed product thickness (m)	—	Depth to water at end of purging (mbRP)	2.530
Total depth of well (mbRP)	3.698	Depth to water after collection of samples (mbRP)	2.530
Thickness of sediment on base of well (m)	—	Purging and Sampling Method	Low flow

Controller settings	
CPM	CPM 3
Refill	11.0
Discharge	9.0
Throttle	25 psi

WQM Model **YSI Pro Plus 10H100324**

WQM Calibration Certificate **Airmet calibrated**

Time	Cumulative Volume Purged (L)	Flow Rate (L/min)	Depth to Water (mbRP)	GROUNDWATER MONITORING WELL PURGING RECORD					Appearance (Colour, Turbidity, Odour, etc)
				±0.1	±5%	±10	±10%	±0.5°C	
				pH	Conductivity (µS)	Redox (mV)	Dissolved Oxygen (ppm)	Temperature (°C)	
08:50	0.4	0.4	2.547	6.29	102.9	89.0	0.63	15.0	Med brown, low-med turb, no odour
08:53	1.6	0.4	2.555	5.94	104.7	—	0.46	15.1	
08:56	2.8	0.4	2.556	5.67	105.2	-2.0	0.70	15.1	
08:59	4.0	0.4	2.560	5.62	106.5	-9.1	0.05	15.2	
09:02	5.2	0.4	2.558	5.59	109.5	-13.9	0.03	15.2	
09:05	6.4	0.4	2.560	5.59	108.3	-16.1	0.00	15.2	
09:08	7.3	0.3	2.532	5.59	111.6	-19.1	0.00	15.2	
09:11	8.2	0.3	2.530	5.58	113.9	-21.6	0.00	15.1	
09:14	9.1	0.3	2.530	5.58	116.9	-21.7	0.01	15.1	
09:17	10.0	0.3	2.530	5.58	116.8	-22.5	0.00	15.1	
09:20	10.9	0.3	2.530	5.59	114.6	-23.5	0.00	15.1	

SAMPLING RECORD

Time Sampled: **09:30**

Colour: **Med brown**

Odour: **None**

Turbidity:  Low  Medium  High

Hydrocarbon Sheen? Yes  No

DI Water Lab Certificate No. \_\_\_\_\_

Notes: **Extra bottle set filled → GW42AC (Aecom - Jacob Muller)**

Sample IDs: **BH9 / 50130717**

Primary Duplicate: \_\_\_\_\_

Secondary Duplicate: \_\_\_\_\_

Trip Blank: \_\_\_\_\_

Rinsate: \_\_\_\_\_

Field Blank: \_\_\_\_\_

Sample Containers/Preservation (F=Filtered; UF=Unfiltered; P=Preserved; UP=Unpreserved)

3 Vials (F/UP)

1 1L Amber

1 Plastic

1 Phenols/COD/NH3 (F/UF/UP)

1 Ferrous/Ferric Iron (F/UF; P/UP)

2 Metals (F/UF/UP) **1UF, 1F**

1 Cyanide

1 Sulphide

1 ORG PLASTIC

1 Other



GROUNDWATER SAMPLING RECORD FORM  
LOW FLOW PURGING and SAMPLING



PROJECT INFORMATION

Project Number: \_\_\_\_\_  
Client: \_\_\_\_\_  
Site Location: \_\_\_\_\_

Date: 13/07/17  
Sampled By: \_\_\_\_\_  
Time: \_\_\_\_\_

WELL ID: BH9

Time	Cumulative Volume Purged (L)	Cumulative Well Volume	Depth to Groundwater (mbRP)	±0.1	±5%	±10	±10%	±0.5	Appearance (Colour, Turbidity, Odour, etc)		
				pH	Conductivity (µS)	Redox (mV)	Dissolved Oxygen (ppm)	Temperature (°C)			
09:23	11.8	0.3	2.530	5.54	115.6	-24.3	0.00	15.2	11	11	11
09:26	12.7	0.3	2.530	5.60	117.1	-24.2	0.00	15.2	11	11	11

Other notes and observations:

# FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <u>GWO</u>			
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: <u>10/07/17</u>			
General Bore Information			Parameter Info.		Decontamination		Well Development or Well Sampling Event? (circle)		
Date of GW Level: <u>10/07/17</u>	Bore Radius (mm): <u>50mm</u>	Chem Kit Serial No.: <u>905mm</u>		<input checked="" type="checkbox"/> Decontaminated	Sampling Method		Hydrasleeve info.		
Depth to GW (m-pvc): <u>1.742</u>	Screen Interval (m):	Chem Kit Model:		<input type="checkbox"/> Dedicated	Low Flow Pump rate: <u>14</u>		Monitoring sequence followed (number in order):		
Bore Depth (m-pvc): <u>4.31</u>	Casing Radius (mm):	Corrected Redox: <u>Y / N</u>		<input checked="" type="checkbox"/> Disposable	Intake depth: <u>6</u>		Hydrasleeve Type:		
Depth to Product (m-pvc): <u>—</u>	Cover Type (gatic stick up): <u>gatic</u>	(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)	<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve		Sampling Depth (m-pvc): Gauging		
Product Thickness (m): <u>—</u>	Bore Locked (YES/NO): <u>yes</u>	Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra		Hydrasleeve Install time:		Hydrasleeve in	
	Key Type (if applicable): <u>ster.</u>	<input type="checkbox"/> Retrieved		<input type="checkbox"/> Other (specify) <u>SUBMERSIBLE</u>		Sampling Start Time:		Hydrasleeve out	
Calculated bore volume (L):	Includes/ excludes bore annulus (circle)	# purge volumes removed:		Total purged volume (L):		Parameters			
Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
14:37	0.3	1.742	<u>0.13</u>	1.16	4.97	7.39	-98	17.0°C	<i>clear, slightly silty, low turbidity, slight H<sub>2</sub>S odour, very pale brown / transparent</i>
14:40	1.2	1.738		0.49	4.98	7.52	-138	17.1°C	
14:43	2.1	1.740		0.42	5.00	7.53	-137	17.2°C	
14:46	3.0	1.740		0.31	5.03	7.55	-146	17.3°C	
14:49	3.9	1.740		0.21	5.07	7.53	-154	17.4°C	
14:52	4.8	1.740		0.16	5.09	7.54	-161	17.4°C	
				<i>SAMPLED.</i>					
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments	
Field Filtered: <u>metals</u>	Unfiltered:	x 40 mL Vial (HCl)		x 60 mL Ferrous		x 60 mL metals (HNO <sub>3</sub> )		Bore volume calculation, bore condition, fate of tubing, redox correction etc.	
		3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )		1 x 100 mL Amber		x 250 mL Plastic			
		1 x purple		1 x sulphate		1 x 500mL purple			
		1 x sulphide		2 x PFFOS					
Approval and Distribution									
Fieldwork Staff Signature: <u>[Signature]</u>		Date: <u>10/07/17</u>		Checker Name and Signature: _____			Date: _____		
Project Manager Signature: _____		Date: _____		Distribution: Project Central File					



# FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: GWO2					
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 14/07/17					
General Bore Information				Parameter Info.		Decontamination		Sampling Method		Hydrasleeve info.	
Date of GW Level: 14/07/17		Bore Radius (mm):		Chem Kit Serial No.: FLM90UR		<input checked="" type="checkbox"/> Decontaminated		<input checked="" type="checkbox"/> Low Flow Pump rate: CPM2		Monitoring sequence followed (number in order):	
Depth to GW (m-pvc): 3.144		Screen Interval (m):		Chem Kit Model:		<input type="checkbox"/> Dedicated		Intake depth:		Hydrasleeve Size:	
Bore Depth (m-pvc):		Casing Radius (mm):		Corrected Redox: Y / N		<input checked="" type="checkbox"/> Disposable		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve		Sampling Depth (m-pvc): Gauging	
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra		Hydrasleeve Install time: Hydrasleeve in	
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole				<input type="checkbox"/> Other (specify)		Sampling Start Time: Hydrasleeve out	
		Key Type (if applicable):		<input checked="" type="checkbox"/> Retrieved						Parameters	
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:				Total purged volume (L):			
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
14:51	0.66	3.14	CPM2	2.21	2960	7.01	-107	17.90	Clear, no odour		
14:54	1.20	3.15	CPM2	1.16	3050	7.01	-114	18.10	as above		
14:57	1.86	3.14	CPM2	0.59	3080	7.01	-121	18.20	" "		
15:00	2.40	3.16	CPM2	0.35	3090	7.01	-125	18.20	" "		
15:03	3.00	3.14	CPM2	0.27	3100	7.01	-126	18.20	" "		
15:06	3.60	3.14	CPM2	0.25	3100	7.01	-126	18.10	" "		
Parameters				Stable		Well		sampled			
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments			
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.				
1	9	3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	1 x 250 mL Plastic green							
			1 Purple	1 Yellow							
				1 Orange							
Approval and Distribution											
Fieldwork Staff Signature: <i>Jessie Anke</i>		Date: 14/07/17		Checker Name and Signature: <i>[Signature]</i>		Date:					
Project Manager Signature:		Date:		Distribution: Project Central File							

# FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Avenyll Coyne		Bore ID: <i>Q403</i>					
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: <i>11/07/17</i>					
General Bore Information				Parameter Info.		Well Development or Well Sampling Event? (circle)					
Date of GW Level: <i>11/07/17</i>		Bore Radius (mm): <i>50mm</i>		Chem Kit Serial No.: <i>90FLW</i>		Sampling Method					
Depth to GW (m-pvc): <i>3.091</i>		Screen Interval (m):		Chem Kit Model:		Hydrasleeve info.					
Bore Depth (m-pvc): <i>4.58</i>		Casing Radius (mm):		Corrected Redox: <i>Y / N</i>		Monitoring sequence followed (number in order):					
Depth to Product (m-pvc):		Cover Type (gate/stick up):		(The correction to apply is probe dependent)		Gauging					
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole <input checked="" type="checkbox"/> Retrieved		Hydrasleeve Type:					
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Hydrasleeve Install time:					
						Total purged volume (L):					
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
<i>11:24</i>	<i>0.3</i>	<i>3.099</i>	<i>CPM3</i>	<i>0.62</i>	<i>2.24</i>	<i>7.35</i>	<i>-118mV</i>	<i>16°C</i>	<i>Highly turbid white, no odor, no green.</i>		
<i>11:27</i>	<i>1.2</i>	<i>3.116</i>	<i>" "</i>	<i>0.19</i>	<i>2.27</i>	<i>7.32</i>	<i>-124</i>	<i>17.6°C</i>			
<i>11:30</i>	<i>2.1</i>	<i>3.119</i>	<i>" "</i>	<i>0.12</i>	<i>2.30</i>	<i>7.31</i>	<i>-125</i>	<i>18.0°C</i>	<i>low turbidity transparent - pale brown. no green or odour.</i>		
<i>11:33</i>	<i>3.0</i>	<i>3.111</i>	<i>" "</i>	<i>0.08</i>	<i>2.28</i>	<i>7.29</i>	<i>-124</i>	<i>18°C</i>			
<i>11:36</i>	<i>3.9</i>	<i>3.112</i>	<i>" "</i>	<i>0.08</i>	<i>2.24</i>	<i>7.29</i>	<i>-124</i>	<i>18°C</i>			
<i>11:39</i>	<i>4.8</i>		<i>" "</i>	<i>0.07</i>	<i>2.19</i>	<i>7.31</i>	<i>-124</i>	<i>18.1°C</i>			
				<i>SAMPLED</i>							
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments			
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)		x 60 mL Ferrous		2 x 60 mL metals (HNO <sub>3</sub> )		Bore volume calculation, bore condition, fate of tubing, redox correction etc.			
<i>1 x metals</i>		3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )		1 x 100 mL Amber		x 250 mL Plastic					
		1 x <i>sample</i>		1 x <i>sample</i>		1 x <i>500ml plastic</i>					
		1 x <i>sample</i>									
Approval and Distribution											
Fieldwork Staff Signature: <i>[Signature]</i>			Date: <i>11/07/17</i>			Checker Name and Signature: _____			Date: _____		
Project Manager Signature: _____			Date: _____			Distribution: Project Central File					



**FQM - Groundwater Sampling and Purging Record**

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: G404	
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 11/07/17	
<b>General Bore Information</b>				<b>Parameter Info</b>		<b>Well Development or Well Sampling Event? (circle)</b>	
Date of GW Level: 11/07/17		Bore Radius (mm):		Chem Kit Serial No.: 90KUN		Decontamination	
Depth to GW (m-pvc): 3.096		Screen Interval (m):		Chem Kit Model:		<input checked="" type="checkbox"/> Decontaminated <input type="checkbox"/> Dedicated <input type="checkbox"/> Disposable <input type="checkbox"/> Other (specify)	
Bore Depth (m-pvc):		Casing Radius (mm):		Corrected Redox: Y / N		Sampling Method	
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		Intake depth: 5 <input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve <input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra <input type="checkbox"/> Other (specify) <i>SUBMERGIBLE</i>	
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole <input type="checkbox"/> Retrieved		Hydrasleeve info.	
Key Type (if applicable):						Hydrasleeve Size: Hydrasleeve Type: Sampling Depth (m-pvc): Hydrasleeve Install time: Sampling Start Time:	
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):	

Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
10:10	0.3	3.116	CPM 3	2.98	1277	7.13	11	14.8	light brown, med turbidity, no odour, no sheen.
10:13	1.2	3.112	" "	1.66	1274	7.07	15	16.9	
10:16	2.1	3.120	" "	1.10	1287	7.08	17	17.8	
10:19	3.0	3.118	" "	0.96	1291	7.09	19	18.2	slightly less turbid.
10:22	3.9	3.117	" "	0.76	1293	7.09	16	18.2	
10:25	4.8	3.122	" "	0.67	1295	7.09	-14	18.3	
10:28	5.7	3.124	" "	0.65	1296	7.08	-33	18.3	
10:31	6.6	3.119	" "	0.65	1294	7.09	-37	18.3	
10:34	7.5	3.113	" "	0.67	1294	7.08	-39	18.2	

SAMPLED

Acceptable Parameter Range: ± 10% DO, ± 3% E.C., ± 0.05 pH, ± 10 mV Redox, ± 0.2 °C Temp, ± 10% turbidity (if using a turbidity meter)

Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments	
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )	QC203 (dup)		Bore volume calculation, bore condition, fate of tubing, redox correction etc.		
1 x metals		3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	x 250 mL Plastic	QC204 (dup)				
x 2 (dup)		1 x purple	1 x 500 mL plastic						
x 1 (dup)		2 x FFAS (no prep)	1 x subtile						

Approval and Distribution

Fieldwork Staff Signature: *[Signature]* Date: 11/07/17

Checker Name and Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Project Manager Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Distribution: Project Central File

# FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <b>GW05</b>					
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: <b>11/07/17</b>					
General Bore Information				Parameter Info.		Well Development or Well Sampling Event? (circle)					
Date of GW Level: <b>11/07/17</b>		Bore Radius (mm): <b>50 mm</b>		Chem Kit Serial No.: <b>90 FEMV</b>		<input checked="" type="checkbox"/> Decontaminated					
Depth to GW (m-pvc): <b>2.438</b>		Screen Interval (m):		Chem Kit Model:		<input type="checkbox"/> Dedicated					
Bore Depth (m-pvc): <b>3.75</b>		Casing Radius (mm):		Corrected Redox: <b>Y / N</b>		<input checked="" type="checkbox"/> Disposable					
Depth to Product (m-pvc):		Cover Type (gate/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)					
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input checked="" type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve					
		Key Type (if applicable): <b>Allen</b>		<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra					
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		<input checked="" type="checkbox"/> Other (specify) <b>SUBMERGABLES</b>					
						Total purged volume (L):					
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
14:24	0.3	2.560	cm3	0.79	2004	7.55	-146	14.6	Highly turbid, black, no odor or green		
14:27	1.2	2.540	" "	0.15	2024	7.59	-158	16.1			
14:30	2.1	2.540	" "	0.10	2044	7.60	-164	16.3°C			
14:33	3.0	2.534	" "	0.08	2051	7.60	-169	16.5°C			
14:36	3.9	2.521	" "	0.08	2056	7.59	-172	16.7°C	medium turbidity		
14:39	4.8	2.513	" "	0.19	2057	7.59	-165	16.6°C			
14:42	5.7	2.549	" "	0.08	2063	7.58	-168	16.7°C			
				<b>SAMPLED</b>							
<b>Acceptable Parameter Range:</b>				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments			
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.				
1x metals		x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	x 100 mL Amber	x 250 mL Plastic							
		1x purple	1x sulphuric	1x 500mL, 100mL							
		1x sulphide									
Approval and Distribution											
Fieldwork Staff Signature:		Date: <b>11/07/17</b>		Checker Name and Signature: _____		Date: _____					
Project Manager Signature: _____		Date: _____		Distribution: Project Central File							

# FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: 9206			
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 11/07/17			
General Bore Information				Parameter Info.		Decontamination			
Date of GW Level: 11/07/17	Bore Radius (mm): 70mm	Chem Kit Serial No.: 90 PLMV	<input checked="" type="checkbox"/> Decontaminated		<input checked="" type="checkbox"/> Low Flow Pump rate: 15		Monitoring sequence followed (number in order):		
Depth to GW (m-pvc): 1.720	Screen Interval (m):	Chem Kit Model:	<input type="checkbox"/> Dedicated		Intake depth: 5				
Bore Depth (m-pvc): 3.53	Casing Radius (mm):	Corrected Redox: Y / N	<input checked="" type="checkbox"/> Disposable		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve		Hydrasleeve Size:		
Depth to Product (m-pvc):	Cover Type (gatic/stick up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra		Hydrasleeve Type:		
Product Thickness (m):	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole <input checked="" type="checkbox"/> Retrieved			<input type="checkbox"/> Other (specify) SUBMERSIBLE		Sampling Depth (m-pvc): Gauging		
	Key Type (if applicable): Allen						Hydrasleeve Install time: Hydrasleeve in		
Calculated bore volume (L):	Includes/ excludes bore annulus (circle)	# purge volumes removed:	Total purged volume (L):				Sampling Start Time: Hydrasleeve out		
Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
8:31	0.3	1.719	CM3	0.80	3.70	6.79	-99	13.6°C	fate red/brown, med turbidity, no odour or taste.
8:34	1.2	1.722	" "	0.61	3.37	6.81	-102	14.7°C	
8:37	2.1	1.719	" "	0.29	3.31	6.84	-103	15.1°C	
8:40	3.0	1.720	" "	0.19	3.29	6.88	-110	15.2°C	
8:43	3.9	1.726	" "	0.16	3.29	6.90	-114	15.2°C	
8:46	4.8	1.721	" "	0.14	3.29	6.92	-117	15.3°C	
			SAMPLED						
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
Analytes Sampled for:		Bottles Collected			QA/QC Information		Field Comments		
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2	x 60 mL metals (HNO <sub>3</sub> )	Bore volume calculation, bore condition, fate of tubing, redox correction etc.			
1 x metals		3	x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1	x 250 mL Plastic				
		1	x 100 mL Amber	1	x sulphate				
		1	x sulphide	1	x 500 mL Plastic				
Approval and Distribution									
Fieldwork Staff Signature:		Date: 11/07/17		Checker Name and Signature:		Date:			
Project Manager Signature:		Date:		Distribution: Project Central File					



# FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: G107			
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 10/07/17			
<b>General Bore Information</b>				<b>Parameter Info.</b>		<b>Decontamination</b>			
Date of GW Level: 10/07/17	Bore Radius (mm): 50mm	Chem Kit Serial No.: 917-PLMU	<input checked="" type="checkbox"/> Decontaminated		<input checked="" type="checkbox"/> Low Flow Pump rate: 15		Monitoring sequence followed (number in order):		
Depth to GW (m-pvc): 2.635	Screen Interval (m):	Chem Kit Model:	<input type="checkbox"/> Dedicated		Intake depth: 5				
Bore Depth (m-pvc): 5.23	Casing Radius (mm):	Corrected Redox: Y / N	<input checked="" type="checkbox"/> Disposable		<input type="checkbox"/> Bailor <input type="checkbox"/> Hydrasleeve		Hydrasleeve Size:		
Depth to Product (m-pvc):	Cover Type (gate/stick up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra		Hydrasleeve Type:		
Product Thickness (m):	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole <input type="checkbox"/> Retrieved			<input checked="" type="checkbox"/> Other (specify) SUBMERGIBLE		Sampling Depth (m-pvc):		
Calculated bore volume (L):	Key Type (if applicable): open						Hydrasleeve Install time:		
	Includes/ excludes bore annulus (circle)	# purge volumes removed:					Sampling Start Time:		
							Parameters		
<b>Water Quality Parameters</b>									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
15:32	0.3	2.634	CM3	3.25	2.55	7.20	-92	16.4	pale brown, med turbidity, no odour
15:35	1.2	2.627		0.63	2.55	7.25	-98	17.1°C	
15:38	2.1			0.42	2.33	7.26	-100	17.2°C	
15:41	3.0	2.629		0.32	2.34	7.26	-105	17.3°C	
15:44	3.9	2.629		0.24	2.34	7.26	-109	17.3°C	
15:47	4.8	2.629		0.16	2.33	7.31	-112	17.3°C	
				SAMPLED.					
<b>Acceptable Parameter Range:</b>				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
<b>Analytes Sampled for:</b>		<b>Bottles Collected</b>				<b>QA/QC Information</b>		<b>Field Comments</b>	
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2	x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.	
1 x metals		3	x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1	x 100 mL Amber				
		1	x 250 mL Plastic	1	x 500 mL plastic				
		1	x subside	2	x PFA				
<b>Approval and Distribution</b>									
Fieldwork Staff Signature:		Date: 10/07/17		Checker Name and Signature:		Date:			
Project Manager Signature:		Date:		Distribution: Project Central File					

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**FQM - Groundwater Sampling and Purging Record**

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <i>CW08</i>			
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 14/07/17			
General Bore Information				Parameter Info.		Decontamination			
Date of GW Level: 14/07/17	Bore Radius (mm): 50mm	Chem Kit Serial No.: 90FLW	<input checked="" type="checkbox"/> Decontaminated		<input checked="" type="checkbox"/> Low Flow Pump rate: 15		Monitoring sequence followed (number in order):		
Depth to GW (m-pvc): 2.588	Screen Interval (m):	Chem Kit Model:	<input type="checkbox"/> Dedicated		Intake depth: 3		Hydrasleeve Size:		
Bore Depth (m-pvc):	Casing Radius (mm):	Corrected Redox: Y / N	<input checked="" type="checkbox"/> Disposable		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve		Hydrasleeve Type:		
Depth to Product (m-pvc):	Cover Type (gate/stick up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra		Sampling Depth (m-pvc):		
Product Thickness (m):	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole			<input type="checkbox"/> Other (specify) <i>Submersible</i>		Hydrasleeve Install time:		
	Key Type (if applicable): <i>Allen</i>	<input checked="" type="checkbox"/> Retrieved					Sampling Start Time:		
Calculated bore volume (L):	Includes/ excludes bore annulus (circle)	# purge volumes removed:					Hydrasleeve in		
							Hydrasleeve out		
							Parameters		
Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.O. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
9:36	0.3	2.593	0.23	0.55	1.94	6.53	-46	14.1°C	<i>double pump, red turbidity, no screen observed</i>
9:39	1.2	2.595	" "	0.40	1467µS	6.54	-62	15.1°C	
9:42	2.1	2.593	" "	0.23	1365µS	6.56	-69	15.5°C	
9:45	3.0	2.592	" "	0.18	1301µS	6.61	-74	15.7°C	
9:48	3.9	2.598	" "	0.15	1288	6.62	-76	15.7°C	
9:51	4.8	2.595	" "	0.15	1278	6.62	-78	15.3°C	
				<i>5 samples</i>					
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments	
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	x 60 mL metals (HNO <sub>3</sub> )				Bore volume calculation, bore condition, fate of tubing, redox correction etc.	
		3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	x 250 mL Plastic					
		1 x sample	1 x sulphide	1 x standard plastic					
		1 x sulphide							
Approval and Distribution									
Fieldwork Staff Signature: <i>[Signature]</i>		Date: 14/07/17		Checker Name and Signature: _____		Date: _____			
Project Manager Signature: _____		Date: _____		Distribution: Project Central File					

# FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

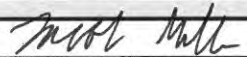
Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: G609					
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 11/07/17					
General Bore Information				Parameter Info.		Decontamination					
Date of GW Level: 2.779.5	Bore Radius (mm):	Chem Kit Serial No.:	<input type="checkbox"/> Decontaminated	Sampling Method		Hydrasleeve info.					
Depth to GW (m-pvc): 116.7117	Screen Interval (m):	Chem Kit Model:	<input type="checkbox"/> Dedicated	<input type="checkbox"/> Low Flow Pump rate:	Hydrasleeve Size:	Monitoring sequence followed (number in order):					
Bore Depth (m-pvc):	Casing Radius (mm):	Corrected Redox: Y / N	<input type="checkbox"/> Disposable	Intake depth:	Hydrasleeve Type:						
Depth to Product (m-pvc):	Cover Type (gatic/stick up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)	<input type="checkbox"/> Bailer	<input type="checkbox"/> Hydrasleeve	Sampling Depth (m-pvc):	Gauging				
Product Thickness (m):	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Peristaltic Pump	<input type="checkbox"/> Waterra	Hydrasleeve Install time:	Hydrasleeve in				
	Key Type (if applicable):	<input type="checkbox"/> Retrieved		<input type="checkbox"/> Other (specify)		Sampling Start Time:	Hydrasleeve out				
Calculated bore volume (L):	Includes/ excludes bore annulus (circle)	# purge volumes removed:	Total purged volume (L):								
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
13:33	0.3	2.777	CM3	2.30	1174	7.43	-118	13.9°C	pale brown transparent, red turbidity, no odour or smell		
13:36	1.2	2.779	" "	0.58	1611	7.43	-125	15.6°C			
13:39	2.1	2.781	" "	0.28	1642	7.44	-131	16.3°C			
13:42	3.0	2.781	" "	0.20	1595	7.45	-134	16.6°C			
13:45	3.9	2.781	" "	0.15	1548	7.45	-134	16.6°C			
13:48	4.8	2.781	" "	0.13	1499	7.45	-133	16.7°C			
				SAMPLED							
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
Analytes Sampled for:		Bottles Collected			QA/QC Information		Field Comments				
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2	x 60 mL metals (HNO <sub>3</sub> )	Bore volume calculation, bore condition, fate of tubing, redox correction etc.					
1 x metals		3	x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1	x 100 mL Amber					x 250 mL Plastic	
		1	x purple	1	x sil plate					1	x round plastic
		1	x sulphide								
Approval and Distribution											
Fieldwork Staff Signature		Date		Checker Name and Signature		Date					
Project Manager Signature		Date		Distribution: Project Central File							



ANZ

FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend				Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: Gw10			
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 17/07/17					
General Bore Information			Parameter Info.		Decontamination		Sampling Method		Hydrasleeve info.		
Date of GW Level: 17/07/17		Bore Radius (mm):		Chem Kit Serial No.:		<input type="checkbox"/> Decontaminated		Low Flow Pump rate:		Hydrasleeve Size:	Monitoring sequence followed (number in order):
Depth to GW (m-pvc): 2.760		Screen Interval (m):		Chem Kit Model:		<input type="checkbox"/> Dedicated		Intake depth:		Hydrasleeve Type:	
Bore Depth (m-pvc):		Casing Radius (mm):		Corrected Redox: Y / N		<input type="checkbox"/> Disposable		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve		Sampling Depth (m-pvc): Gauging	
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra		Hydrasleeve Install time: Hydrasleeve in	
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole				<input type="checkbox"/> Other (specify)		Sampling Start Time: Hydrasleeve out	
		Key Type (if applicable):		<input type="checkbox"/> Retrieved						Parameters	
Calculated bore volume (L):			Includes/ excludes bore annulus (circle)			# purge volumes removed:			Total purged volume (L):		
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
8:47	0.60	1.77	CPM2	2.99	722	5.93	107	15.10	moderate brown turbidity, no odour		
8:50	1.20	1.76	CPM2	1.11	454	5.97	94	15.70	as above		
8:53	1.80	1.76	CPM2	0.84	473	6.14	89	16.00	" "		
8:56	2.40	1.77	CPM2	0.69	528	6.24	85	16.10	" "		
8:59	3.00	1.76	CPM2	0.66	592	6.29	80	16.20	" "		
9:02	3.60	1.77	CPM2	0.57	636	6.31	76	16.20	" "		
9:05	4.20	1.76	CPM2	0.66	647	6.32	74	16.20	" "		
9:08	4.80	1.77	CPM2	0.57	648	6.32	73	16.30	" "		
				Parameters Stabilized well sampled							
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments			
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)		x 60 mL Ferrous		2 x 60 mL metals (HNO <sub>3</sub> )		Bore volume calculation, bore condition, fate of tubing, redox correction etc.			
1	11	3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )		1 x 100 mL Amber		1 x 250 mL Plastic quen					
		2 PFAS		1 orange		1 yellow					
						1 purple					
Approval and Distribution											
 Fieldwork Staff Signature			17/10/17 Date		_____ Checker Name and Signature			_____ Date			
_____ Project Manager Signature			_____ Date		Distribution: Project Central File						

# FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Aveyll Coyne		Bore ID: <b>GWT</b>			
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: <b>11/07/17</b>			
General Bore Information				Parameter Info.		Decantamination			
Date of GW Level: <b>11/07/17</b>		Bore Radius (mm): <b>50mm</b>		Chem Kit Serial No.: <b>90FLMV</b>		<input checked="" type="checkbox"/> Decantaminated			
Depth to GW (m-pvc): <b>2.130</b>		Screen Interval (m):		Chem Kit Model:		<input type="checkbox"/> Dedicated			
Bore Depth (m-pvc): <b>4.35</b>		Casing Radius (mm):		Corrected Redox: <b>Y / N</b>		<input checked="" type="checkbox"/> Disposable			
Depth to Product (m-pvc): <b>—</b>		Cover Type (gate/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)			
Product Thickness (m): <b>—</b>		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Other (specify) <b>SUMMERFIELD</b>			
		Key Type (if applicable): <b>Allen</b>		<input type="checkbox"/> Retrieved					
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):			
Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
9:15	0.3	2.130	CPM3	2.09	959	7.13	-67	13.1	pale brown/white, med turbidity, no odour or smell.
9:18	1.2	2.135		0.78	915	7.08	-85	14.8	
9:21	2.1	2.137		0.59	902	7.08	-91	15.1	
9:24	3.0	2.134		0.41	896	7.10	-101	15.3	
9:27	4.9	2.148		0.36	888	7.11	-103	15.3	
9:30	4.8	2.138		0.31	885	7.12	-105	15.3	
9:33	5.7			0.27	880	7.12	-106	15.3	
				<b>SAMPLED</b>					
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments	
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )				Bore volume calculation, bore condition, fate of tubing, redox correction etc.	
		3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	x 250 mL Plastic					
		1 x purple	1 x sulphide	1 x 500 mL plastic					
		1 x sulphide							
Approval and Distribution									
Fieldwork Staff Signature:		Date: <b>11/07/17</b>		Checker Name and Signature			Date		
Project Manager Signature		Date		Distribution: Project Central File					



PPFAS

ANZ

FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <u>CW12</u>					
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: <u>12/07/17</u>					
General Bore Information				Parameter Info.		Decontamination					
Date of GW Level: <u>12/07/17</u>	Bore Radius (mm): <u>50mm</u>	Chem Kit Serial No.: <u>90 RAN</u>	<input checked="" type="checkbox"/> Decontaminated		<input checked="" type="checkbox"/> Low Flow Pump rate: <u>15</u>		Hydrasleeve Size:				
Depth to GW (m-pvc): <u>2.529</u>	Screen Interval (m):	Chem Kit Model:	<input type="checkbox"/> Dedicated		Intake depth: <u>5</u>		Hydrasleeve Type:				
Bore Depth (m-pvc): <u>4.02</u>	Casing Radius (mm):	Corrected Redox: Y <input type="checkbox"/> N <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/> Disposable		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve		Sampling Depth (m-pvc):				
Depth to Product (m-pvc):	Cover Type (gag/stick up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra		Hydrasleeve Install time:				
Product Thickness (m):	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole <input checked="" type="checkbox"/> Retrieved	<input type="checkbox"/> Other (specify) <u>SUB MEASURE</u>		Sampling Start Time:		Hydrasleeve out				
Key Type (if applicable): <u>AUER</u>		Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:					
Total purged volume (L):											
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or $\mu$ S/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
10:44	0.3	2.537	CM3	4.54	64.6	7.11	-56	10.9°C	pale brown, low turbidity, no odour or sheen.		
10:47	1.2	2.528	" "	0.69	885	6.81	-50	13.4°C			
10:50	2.1	2.529	" "	0.42	703	6.88	-54	13.8°C			
10:53	3.0	2.530	" "	0.37	567	6.92	-58	13.9°C			
10:56	3.9	2.530	" "	0.46	511	7.13	-56	13.9°C			
10:59	4.8	2.529	" "	0.48	496	7.15	-57	13.8°C			
11:02	5.7	2.530	" "	0.54	486	7.19	-57	13.6°C			
				SAMPLED							
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments			
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.				
<u>1 x metals</u>		3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	x 250 mL Plastic							
		3 x PPFAS	1 x sulphide	1 x 500mL post							
		1 x sulphide	1 x sample								
Approval and Distribution											
Fieldwork Staff Signature		Date		Checker Name and Signature		Date					
Project Manager Signature		Date		Distribution: Project Central File							

**FQM - Groundwater Sampling and Purging Record**

*PEAS*

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <i>GW13</i>	
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: <i>12/07/17</i>	
General Bore Information				Parameter Info.		Sampling Method	
Date of GW Level: <i>12/07/17</i>	Bore Radius (mm): <i>50mm</i>	Chem Kit Serial No.: <i>90FUMV</i>	<input checked="" type="checkbox"/> Decontaminated		Low Flow Pump rate: <i>10</i>		Monitoring sequence followed (number in order):
Depth to GW (m-pvc): <i>2-508</i>	Screen Interval (m):	Chem Kit Model:	<input type="checkbox"/> Dedicated		Intake depth: <i>5</i>		
Bore Depth (m-pvc):	Casing Radius (mm):	Corrected Redox: <i>Y / (N)</i>	<input checked="" type="checkbox"/> Disposable		<input type="checkbox"/> Bailer	<input type="checkbox"/> Hydrasleeve	Sampling Depth (m-pvc):
Depth to Product (m-pvc):	Cover Type (gate/stick up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Peristaltic Pump	<input type="checkbox"/> Waterra	Hydrasleeve Install time:
Product Thickness (m):	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole			<input checked="" type="checkbox"/> Other (specify) <i>SUBMERSIBLE</i>		Sampling Start Time:
	Key Type (if applicable): <i>Allen</i>	<input checked="" type="checkbox"/> Retrieved					Hydrasleeve out
Calculated bore volume (L):	Includes/ excludes bore annulus (circle)	# purge volumes removed:			Total purged volume (L):		Parameters

Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	BO (ppm or mg/L)	E.C. (mS/cm or uS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
13:53	0.3	2.508	<i>gpm 3</i>	<i>2.51</i>	<i>601</i>	<i>6.88</i>	<i>-14</i>	<i>14.9°C</i>	<i>Pale brown, low turbidity, no odour or steel</i>
13:56	1.2	2.506	<i>" "</i>	<i>0.91</i>	<i>1023</i>	<i>6.91</i>	<i>-11</i>	<i>15.5</i>	
13:59	2.1	2.511	<i>" "</i>	<i>0.38</i>	<i>1021</i>	<i>6.93</i>	<i>-18</i>	<i>15.8</i>	
14:02	3.0	2.515	<i>" "</i>	<i>0.37</i>	<i>998</i>	<i>6.94</i>	<i>-24</i>	<i>15.8°C</i>	
14:05	3.9	2.514	<i>" "</i>	<i>0.36</i>	<i>975</i>	<i>6.96</i>	<i>-30</i>	<i>15.8°C</i>	
14:08	4.8	2.515	<i>" "</i>	<i>0.31</i>	<i>965</i>	<i>6.97</i>	<i>-34</i>	<i>15.9°C</i>	
14:11	5.7	2.514	<i>" "</i>	<i>0.26</i>	<i>951</i>	<i>6.97</i>	<i>-38</i>	<i>15.9°C</i>	
<i>SAMPLED</i>									

Acceptable Parameter Range: ±10%    ±3%    ±0.05    ±10 mV    ±0.2 °C    ±10% turbidity (if using a turbidity meter)

Analytes Sampled for:		Bottles Collected			QA/QC Information	Field Comments
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )		Bore volume calculation, bore condition, fate of tubing, redox correction etc.
		3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	x 250 mL Plastic		
		1 x sulphide	1 x purple	2 x PEAS		
		1 x sulphide	1 x standard			

Approval and Distribution			
Fieldwork Staff Signature: <i>[Signature]</i>	Date: <i>12/07/17</i>	Checker Name and Signature: _____	Date: _____
Project Manager Signature: _____	Date: _____	Distribution: Project Central File	

*Recovered smartroll in well for duration of sampling*



FQM - Groundwater Sampling and Purging Record

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: GW14					
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 17/07/17					
General Bore Information				Parameter Info		Decontamination		Sampling Method		Hydrasleeve info.	
Date of GW Level: 17/07/17		Bore Radius (mm):		Chem Kit Serial No.: 90 FLMR		<input checked="" type="checkbox"/> Decontaminated		<input checked="" type="checkbox"/> Low Flow Pump rate: CPM1		Hydrasleeve Size:	
Depth to GW (m-pvc): 2.084		Screen Interval (m):		Chem Kit Model:		<input type="checkbox"/> Dedicated		Intake depth:		Hydrasleeve Type:	
Bore Depth (m-pvc): 2.68		Casing Radius (mm):		Corrected Redox: Y / N		<input checked="" type="checkbox"/> Disposable		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve		Sampling Depth (m-pvc):	
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra		Hydrasleeve Install time:	
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole				<input type="checkbox"/> Other (specify)		Sampling Start Time:	
		Key Type (if applicable):		<input type="checkbox"/> Retrieved						Parameters	
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:						Total purged volume (L):	
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
10:55	0.60	2.08	CPM1	5.84	557	6.45	98	15.10	brown moderate turbidity, no odour		
10:58	0.90	2.08	CPM1	5.45	343	6.42	92	15.30	as above		
11:01	1.20	2.08	CPM1	5.04	252	6.44	87	14.90	" "		
11:04	1.50	2.08	CPM1	5.01	210	6.39	87	15.00	" "		
11:07	1.80	2.08	CPM1	4.96	185	6.38	87	15.00	" "		
11:10	2.10	2.08	CPM1	4.90	173	6.37	84	14.90	" "		
11:13	2.40	2.08	CPM1	4.83	169	6.37	85	15.00	" "		
		Parameters		Stable		Well		Sampled			
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments			
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.				
1	9	3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	1 x 250 mL Plastic	orange						
				1	purple						
Approval and Distribution											
Fieldwork Staff Signature: <i>Jacob Miller</i>		Date: 17/07/17		Checker Name and Signature				Date			
Project Manager Signature		Date		Distribution: Project Central File							



# FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <b>GWIS</b>					
Client: EPA		Project Location:		Fieldwork Staff: <b>JM BP BH</b>		Sample Date: <b>12/7/17</b>					
General Bore Information				Parameter Info.		Decontamination					
Date of GW Level: <b>10/7/17</b>		Bore Radius (mm): <b>50</b>		Chem Kit Serial No.: <b>90FLMV</b>		<input checked="" type="checkbox"/> Decontaminated					
Depth to GW (m-pvc): <b>0.968</b>		Screen Interval (m): <b>1</b>		Chem Kit Model: <b>D</b>		<input type="checkbox"/> Dedicated					
Bore Depth (m-pvc): <b>4.45</b>		Casing Radius (mm): <b>1</b>		Corrected Redox: <b>Y / (N)</b>		<input checked="" type="checkbox"/> Disposable					
Depth to Product (m-pvc):		Cover Type (gatio/lock up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)					
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra					
		Key Type (if applicable): <b>hex</b>		<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Other (specify)					
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):					
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
12.52	0.5	0.840	CPM2	1.87	19410	6.74	-326	16.4	Strong H <sub>2</sub> S odour, reddish brown, low turb " " " " dark brown " " " " " " " " " ↓ with fine black susp solids		
12.55	0.9	1.030	CPM1	0.25	32500	6.87	-347	16.9			
12.58	1.2	1.170	"	0.02	34800	6.86	-346	17.4			
13.01	1.5	1.300	CPM1 (50/10)	0	35500	6.85	-349	17.6			
13.04	1.8	1.370	"	0	35400	6.85	-345	17.6			
13.07	2.1	1.450	CPM1 (56/4)	0	35400	6.84	-346	17.5			
13.10	2.4	1.500	"	0	35200	6.84	-343	17.5			
Stable & sampled											
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments			
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2	x 60 mL metals (HNO <sub>3</sub> )	/		Bore volume calculation, bore condition, fate of tubing, redox correction etc.  <b>GWL not stabilised - parameters stable.</b>			
<b>1 60mL Metals</b>		3	x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1	x 100 mL Amber					1	x 250 mL Plastic
		1	125 sulfite	1	60 nitrate						
		1	250 sulfide								
Approval and Distribution											
Fieldwork Staff Signature: _____		Date: <b>12/7/17</b>		Checker Name and Signature: _____		Date: _____					
Project Manager Signature: _____		Date: _____		Distribution: Project Central File							

**FQM - Groundwater Sampling and Purging Record**

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <i>Curtis</i>			
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: <i>12/07/17</i>			
<b>General Bore Information</b>				<b>Parameter Info.</b>		<b>Well Development or Well Sampling Event? (circle)</b>			
Date of GW Level: <i>12/07/17</i>		Bore Radius (mm): <i>50mm</i>		Chem Kit Serial No.:		Decontamination			
Depth to GW (m-pvc): <i>2-273</i>		Screen Interval (m):		Chem Kit Model:		<input type="checkbox"/> Decontaminated <input type="checkbox"/> Dedicated <input type="checkbox"/> Disposable <input type="checkbox"/> Other (specify)			
Bore Depth (m-pvc):		Casing Radius (mm):		Corrected Redox: Y / N		<input type="checkbox"/> Low Flow Pump rate: Intake depth:			
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve			
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole <input type="checkbox"/> Retrieved		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra <input type="checkbox"/> Other (specify)			
Key Type (if applicable): <i>Allen</i>						Hydrasleeve info:			
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):			
<b>Water Quality Parameters</b>									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
13:07	0.3	2.318	<i>Chm 3</i>	2.92	853	6.75	-32	16.4°C	<i>fate known, red turbidity, no other of these.</i>
13:10	1.2	2.339	" "	0.82	866	6.54	-38	17.4°C	
13:13	2.1	2.342	" "	0.34	892	6.70	-43	17.7°C	
13:16	3.0	2.340	" "	0.25	949	6.78	-54	18°C	
13:19	3.9	2.342	" "	0.20	968	6.82	-57	18°C	
13:22	4.8	2.342	" "	0.16	977	6.84	-60	18.1°C	
<b>Acceptable Parameter Range:</b>				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments	
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2	x 60 mL metals (HNO <sub>3</sub> )			<i>Bore volume calculation, bore condition, fate of tubing, redox correction etc.  Smartroll in well. Removal for duration of sampling</i>	
<i>metals</i>		3	x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1	x 100 mL Amber	x 250 mL Plastic			
		1	x 500 µL fluoride	1	x sample	1	x 500 mL flask		
		1	x 500 µL lead						
<b>Approval and Distribution</b>									
Fieldwork Staff Signature: <i>[Signature]</i>		Date: <i>12/07/17</i>		Checker Name and Signature		Date			
Project Manager Signature		Date		Distribution: Project Central File					



# FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <u>GLW17</u>					
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: <u>12/7/17</u>					
General Bore Information				Parameter Info.		Decontamination					
Date of GW Level: <u>10/7/17</u>		Bore Radius (mm): <u>50</u>		Chem Kit Serial No.: <u>90FLMV</u>		<input checked="" type="checkbox"/> Decontaminated					
Depth to GW (m-pvc): <u>2.318</u>		Screen Interval (m):		Chem Kit Model: <u>P</u>		<input type="checkbox"/> Dedicated					
Bore Depth (m-pvc): <u>2.720</u>		Casing Radius (mm):		Corrected Redox: <u>Y / (N)</u>		<input checked="" type="checkbox"/> Disposable					
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)					
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra					
<u>0.4x5</u>		Key Type (if applicable): <u>hex</u>		<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Other (specify)					
Calculated bore volume (L): <u>2.0</u>		Includes/ excludes bore annulus (circle)		# purge volumes removed: <u>3</u>		Total purged volume (L): <u>6.0</u>					
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
10:57	0.5	2.33	GPM 1	3.49	1331	6.59	38	13.1	No odour, greyish brown - low turb, mod turb.		
11:00	0.8	2.34	"	2.97	1385	6.59	31	13.4			
11:03	1.1	2.33	↓	2.31	1432	6.52	31	13.7			
11:06	1.4	↓	↓	2.06	1476	6.46	29	14.0			
11:09	1.7	↓	↓	1.33	1487	6.43	23	14.1			
11:12	2.0	↓	↓	0.99	1512	6.39	12	14.3			
11:15	2.3	↓	↓	1.07	1520	6.39	6	14.4			
11:18	2.6	↓	↓	0.72	1528	6.37	-1	14.5			
11:21	2.9	↓	↓	0.74	1520	6.37	-6	14.5			
			Stable * sampled								
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments			
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2	x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.			
<u>1 COMB metals</u>		3	x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1	x 100 mL Amber					1	x 250 mL Plastic
		1	125 Sulfite	1	60 Nitrate						
		1	250 Sulfite								
Approval and Distribution											
Fieldwork Staff Signature: <u>[Signature]</u>		Date: <u>12/7/17</u>		Checker Name and Signature: _____		Date: _____					
Project Manager Signature: _____		Date: _____		Distribution: Project Central File							



**FQM - Groundwater Sampling and Purging Record**

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: G6V19					
Client: EPA		Project Location:		Fieldwork Staff: JMBB BF		Sample Date: 12/7/17					
General Bore Information				Parameter Info.		Decontamination					
Date of GW Level: 10/7/17		Bore Radius (mm): 50		Chem Kit Serial No.: QP2LWV		<input checked="" type="checkbox"/> Decontaminated					
Depth to GW (m-pvc): 1.25		Screen Interval (m): 1		Chem Kit Model: D		<input type="checkbox"/> Dedicated					
Bore Depth (m-pvc): 5.18		Casing Radius (mm): 1		Corrected Redox: Y / (N)		<input checked="" type="checkbox"/> Disposable					
Depth to Product (m-pvc):		Cover Type (gatic/stickup):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)					
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Other (specify)					
		Key Type (if applicable): hex		<input checked="" type="checkbox"/> Retrieved							
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):					
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
13:49	0.5	1.19	CPM1	1.37	24900	6.57	-271	16.1	Strong H2S odour, Black, mod turbidity		
13:52	0.8	1.25	"	0.16	27600	6.63	-318	16.2			
13:55	1.1	1.40	"	0.02	31100	6.63	-338	16.1			
13:57	1.4	1.43	CPM1 3/5	0	31300	6.63	-340	16.1	Stopped pumping water - readings void		
14:00	1.7	1.47	↓	0	31600	6.63	-346	16.1			
14:03	2.0	1.57	↓	0	31800	6.64	-344	15.6			
14:06	2.2	1.20	CPM 2/3 (70%)	0	32100	6.62	-345	15.6			
14:09	2.4	1.80	↓	0	32400	6.61	-343	15.7			
14:12	2.6	1.86	↓	0	32200	6.60	-342	15.8			
14:18	2.8	1.90	↓	0	32500	6.59	-339	15.8			
14:18	3.0	1.96	↓	0	32500	6.59	-339	15.9			
14:21	3.2	2.00	↓		32400	6.59	-344	15.9	mod turb		
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments			
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	6	x 60 mL metals (HNO <sub>3</sub> )	QC 308 - dup QC 309 - trip		Bore volume calculation, bore condition, fate of tubing, redox correction etc.  GWL not stabilised - sampled after 20 mins purging - GWL close to stabilise			
3 metals		9	x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	3	x 100 mL Amber					3	x 250 mL Plastic
60ml		3	125 Sulfate	3	60 Nitrate						
		3	250 Sulfide	2	60 PFAS						
Approval and Distribution											
Fieldwork Staff Signature: <i>[Signature]</i>		Date: 12/7/17		Checker Name and Signature: _____		Date: _____					
Project Manager Signature: _____		Date: _____		Distribution: Project Central File							

# FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <u>Am20</u>				
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: <u>12/07/17</u>				
General Bore Information				Parameter Info.		Decontamination				
Date of GW Level: <u>12/07/17</u>		Bore Radius (mm): <u>50mm</u>		Chem Kit Serial No.: <u>90FLW</u>		<input checked="" type="checkbox"/> Decontaminated				
Depth to GW (m-pvc): <u>2.955</u>		Screen Interval (m):		Chem Kit Model:		<input checked="" type="checkbox"/> Dedicated				
Bore Depth (m-pvc):		Casing Radius (mm):		Corrected Redox: <u>Y / N</u>		<input checked="" type="checkbox"/> Disposable				
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input checked="" type="checkbox"/> Other (specify)				
Product Thickness (m):		Bore Locked (YES/NO): <u>YES</u>		Parameter method: <input checked="" type="checkbox"/> Downhole		<input checked="" type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve				
		Key Type (if applicable): <u>Allen</u>		<input checked="" type="checkbox"/> Retrieved		<input checked="" type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra				
						<input checked="" type="checkbox"/> Other (specify) <u>SUBMERSIBLE</u>				
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):				
Water Quality Parameters										
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	F.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity	
8:35	0-3	2.956	dm3	1.98	3.85	6.61	-26	9.0°C	fate known, low turbidity, no odour or smell	
8:38	1-2	2.958	" "	1.01	2.77	6.71	-89	14.2°C		
8:41	2-1	2.959	" "	0.88	2.59	6.73	-99	15.5°C		
8:44	3-0	2.960	" "	0.59	2.40	6.79	-108	16.3°C		
8:47	3-9	2.956	" "	0.34	2.37	6.86	-112	16.7°C		
8:50	4-8	2.969	" "	0.23	2.35	6.91	-115	16.8°C		
8:53	5-7	2.969	" "	0.19	2.36	6.94	-116	16.9°C		
				SAMPLED						
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)	
Analytes Sampled for:		Bottles Collected			QA/QC Information		Field Comments			
Field Filtered:	Unfiltered:						Bore volume calculation, bore condition, fate of tubing, redox correction etc.			
		x 40 mL Vial (HCl)	x 60 mL Ferrous	2	x 60 mL metals (HNO <sub>3</sub> )					
		3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	x 100 mL Amber		x 250 mL Plastic					
		1 x purple	x sulphide	1	x 500 mL, 10 mL					
Approval and Distribution										
Fieldwork Staff Signature: <u>[Signature]</u>		Date: <u>12/07/17</u>		Checker Name and Signature: _____			Date: _____			
Project Manager Signature: _____		Date: _____		Distribution: Project Central File						



ANZ  
**FQM - Groundwater Sampling and Purging Record**

*PFFAS*

AEI 1

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <i>CW21</i>			
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: <i>12/07/17</i>			
<b>General Bore Information</b>				<b>Parameter Info.</b>		<b>Decontamination</b>			
Date of GW Level: <i>12/07/17</i>		Bore Radius (mm): <i>50mm</i>		Chem Kit Serial No.: <i>90FUMV</i>		<input type="checkbox"/> Decontaminated			
Depth to GW (m-pvc): <i>2.541</i>		Screen Interval (m):		Chem Kit Model:		<input type="checkbox"/> Dedicated			
Bore Depth (m-pvc):		Casing Radius (mm):		Corrected Redox: <i>Y / N</i>		<input type="checkbox"/> Disposable			
Depth to Product (m-pvc):		Cover Type (gatic stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)			
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra			
Calculated bore volume (L):		Key Type (if applicable): <i>Allen.</i>		<input type="checkbox"/> Retrieved		<input type="checkbox"/> Other (specify)			
Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):					
<b>Water Quality Parameters</b>									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
<i>9:45</i>	<i>0.3</i>	<i>2.532</i>	<i>4pm3</i>	<i>257</i>	<i>1312</i>	<i>6.92</i>	<i>-94</i>	<i>11.3°C</i>	<i>pale brown, med turbidity, no odor or green</i>
<i>9:48</i>	<i>1.2</i>	<i>2.534</i>	<i>" "</i>	<i>0.80</i>	<i>1207</i>	<i>6.49</i>	<i>-66</i>	<i>14°C</i>	
<i>9:51</i>	<i>2.1</i>	<i>2.531</i>	<i>" "</i>	<i>0.34</i>	<i>1189</i>	<i>6.46</i>	<i>-65</i>	<i>15.2°C</i>	
<i>9:54</i>	<i>3.0</i>	<i>2.529</i>	<i>" "</i>	<i>0.25</i>	<i>1183</i>	<i>6.46</i>	<i>-66</i>	<i>15.7°C</i>	
<i>9:57</i>	<i>3.9</i>	<i>2.523</i>	<i>" "</i>	<i>0.17</i>	<i>1184</i>	<i>6.45</i>	<i>-67</i>	<i>15.8°C</i>	
<i>10:00</i>	<i>4.8</i>		<i>" "</i>	<i>0.17</i>	<i>1187</i>	<i>6.44</i>	<i>-67</i>	<i>15.9°C</i>	
				<i>SAMPLED</i>					
<b>Acceptable Parameter Range:</b>				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
<b>Analytes Sampled for:</b>		<b>Bottles Collected</b>				<b>QA/QC Information</b>		<b>Field Comments</b>	
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	x 60 mL metals (HNO <sub>3</sub> )			<i>Bore volume calculation, bore condition, fate of tubing, redox correction etc.</i>		
<i>1 x metals</i>		x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	x 100 mL Amber	x 250 mL Plastic					
		<i>1 x subsample</i>	<i>1 x purple</i>	<i>1 x small plastic</i>					
		<i>1 x subsample</i>	<i>2 x PFFAS</i>						
<b>Approval and Distribution</b>									
Fieldwork Staff Signature: <i>[Signature]</i>		Date: <i>12/07/17</i>		Checker Name and Signature: _____			Date: _____		
Project Manager Signature: _____		Date: _____		Distribution: Project Central File					



# FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: GW22				
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 11/7/17				
General Bore Information				Parameter Info.		Decontamination				
Date of GW Level: 10/7/17		Bore Radius (mm): 50		Chem Kit Serial No.: 90FLMV		<input checked="" type="checkbox"/> Decontaminated				
Depth to GW (m-pvc): 2.247		Screen Interval (m): 1		Chem Kit Model: 90FLMVD		<input type="checkbox"/> Dedicated				
Bore Depth (m-pvc): 3.72		Casing Radius (mm):		Corrected Redox: Y / (N)		<input checked="" type="checkbox"/> Disposable				
Depth to Product (m-pvc): 1		Cover Type (gatic/stick-up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve				
Product Thickness (m): 1.5		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra				
Key Type (if applicable): hex				<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Other (specify)				
Calculated bore volume (L): 7.5		Includes/ excludes bore annulus (circle)		# purge volumes removed: 3		Total purged volume (L): 22.5				
Water Quality Parameters										
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity	
15.15	0.5	2.26	CPM2	6.96	492	6.25	60	15.6	no odour, orange, mod turbidity	
15.18	1.1	2.26	"	1.95	532	6.17	64	16.4	orange/brown, high turbidity	
15.21	1.7			1.00	521	6.16	71	16.7		
15.24	2.3			0.64	525	6.15	72	16.7		
15.27	2.9			0.35	570	6.14	71	16.7		
15.30	3.8			0.28	617	6.16	67	16.8		
15.33	3.2			0.13	657	6.17	62	16.8		
15.36	3.6			0.17	693	6.17	59	16.8		
15.39	3.0			0.15	703	6.16	58	16.8		
15.42	4.4			0.19	713	6.16	57	16.8	Moderat Turb.	
Stable & sampled										
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)	
Analyses Sampled for		Bottles Collected				QA/QC Information		Field Comments		
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)		x 60 mL Ferrous		2 x 60 mL metals (HNO <sub>3</sub> )		Bore volume calculation, bore condition, fate of tubing, redox correction etc.  not pumping 100 mL per cycle - to check pump when return to shed  conductivity slightly higher than prev. %		
metals		3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )		1 x 100 mL Amber		1 x 250 mL Plastic				
60 mL		1 250 sulfate		1 60 nitrate						
		1 125 sulfate								
Approval and Distribution										
Fieldwork Staff Signature: <u>PS</u>		Date: 11/7/17		Checker Name and Signature		Date				
Project Manager Signature		Date		Distribution: Project Central File						



# FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: GW23					
Client: EPA		Project Location:		Fieldwork Staff: JMB/BH		Sample Date: 11/7/17					
General Bore Information				Parameter Info		Decontamination		Sampling Method		Hydrasleeve Info	
Date of GW Level: 10/7/17		Bore Radius (mm): 50		Chem Kit Serial No.: 90FLMV		<input checked="" type="checkbox"/> Decontaminated		<input checked="" type="checkbox"/> Low Flow Pump rate:		Monitoring sequence followed (number in order):	
Depth to GW (m-pvc): 2.168		Screen Interval (m): 1		Chem Kit Model: 90FLMVD		<input type="checkbox"/> Dedicated		Intake depth: 1.1m GL		Hydrasleeve Size:	
Bore Depth (m-pvc): 4.15		Casing Radius (mm): 1		Corrected Redox: Y / (N)		<input checked="" type="checkbox"/> Disposable		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve		Hydrasleeve Type:	
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra		Sampling Depth (m-pvc):	
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole <input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Other (specify)		Hydrasleeve Install time:	
Calculated bore volume (L): 10		Includes/ excludes bore annulus (circle)		# purge volumes removed: 3		Total purged volume (L): 30				Sampling Start Time:	
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
14:27	0.5	2.17	CPM	4.09	2230	6.17	7	16.3	no odour, light brown, low turbidity		
14:30	0.8	2.175		3.24	2720	6.08	15	16.4			
14:33	1.1			2.25	2730	6.02	22	16.3			
14:36	1.4			1.66	2770	6.00	23	16.3			
14:39	1.8			1.29	2880	5.98	20	16.3			
14:42	2.1			0.97	2970	5.96	19	16.3			
14:45	2.1			0.78	3060	5.94	17	16.3	mod turbidity		
Stable & Sampled											
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments			
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)		x 60 mL Ferrous		x 60 mL metals (HNO <sub>3</sub> )		Bore volume calculation, bore condition, fate of tubing, redox correction etc.			
1 metals		3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )		1 x 100 mL Amber		1 x 250 mL Plastic					
60mL		1 x 125 Sulfiter		1 x 60 Nitrate							
		1 x 250 Sulfiter				(10)					
Approval and Distribution											
Fieldwork Staff Signature: <u>BR</u>		Date: <u>11/7/17</u>		Checker Name and Signature: _____				Date: _____			
Project Manager Signature: _____		Date: _____		Distribution: Project Central File							



**FQM - Groundwater Sampling and Purging Record**

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Aveyll Coyne		Bore ID: GW 29			
Client: EPA		Project Location:		Fieldwork Staff: JM BP/BH		Sample Date: 12/7/17			
<b>General Bore Information</b>				<b>Parameter Info</b>		<b>Decontamination</b>			
Date of GW Level: 10/7/17		Bore Radius (mm): 50		Chem Kit Serial No.: 907MNV		<input checked="" type="checkbox"/> Decontaminated			
Depth to GW (m-pvc): 1.128		Screen Interval (m): 1		Chem Kit Model: D		<input type="checkbox"/> Dedicated			
Bore Depth (m-pvc): 3.40		Casing Radius (mm):		Corrected Redox: Y / (N)		<input checked="" type="checkbox"/> Disposable			
Depth to Product (m-pvc): 1		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)			
Product Thickness (m): 1		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Other (specify)			
		Key Type (if applicable): Hex		<input checked="" type="checkbox"/> Retrieved					
Calculated bore volume (L): 10		Includes/ excludes bore annulus (circle)		# purge volumes removed: 3		Total purged volume (L): 30			
<b>Water Quality Parameters</b>									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
8:07	0.05	1.460	CPM 2	1.49	5520	6.76	-47	10.0	Strong H <sub>2</sub> S odour
8:10	0.9	1.510	CPM 1	0.92	9690	6.60	-88	12.9	grey, mod turb.
8:13	1.2	1.450	"	1.04	9580	6.65	-94	13.6	
8:16	1.5	"	"	0.81	9000	6.66	-95	13.6	
8:19	1.8	"	"	0.70	8080	6.66	-92	13.4	
8:22	2.1	"	"	0.56	6790	6.63	-87	13.5	
8:25	2.5	"	CPM 1 1/2 (30/15)	0.53	5730	6.58	-83	13.8	
8:28	3.0	1.470	CPM 1	0.48	5190	6.55	-81	14.1	
8:31	3.3	1.450		0.45	4510	6.53	-78	13.9	
8:34	3.6			0.40	4430	6.53	-77	13.9	
8:37	3.9			0.37	4150	6.52	-76	13.8	
8:40	4.2			0.34	4040	6.51	-75	13.9	
8:43	4.5			0.33	3980	6.51	-75	13.9	
<b>Acceptable Parameter Range:</b>				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
<b>Analytes Sampled for:</b>		<b>Bottles Collected</b>				<b>QA/QC Information</b>		<b>Field Comments</b>	
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2	x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc. EC slightly variable - stabilised after 8:33 (36 mins)	
1 metals		3	x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1	x 100 mL Amber	1	x 250 mL Plastic		
60 mL		1	125 Sulfide	1	60 nitrate				
		1	250 Sulfide						
<b>Approval and Distribution</b>									
Fieldwork Staff Signature: [Signature]		Date: 12/7/17		Checker Name and Signature: _____		Date: _____			
Project Manager Signature: _____		Date: _____		Distribution: Project Central File					



FQM - Groundwater Sampling and Purging Record

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: GW25			
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 12/07/17			
<b>General Bore Information</b>				<b>Parameter Info.</b>		<b>Decontamination</b>			
Date of GW Level: 12/07/17		Bore Radius (mm): 50mm		Chem Kit Serial No.: 90FUMW		<input checked="" type="checkbox"/> Decontaminated			
Depth to GW (m-pvc): 2.965		Screen Interval (m):		Chem Kit Model:		<input checked="" type="checkbox"/> Dedicated			
Bore Depth (m-pvc):		Casing Radius (mm):		Corrected Redox: Y / (N)		<input checked="" type="checkbox"/> Disposable			
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)			
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input checked="" type="checkbox"/> Other (specify) SUBMERGIBLE			
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):			
<b>Water Quality Parameters</b>									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
15:03	0.3	2.974	4003	1.95	2.34	7.02	-95	16.4°C	pale brown, low turbidity, no odour or smell
15:06	1.2	2.976	" "	0.50	2.43	7.07	-101	18.2	
15:09	2.1	2.978	" "	0.23	2.49	7.10	-108	19.19	
15:12	3.0	2.973	" "	0.15	2.50	7.11	-110	19.10°C	
15:15	3.9	2.973	" "	0.14	2.51	7.11	-111	19.20°C	
15:18	4.8	2.973	" "	0.13	2.50	7.10	-111	19.10°C	
				SAMPLED					
<b>Acceptable Parameter Range:</b>				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
<b>Analytes Sampled for:</b>		<b>Bottles Collected</b>				<b>QA/QC Information</b>		<b>Field Comments</b>	
Field Filtered:	Unfiltered:	3 x 40 mL Vial (HCl)		2 x 60 mL Ferrous		2 x 60 mL metals (HNO <sub>3</sub> )		Bore volume calculation, bore condition, fate of tubing, redox correction etc.	
1 x metals		1 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )		1 x 100 mL Amber		x 250 mL Plastic			
		1 x purple		1 x sulphide		1 x 500 mL plastic			
<b>Approval and Distribution</b>									
Fieldwork Staff Signature		Date: 12/07/17		Checker Name and Signature		Date			
Project Manager Signature		Date		Distribution: Project Central File					



# FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: Colw 26					
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 17/07/17					
<b>General Bore Information</b>				<b>Parameter Info.</b>		<b>Decontamination</b>					
Date of GW Level: 17/07/17	Bore Radius (mm):	Chem Kit Serial No.: FLN90VR	<input checked="" type="checkbox"/> Decontaminated		<b>Sampling Method</b>		<b>Hydrasleeve info.</b>				
Depth to GW (m-pvc): 2.448	Screen Interval (m):	Chem Kit Model:	<input type="checkbox"/> Dedicated		Low Flow Pump rate: CPM2		Monitoring sequence followed (number in order):				
Bore Depth (m-pvc):	Casing Radius (mm):	Corrected Redox: Y / N	<input checked="" type="checkbox"/> Disposable		Intake depth:		Hydrasleeve Type:				
Depth to Product (m-pvc):	Cover Type (gatic/stick up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve		Sampling Depth (m-pvc): Gauging				
Product Thickness (m):	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole			<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra		Hydrasleeve Install time: Hydrasleeve in				
	Key Type (if applicable):	<input checked="" type="checkbox"/> Retrieved			<input type="checkbox"/> Other (specify)		Sampling Start Time: Hydrasleeve out				
Calculated bore volume (L):	Includes/ excludes bore annulus (circle)	# purge volumes removed:			Total purged volume (L):		Parameters				
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
9:49	0.60	1.48	CPM2	5.62	1332	6.15	107	15.40	moderate low brown turbidity, no odour		
9:52	1.20	1.49	CPM2	3.25	1381	6.15	101	16.10	as above		
9:55	1.80	1.49	CPM2	2.41	1388	6.19	95	16.40	" "		
9:59	2.40	1.49	CPM2	2.01	1439	6.27	93	16.60	" "		
10:02	3.00	1.49	CPM2	1.80	1467	6.33	90	16.70	" "		
10:05	3.60	1.50	CPM2	1.52	1482	6.35	88	16.70	" "		
10:08	4.20	1.49	CPM2	1.47	1486	6.35	88	16.70	" "		
		Parameters		Stable	Well	Sampled					
<b>Acceptable Parameter Range:</b>				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
<b>Analytes Sampled for:</b>			<b>Bottles Collected</b>				<b>QA/QC Information</b>		<b>Field Comments</b>		
Field Filtered: 1	Unfiltered: 9	3 x 40 mL Vial (HCl)		1 x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.			
		3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )		1 x 100 mL Amber	1 x 250 mL Plastic	orange 1 purple 1 yellow					
<b>Approval and Distribution</b>											
Fieldwork Staff Signature: <i>[Signature]</i>			Date: 17/07/17			Checker Name and Signature: _____			Date: _____		
Project Manager Signature: _____			Date: _____			Distribution: Project Central File					



**FQM - Groundwater Sampling and Purging Record**



Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: GW27	
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 12/7/17	
<b>General Bore Information</b>				<b>Parameter Info.</b>		<b>Decontamination</b>	
Date of GW Level: 10/7/17		Bore Radius (mm): 50		Chem Kit Serial No.: 90FLMV		<input checked="" type="checkbox"/> Decontaminated	
Depth to GW (m-pvc): 2.70		Screen Interval (m):		Chem Kit Model: 0		<input type="checkbox"/> Dedicated	
Bore Depth (m-pvc): 4.66		Casing Radius (mm):		Corrected Redox: Y / N		<input checked="" type="checkbox"/> Disposable	
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)	
Product Thickness (m): 1.965		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Baile	
Calculated bore volume (L): 9.8		Key Type (if applicable): Hex		<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Peristaltic Pump	
Includes/ excludes bore annulus (circle)		# purge volumes removed: 3		Total purged volume (L): 29.5L		<input type="checkbox"/> Waterra	
						<input type="checkbox"/> Other (specify)	

Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
15:34	0.5	2.710	CPM2	2.70	289	7.11	-64	17.2	NO odour, brown, low turb.
15:37	1.1	2.710		1.79	254	6.99	-65	17.6	"
15:40	1.7			1.45	275	6.91	-68	17.8	"
15:43	2.3			1.11	259	6.64	-71	17.8	mod turb
15:46	2.9			1.21	254	6.58	-71	17.9	
15:49	3.5			1.04	250	6.50	-75	17.9	
15:52	4.1			0.92	250	6.48	-75	18.0	
15:55	4.6			0.85	249	6.47	-77	18.0	
Stable & Sampled									

<b>Acceptable Parameter Range:</b>	± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
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Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments	
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.		
Metals		3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	1 x 250 mL Plastic					
60mL		1 125 sulfide	2 PFAS 60						
		1 250 sulfide	1 60 Nitrites	(12)					

<b>Approval and Distribution</b>			
Fieldwork Staff Signature:		Date: 12/7/17	
Project Manager Signature: _____		Date: _____	
Checker Name and Signature: _____		Date: _____	
Distribution: Project Central File			



**FQM - Groundwater Sampling and Purging Record**



<b>Project Name:</b> Fishermen's Bend		<b>Project Number:</b> 60537182		<b>PM Name:</b> Averyll Coyne		<b>Bore ID:</b> GW28			
<b>Client:</b> EPA		<b>Project Location:</b>		<b>Fieldwork Staff:</b> JM/BP/BH		<b>Sample Date:</b> 11/7/17			
<b>General Bore Information</b>				<b>Parameter Info.</b>		<b>Decontamination</b>			
Date of GW Level: 10/7/17		Bore Radius (mm): 50		Chem Kit Serial No.: 90FLMV		<input checked="" type="checkbox"/> Decontaminated			
Depth to GW (m-pvc): 1.240		Screen Interval (m): 1		Chem Kit Model: 90FLMVD		<input type="checkbox"/> Dedicated			
Bore Depth (m-pvc): 2.31		Casing Radius (mm): 1		<b>Corrected Redox:</b> Y / (N)		<input checked="" type="checkbox"/> Disposable			
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)			
Product Thickness (m): 1.1		Bore Locked (YES/NO):		<b>Parameter method:</b> <input type="checkbox"/> Downhole		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra			
		Key Type (if applicable): hex		<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Other (specify)			
Calculated bore volume (L): 5.5		Includes/ excludes bore annulus (circle)		# purge volumes removed: 3		Total purged volume (L): 18.5			
<b>Water Quality Parameters</b>									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
13.22	0.5	1.365	CPM2	4.16	3500	7.71	-138	18.8	H <sub>2</sub> S sulfide strong chem odour, black, moderate turbidity
13.25	1.1	1.375	"	2.15	3480	7.63	-153	18.3	
13.28	1.7	1.375	"	1.74	3450	7.58	-155	18.2	
13.31	2.3			1.42	3380	7.55	-154	18.0	
13.34	2.9			1.13	3280	7.52	-153	17.9	
13.37	3.5			0.94	3060	7.46	-155	17.9	
13.40	4.1			0.71	2900	7.43	-159	17.9	H <sub>2</sub> S sulfide
13.43	4.7			0.61	2770	7.41	-163	17.8	black shoney
Stable & Sampled									
<b>Acceptable Parameter Range:</b>				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
<b>Analytes Sampled for:</b>		<b>Bottles Collected</b>				<b>QA/QC Information</b>		<b>Field Comments</b>	
<b>Field Filtered:</b>	<b>Unfiltered:</b>	x 40 mL Vial (HCl)	x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )	nitrate on pump taken after decon		Bore volume calculation, bore condition, fate of tubing, redox correction etc.		
1 metals		3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	1 x 500 x 200 mL Plastic					
		1 x 125 sulfide	1 x 60 nitrate	1 x 250 sulfide					
<b>Approval and Distribution</b>									
Fieldwork Staff Signature		Date		Checker Name and Signature		Date			
Project Manager Signature		Date		Distribution: Project Central File					



# FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <i>AW19</i>			
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: <i>11/07/17</i>			
<b>General Bore Information</b>				<b>Parameter Info.</b>		<b>Decolourization</b>			
Date of GW Level: <i>11/07/17</i>		Bore Radius (mm): <i>50 mm</i>		Chem Kit Serial No.: <i>20614V</i>		<input checked="" type="checkbox"/> Decontaminated			
Depth to GW (m-pvc): <i>2.798</i>		Screen Interval (m): <i>2</i>		Chem Kit Model:		<input checked="" type="checkbox"/> Dedicated			
Bore Depth (m-pvc):		Casing Radius (mm):		Corrected Redox: <i>Y / N</i>		<input checked="" type="checkbox"/> Disposable			
Depth to Product (m-pvc):		Cover Type (gate/dick up):		(The correction to apply is probe dependent)		<input checked="" type="checkbox"/> Other (specify)			
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input checked="" type="checkbox"/> Retrieved			
Key Type (if applicable): <i>Amber</i>									
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):			
Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
<i>15:31</i>	<i>0.3</i>	<i>2.850</i>	<i>4M3</i>	<i>3.22</i>	<i>909</i>	<i>7.45</i>	<i>3mV</i>	<i>15.2°C</i>	<i>pale brown, low turbidity, no odour or smell.</i>
<i>15:34</i>	<i>1.2</i>	<i>2.867</i>	<i>" "</i>	<i>2.14</i>	<i>1271</i>	<i>7.36</i>	<i>10</i>	<i>16.1°C</i>	
<i>15:37</i>	<i>2.1</i>	<i>2.870</i>	<i>" 4</i>	<i>1.67</i>	<i>1261</i>	<i>7.33</i>	<i>13</i>	<i>16.8°C</i>	
<i>15:40</i>	<i>3.0</i>	<i>2.884</i>	<i>" "</i>	<i>1.29</i>	<i>1270</i>	<i>7.35</i>	<i>4</i>	<i>17.1</i>	
<i>15:43</i>	<i>3.9</i>	<i>2.874</i>	<i>" "</i>	<i>0.93</i>	<i>1280</i>	<i>7.34</i>	<i>-13</i>	<i>17.1</i>	
<i>15:46</i>	<i>4.8</i>	<i>2.887</i>	<i>" "</i>	<i>0.86</i>	<i>1286</i>	<i>7.33</i>	<i>-32</i>	<i>17.2</i>	
<i>15:49</i>	<i>5.7</i>	<i>2.875</i>	<i>" "</i>	<i>0.79</i>	<i>1288</i>	<i>7.33</i>	<i>-42</i>	<i>17.2</i>	
<i>15:52</i>	<i>6.6</i>	<i>2.885</i>	<i>" "</i>	<i>0.75</i>	<i>1289</i>	<i>7.32</i>	<i>-49</i>	<i>17.2</i>	
			<i>SAMPLED</i>						
<b>Acceptable Parameter Range:</b>				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
<b>Analytes Sampled for:</b>		<b>Bottles Collected</b>				<b>QA/QC Information</b>		<b>Field Comments</b>	
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )				Bore volume calculation, bore condition, fate of tubing, redox correction etc.	
<i>1 x metals</i>		3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	x 250 mL Plastic					
		<i>1 x pole</i>	<i>1 x sulphate</i>	<i>1 x 500 plastic</i>					
		<i>1 x sulphate</i>							
<b>Approval and Distribution</b>									
Fieldwork Staff Signature: <i>[Signature]</i>		Date: <i>11/07/17</i>		Checker Name and Signature: _____		Date: _____			
Project Manager Signature: _____		Date: _____		Distribution: Project Central File					



FQM - Groundwater Sampling and Purging Record

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: GW30						
Client: EPA		Project Location:		Fieldwork Staff: JM BP/BH		Sample Date: 14/7/17						
<b>General Bore Information</b>				<b>Parameter Info.</b>		<b>Decontamination</b>						
Date of GW Level: 10/7/17		Bore Radius (mm): 50		Chem Kit Serial No.: 90FLMV		<input checked="" type="checkbox"/> Decontaminated						
Depth to GW (m-pvc):		Screen Interval (m):		Chem Kit Model: D		<input type="checkbox"/> Dedicated						
Bore Depth (m-pvc):		Casing Radius (mm):		Corrected Redox: Y / (N)		<input checked="" type="checkbox"/> Disposable						
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)						
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra						
Calculated bore volume (L):		Key Type (if applicable): hex		<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Other (specify)						
Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):								
<b>Water Quality Parameters</b>												
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity			
14.40	0.5	1.590	CPM2	3.20	555	5.76	98	16.8	Slight HC, orange, low turb			
14.43	0.8	1.600	CPM1	1.12	549	5.54	125	16.9				
14.46	1.1	1.600		0.84	553	5.50	132	16.9				
14.49	1.4			0.77	555	5.52	128	16.9				
14.52	1.7			0.60	550	5.56	120	16.9				
14.55	2.0			0.57	545	5.59	113	16.8				
14.57	2.3			0.48	530	5.59	108	16.6	slightly od ↓ low - no turb			
Stable & sampled												
<b>Acceptable Parameter Range:</b>				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)			
<b>Analytes Sampled for:</b>		<b>Bottles Collected</b>				<b>QA/QC Information</b>		<b>Field Comments</b>				
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2	x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.  Used PFAS tubing - ran out of normal				
60mL metals		3	x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1	x 100 mL Amber						1	x 250 mL Plastic
		1	125 sulfite	1	60 nitrate							
		1	250 sulfide									
<b>Approval and Distribution</b>												
Fieldwork Staff Signature:			Date: 14/7/17		Checker Name and Signature: _____			Date: _____				
Project Manager Signature: _____			Date: _____		Distribution: Project Central File							



# FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: GW 31					
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 10/7/17					
General Bore Information				Parameter Info.		Decontamination					
Date of GW Level: 10/7/17		Bore Radius (mm): 50		Chem Kit Serial No.: 90FLMND		<input checked="" type="checkbox"/> Decontaminated					
Depth to GW (m-pvc): 1.450		Screen Interval (m): PVC		Chem Kit Model:		<input type="checkbox"/> Dedicated					
Bore Depth (m-pvc): 3.940		Casing Radius (mm):		Corrected Redox: Y / N		<input checked="" type="checkbox"/> Disposable					
Depth to Product (m-pvc): -		Cover Type (gatic/stick-up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)					
Product Thickness (m): -		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve					
Calculated bore volume (L): 12.5		Key Type (if applicable): Hex		<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra					
Includes/ excludes bore annulus (circle)		# purge volumes removed: 3		Total purged volume (L): 37.5 L		<input type="checkbox"/> Other (specify)					
Well Development or Well Sampling Event? (circle)											
Monitoring sequence followed (number in order):											
Gauging											
Hydrasleeve in											
Hydrasleeve out											
Parameters											
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
14:08	0.5	1.490	CPM2	4.37	7560	6.54	-7	15.7	No odour, colourless - slightly brown, no turb. ↓ brown, low turb ↓ ↓ ↓		
14:14	0.8	1.575	CPM1	2.94	7510	6.59	-25	16.0			
14:17	1.1	1.580	"	2.42	7480	6.59	-33	16.1			
14:20	1.4	1.575	"	2.06	7450	6.60	-37	16.1			
14:23	1.7	1.60	CPM2	1.71	7430	6.60	-40	16.2			
14:26	2.0	1.580	CPM1	1.69	7410	6.60	-43	16.3			
14:29	2.3	1.560	"	1.55	7390	6.61	-45	16.4			
Acceptable Parameter Range:			± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)			
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments			
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2	x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.			
1 60mL PL Metals		3	x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1	x 100 mL Amber					1	x 250 mL Plastic
		2	x 60 mL PFAS vial	1	60mL SHF						
		1	x 250 sulphite	1	100mL sulfite (NaOH pres)						
Approval and Distribution											
Fieldwork Staff Signature:		Date: 10/7/17		Checker Name and Signature		Date					
Project Manager Signature		Date		Distribution: Project Central File							



# FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend				Project Number: 60537182				Bore ID: <u>CW32</u>					
Client: EPA				PM Name: Averyll Coyne				Sample Date: <u>17/07/17</u>					
Project Location:				Fieldwork Staff: JM BP BH				Well Development or Well Sampling Event? (circle)					
General Bore Information				Parameter Info.				Decontamination					
Date of GW Level: <u>17/07/17</u>		Bore Radius (mm): <u>35mm</u>		Chem Kit Serial No.: <u>FUM90 R</u>		<input type="checkbox"/> Decontaminated <input checked="" type="checkbox"/> Dedicated <input checked="" type="checkbox"/> Disposable <input type="checkbox"/> Other (specify)		<input type="checkbox"/> Low Flow Pump rate: Intake depth:		Hydrasleeve info. Hydrasleeve Size: Hydrasleeve Type:		Monitoring sequence followed (number in order):	
Depth to GW (m-pvc): <u>2.155</u>		Screen Interval (m):		Chem Kit Model:		<input checked="" type="checkbox"/> Bailer <input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Other (specify)		<input type="checkbox"/> Hydrasleeve <input type="checkbox"/> Waterra <input type="checkbox"/> Other (specify)		Sampling Depth (m-pvc):		Gauging	
Bore Depth (m-pvc): <u>8.74</u>		Casing Radius (mm):		Corrected Redox: Y / N		<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Hydrasleeve <input type="checkbox"/> Waterra		Hydrasleeve Install time:		Hydrasleeve in	
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Hydrasleeve <input type="checkbox"/> Waterra		Sampling Start Time:		Hydrasleeve out	
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Hydrasleeve <input type="checkbox"/> Waterra		Sampling Start Time:		Hydrasleeve out	
Calculated bore volume (L):		Key Type (if applicable):		<input type="checkbox"/> Retrieved								Parameters	
Includes/ excludes bore annulus (circle)				# purge volumes removed:				Total purged volume (L):					
Water Quality Parameters													
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity				
<u>13.23</u>	<u>100</u>	<u>2.16</u>	<u>-</u>	<u>1.16</u>	<u>4390</u>	<u>6.89</u>	<u>-274</u>	<u>17.80</u>	<u>clear, HL odour</u>				
		<u>35mm</u>	<u>to small for pump grab sample taken</u>										
Acceptable Parameter Range: ± 10% DO, ± 3% E.C., ± 0.05 pH, ± 10 mV Redox, ± 0.2 °C Temp, ± 10% turbidity (if using a turbidity meter)													
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments					
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	<u>2</u>	x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.					
<u>1</u>	<u>9</u>	<u>3</u> x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	<u>1</u> x 100 mL Amber	<u>1</u>	x 250 mL Plastic	<u>green</u>							
			<u>1</u> yellow	<u>1</u>	<u>orange</u>	<u>purple</u>							
Approval and Distribution													
Fieldwork Staff Signature: <u>[Signature]</u>		Date: <u>17/07/17</u>		Checker Name and Signature: _____				Date: _____					
Project Manager Signature: _____		Date: _____		Distribution: Project Central File									



# FQM - Groundwater Sampling and Purging Record

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: G1W33			
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 11/7/17			
General Bore Information				Parameter Info.		Decontamination			
Date of GW Level: 10/7/17	Bore Radius (mm): 50	Chem Kit Serial No.: FLMV D0	<input checked="" type="checkbox"/> Decontaminated		<input checked="" type="checkbox"/> Low Flow Pump rate: CPM 2		Well Development or Well Sampling Event? (circle)		
Depth to GW (m-pvc): 2.12	Screen Interval (m):	Chem Kit Model: 90FLMV	<input type="checkbox"/> Dedicated		Intake depth: 0.5 L/H				
Bore Depth (m-pvc): 4.23	Casing Radius (mm):	Corrected Redox: Y / (N)	<input checked="" type="checkbox"/> Disposable		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve		Hydrasleeve Size:		
Depth to Product (m-pvc):	Cover Type (gatic/stick up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra		Hydrasleeve Type:		
Product Thickness (m):	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole	<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Other (specify)		Sampling Depth (m-pvc):		
2.1 x 10.5	Key Type (if applicable): hex						Hydrasleeve Install time:		
Calculated bore volume (L): 10.5	Includes/ excludes bore annulus (circle)	# purge volumes removed: 2			Total purged volume (L): 31.5		Monitoring sequence followed (number in order):		
Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
9.38	0.5	2.35	CPM 2	1.72	3610	6.23	-37	18.0	no odour, Grey, low turb, ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓ ↓
9.41	0.8	2.37	"	1.30	3550	6.21	-40	18.4	
9.44	1.4	2.36	"	1.11	3430	6.19	-41	18.8	
9.47	2.0	2.37	"	0.86	3400	6.18	-43	18.9	
9.50	2.6	"	"	0.72	3310	6.16	-46	19.1	
9.53	3.2	"	"	0.56	3250	6.15	-48	19.1	
9.56	3.5	"	"	0.54	3190	6.16	-53	19.1	
				Stable & sampled					
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
Analytes Sampled for:		Bottles Collected			QA/QC Information			Field Comments	
Field Filtered: 1x metals	Unfiltered:	3 x 40 mL Vial (HCl)	2 x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )				Bore volume calculation, bore condition, fate of tubing, redox correction etc. Pump/air tubing issues > 15 mins to fix	
		1 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	1 x 250 mL Plastic					
		1 sulfate 250	1 x 60 ammonia (sulfur)	(10)					
Approval and Distribution									
Fieldwork Staff Signature:		Date: 11/7/17		Checker Name and Signature:			Date:		
Project Manager Signature:		Date:		Distribution: Project Central File					



# FQM - Groundwater Sampling and Purging Record

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: GW34	
Client: EPA		Project Location:		Fieldwork Staff: JM/BP/BH		Sample Date: 10/17/17	
General Bore Information				Parameter Info		Decontamination	
Date of GW Level: 10/17/17		Bore Radius (mm): 50		Chem Kit Serial No.: 90FLMVD		<input checked="" type="checkbox"/> Decontaminated	
Depth to GW (m-pvc): 1.570		Screen Interval (m): 1		Chem Kit Model:		<input type="checkbox"/> Dedicated	
Bore Depth (m-pvc): 3.910		Casing Radius (mm): 1		Corrected Redox: Y / (N)		<input checked="" type="checkbox"/> Disposable	
Depth to Product (m-pvc): 1		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)	
Product Thickness (m): 2.346 x 5		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra	
Calculated bore volume (L): 11.7		Key Type (if applicable): Hex		<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Other (specify)	
Includes/ excludes bore annulus (circle)				# purge volumes removed: 3		Total purged volume (L): 3SL	

Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
15:20	0.5	1.600	CPM 2	2.09	3960	7.19	-260.1	16.9	Sulfuric Odour, strong, grey, low turb
15:23	0.8	1.600	"	1.34	3820	7.18	-267.0	17.0	
15:26	1.1	1.620	"	1.03	3780	7.18	-276.1	17.1	
15:29	1.4	1.640	"	0.80	3820	7.16	-287.1	17.2	
15:32	1.7	1.640	"	0.50	3860	7.15	-297.1	17.2	
15:35	2.0	1.640	"	0.39	3870	7.15	-201.1	17.2	
15:38	2.3	1.650	"	0.32	3870	7.14	-305.1	17.4	
15:41	2.6	1.640	"	0.29	3860	7.13	-309.5	17.4	
<del>15:44</del>	<del>2.9</del>		Stable & sampled						

Acceptable Parameter Range: ± 10% DO, ± 3% E.C., ± 0.05 pH, ± 10 mV Redox, ± 0.2 °C Temp, ± 10% turbidity (if using a turbidity meter)

Analytes Sampled for:		Bottles Collected			QA/QC Information		Field Comments	
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	x 60 mL metals (HNO <sub>3</sub> )	extra for lab QC.		Bore volume calculation, bore condition, fate of tubing, redox correction etc.	
1 GOME metals		3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	2 x 100 mL Amber	1 x 250 mL Plastic				
		1 x 250 sulfate	1 x 60 mL sulfuric acid pres					
		2 x PFA5 up	1 x 100 mL sulfate					

Approval and Distribution			
Fieldwork Staff Signature: <i>[Signature]</i>		Date: 10/17/17	
Project Manager Signature: _____		Date: _____	
Checker Name and Signature: _____		Date: _____	
Distribution: Project Central File			



**FQM - Groundwater Sampling and Purging Record**

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Avenyll Coyne		Bore ID: G4W35					
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 12/7/17					
<b>General Bore Information</b>				<b>Parameter Info.</b>		<b>Decontamination</b>					
Date of GW Level: 10/7/17	Bore Radius (mm): 50	Chem Kit Serial No.: 90FLMV	<input checked="" type="checkbox"/> Decontaminated		<input checked="" type="checkbox"/> Low Flow Pump rate: CPM1		<b>Hydrasleeve info.</b> Monitoring sequence followed (number in order): Gauging Hydrasleeve in Hydrasleeve out Parameters				
Depth to GW (m-pvc): 2.240	Screen Interval (m): 1	Chem Kit Model: D	<input type="checkbox"/> Dedicated		Intake depth: 0.56ch						
Bore Depth (m-pvc): 3.72	Casing Radius (mm): 1	Corrected Redox: Y / (N)	<input checked="" type="checkbox"/> Disposable		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve						
Depth to Product (m-pvc): 1	Cover Type (gatic/stick-up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra						
Product Thickness (m): 1.5	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole <input checked="" type="checkbox"/> Retrieved			<input type="checkbox"/> Other (specify)		Hydrasleeve Size:				
Calculated bore volume (L): 7.5	Key Type (if applicable): hex	Includes/ excludes bore annulus (circle)		# purge volumes removed: 3	Total purged volume (L): 22.5		Hydrasleeve Type:				
<b>Water Quality Parameters</b>											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
9.24	0.5	2.26	CPM2	3.64	36700	4.35	134	15.6	no odour, greyish brown, low turb light brown slight H2S odour		
9.27	0.9	2.40	CPM1	1.08	4080	4.23	142	17.3			
9.30	1.2	2.41	"	0.58	4150	4.23	126	17.2			
9.33	1.5	2.42	"	0.53	4170	4.25	115	17.0			
9.36	1.8	2.42	"	0.32	4190	4.29	103	16.9			
9.39	2.1	2.42	"	0.27	4200	4.34	91	16.8			
9.42	2.4	2.42	"	0.16	4210	4.41	78	16.7			
9.45	2.7	"	"	0.14	4200	4.46	71	16.5			
9.48	3.0	"	"	0.16	4200	4.53	64	16.6			
9.51	3.3	"	"	0.10	4160	4.56	54	16.8			
9.54	3.6	"	"	0.09	4130	4.60	49	17.0			
Stable & Sampled											
<b>Acceptable Parameter Range:</b>				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C		± 10% turbidity (if using a turbidity meter)	
<b>Analytes Sampled for:</b>		<b>Bottles Collected</b>				<b>QA/QC Information</b>		<b>Field Comments</b>			
Field Filtered: i metals 60	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2	x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.			
		3	x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1	x 100 mL Amber					1	x 250 mL Plastic
		1	125 nitrides	1	60 nitrates						
		1	250 SDI/ite								
<b>Approval and Distribution</b>											
Fieldwork Staff Signature: <u>BRE</u>		Date: <u>12/7/17</u>		Checker Name and Signature		Date					
Project Manager Signature		Date		Distribution: Project Central File							



# FQM - Groundwater Sampling and Purging Record

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: GVV36					
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 11/7/17					
<b>General Bore Information</b>				<b>Parameter Info.</b>		<b>Decontamination</b>					
Date of GW Level: 10/7/17	Bore Radius (mm): 50	Chem Kit Serial No.: FLMV90	<input checked="" type="checkbox"/> Decontaminated		<input checked="" type="checkbox"/> Low Flow Pump rate: CPM1		Monitoring sequence followed (number in order):				
Depth to GW (m-pvc): 2.50	Screen Interval (m):	Chem Kit Model: 90FLMVD	<input type="checkbox"/> Dedicated		Intake depth: bottom						
Bore Depth (m-pvc): 3.50	Casing Radius (mm):	Corrected Redox: Y / (N)	<input checked="" type="checkbox"/> Disposable		<input type="checkbox"/> Bailer	<input type="checkbox"/> Hydrasleeve	Hydrasleeve Size:				
Depth to Product (m-pvc):	Cover Type (gatic/stick up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Peristaltic Pump	<input type="checkbox"/> Waterra	Hydrasleeve Type:				
Product Thickness (m):	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole	<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Other (specify)		Sampling Depth (m-pvc):				
Calculated bore volume (L): 5	Key Type (if applicable): hex						Hydrasleeve Install time:				
Includes/ excludes bore annulus (circle)	# purge volumes removed: 3	Total purged volume (L): 15		Well Development or Well Sampling Event? (circle)							
<b>Water Quality Parameters</b>											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
10.41	0.5	2.560	CPM1	2.61	965	6.75	-42	15.8	no odour Light brown, low turb. no shear		
10.44	0.8	2.600	"	1.62	1370	6.67	-37	16.0			
10.47	1.1	2.620	"	1.19	1341	6.60	-29	16.0			
10.50	1.4	2.640	"	0.93	1309	6.47	-18	16.0			
10.53	1.7	2.660	"	0.61	1292	6.36	-8	16.0			
10.56	2.0	2.670	"	0.48	1273	6.27	0	16.0			
10.59	2.3	2.680	"	0.35	1270	6.23	5	16.0			
11.02	2.6	2.680	"	0.26	1259	6.19	8	16.0			
11.05	2.9	2.680	"	0.19	1256	6.18	8	16.0	no odour light yellowish br, low turb, no shear		
Stable & sampled											
<b>Acceptable Parameter Range:</b>				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
<b>Analytes Sampled for:</b>		<b>Bottles Collected</b>				<b>QA/QC Information</b>		<b>Field Comments</b>			
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2	x 60 mL metals (HNO <sub>3</sub> )	/		Bore volume calculation, bore condition, fate of tubing, redox correction etc.  Dour recovery, WL not stabilised @ CPM1  Piece of tubing down well - Erik had to come and use root clearing tool to remove @ 10.35 am.			
1 metals		3	x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1	x 100 mL Amber					1	x 250 mL Plastic
60mL		1	x 250 Sulfate	1	x 60 Sulfate					1	x 125 Sulfate
<b>Approval and Distribution</b>											
Fieldwork Staff Signature: <u>[Signature]</u>		Date: 11/7/17		Checker Name and Signature: _____		Date: _____					
Project Manager Signature: _____		Date: _____		Distribution: Project Central File							







# FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <u>GW38</u>					
Client: EPA		Project Location:		Fieldwork Staff: JMB/BH		Sample Date: <u>11/7/17</u>					
<b>General Bore Information</b>				<b>Parameter Info.</b>		<b>Decontamination</b>					
Date of GW Level: <u>10/7/17</u>		Bore Radius (mm): <u>50</u>		Chem Kit Serial No.: <u>90FLMVD</u>		<input checked="" type="checkbox"/> Decontaminated					
Depth to GW (m-pvc): <u>3.478</u>		Screen Interval (m): <u>1</u>		Chem Kit Model: <u>90FLMV</u>		<input type="checkbox"/> Dedicated					
Bore Depth (m-pvc): <u>6.64</u>		Casing Radius (mm): <u>1</u>		Corrected Redox: <u>Y / (N)</u>		<input checked="" type="checkbox"/> Disposable					
Depth to Product (m-pvc): <u>1</u>		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)					
Product Thickness (m): <u>3.2x5</u>		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra					
		Key Type (if applicable): <u>hex</u>		<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Other (specify)					
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):					
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
8:22	0.5	3.558	CPM2	<del>1.37</del>	<del>2330</del>	<del>7.375</del>	178	14.9	no odour, slight orangebrown, low turb		
8:25	0.8	3.650	CPM1	1.28	6110	7.63	158	15.8			
8:28	1.1	3.660	"	0.78	6090	7.69	139	16.7			
8:31	1.4	3.660	"	0.63	6000	7.71	132	16.9			
8:34	1.7	"	"	0.50	5990	7.74	120	17.2			
8:37	2.0	"	"	0.91	5998	7.74	118	17.2			
8:40	2.3	"	"	0.33	5980	7.74	111	17.2			
Stable & Sampled											
<b>Acceptable Parameter Range:</b>				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
<b>Analytes Sampled for:</b>		<b>Bottles Collected</b>				<b>QA/QC Information</b>		<b>Field Comments</b>			
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2	x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.			
<u>Metals 60mL</u>		3	x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1	x 100 mL Amber					1	x 250 mL Plastic
		2	x PFAS 60mL	1	x 200mL Sulfite						
		1	x 125mL Sulfite	1	x 60mL Nitrite						(12)
<b>Approval and Distribution</b>											
Fieldwork Staff Signature: <u>[Signature]</u>		Date: <u>11/7/17</u>		Checker Name and Signature: _____		Date: _____					
Project Manager Signature: _____		Date: _____		Distribution: Project Central File							



**FQM - Groundwater Sampling and Purging Record**

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: GW39			
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 11/07/12			
General Bore Information				Parameter Info.		Decontamination			
Date of GW Level: 11/07/12		Bore Radius (mm):		Chem Kit Serial No.: 90FLMUR		<input checked="" type="checkbox"/> Decontaminated			
Depth to GW (m-pvc): 1.977		Screen Interval (m):		Chem Kit Model:		<input type="checkbox"/> Dedicated			
Bore Depth (m-pvc):		Casing Radius (mm):		Corrected Redox: Y / N		<input checked="" type="checkbox"/> Disposable			
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve			
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra			
		Key Type (if applicable):		<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Other (specify)			
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):			
Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
10:18	0	1.99		Pre	Purge				
10:21	0.6	2.03	CPM2	3.08	226	6.64	49	13.90	light brown, moderate turb, no odour
10:24	1.2	2.04	CPM2	1.74	223	6.36	43	14.80	as above
10:27	1.8	2.04	CPM2	1.43	222	6.51	41	15.10	" "
10:30	2.4	2.03	CPM2	1.31	224	6.49	40	15.20	" "
10:33	3.00	2.04	CPM2	1.18	225	6.48	39	15.30	
10:36	3.60	2.04	CPM2	1.25	225	6.48	36	15.30	
Parameters				Stable		Well		sampled	
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
Analytes Sampled for:		Bottles Collected			QA/QC Information		Field Comments		
Field Filtered: 1	Unfiltered: 9	x 40 mL Vial (HCl)	x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.		
		2 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	1 x 250 mL Plastic Gen					
			1 purple	1 yellow					
				1 orange					
Approval and Distribution									
Fieldwork Staff Signature: <i>[Signature]</i>		Date: 11/07/12		Checker Name and Signature: _____		Date: _____			
Project Manager Signature: _____		Date: _____		Distribution: Project Central File					



**FQM - Groundwater Sampling and Purging Record**

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: GW40					
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 11/07/17					
General Bore Information			Parameter Info		Decontamination		Sampling Method		Hydrasleeve Info		
Date of GW Level: 11/07/17	Bore Radius (mm):	Chem Kit Serial No.: FUM90UR	<input checked="" type="checkbox"/> Decontaminated		<input checked="" type="checkbox"/> Low Flow Pump rate: CPM		Hydrasleeve Size:		Monitoring sequence followed (number in order):		
Depth to GW (m-pvc): 1.954	Screen Interval (m):	Chem Kit Model:	<input type="checkbox"/> Dedicated		Intake depth:		Hydrasleeve Type:				
Bore Depth (m-pvc):	Casing Radius (mm):	Corrected Redox: Y / N	<input checked="" type="checkbox"/> Disposable		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve		Sampling Depth (m-pvc):		Gauging		
Depth to Product (m-pvc):	Cover Type (gatic/stick up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra		Hydrasleeve Install time:		Hydrasleeve in		
Product Thickness (m):	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole	<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Other (specify)		Sampling Start Time:		Hydrasleeve out		
	Key Type (if applicable):								Parameters		
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):					
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
9:07	0	1.99	Pre Purge						GRE		
9:10	0.6	2.00	CPM2	0.56	455	5.94	42	15.20	Grey brown Very turbid, no odor		
9:13	1.20	2.03	CPM2	0.26	441	5.89	76	15.70	as above		
9:16	1.50	2.02	CPM1	0.15	439	5.94	63	15.80	" "		
9:19	1.8	2.02	CPM1	0.12	437	6.05	54	15.70	moderate to high turbidity, no odor		
9:22	2.10	2.03	CPM1	0.15	435	6.14	48	15.90	as above		
9:25	2.40	2.04	CPM1	0.15	436	6.16	47	15.90	" "		
9:28	2.7	2.03	CPM1	0.13	436	6.18	44	15.90	" "		
		Parameters		Stable well sampled							
<b>Acceptable Parameter Range:</b>				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments			
Field Filtered: 1	Unfiltered: 9	3 x 40 mL Vial (HCl)	3 x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.				
		1 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	1 x 50 mL Plastic	open						
			1 orange	1 yellow	purple						
Approval and Distribution											
Fieldwork Staff Signature: <i>Michael Miller</i>		Date: 11/07/17		Checker Name and Signature			Date				
Project Manager Signature		Date		Distribution: Project Central File							



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**FQM - Groundwater Sampling and Purging Record**

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: Gw41			
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 14/07/17			
<b>General Bore Information</b>				<b>Parameter Info.</b>		<b>Decontamination</b>			
Date of GW Level: 14/07/17		Bore Radius (mm):		Chem Kit Serial No.: RM90		<input checked="" type="checkbox"/> Decontaminated			
Depth to GW (m-pvc): 1.775		Screen Interval (m):		Chem Kit Model:		<input type="checkbox"/> Dedicated			
Bore Depth (m-pvc):		Casing Radius (mm):		Corrected Redox: Y / N		<input checked="" type="checkbox"/> Disposable			
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)			
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra			
		Key Type (if applicable):		<input type="checkbox"/> Retrieved		<input type="checkbox"/> Other (specify)			
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):			
<b>Water Quality Parameters</b>									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
13:26	0.60	1.82	CPM2	1.25	2800	7.41	-36	16.10	Brown yellow, high turbidity, no odour
13:29	1.20	1.78	CPM2	0.74	1434	7.37	-37	16.40	as above
13:32	1.80	1.80	CPM2	0.50	854	7.26	-33	16.70	" "
13:35	2.40	1.79	CPM2	0.35	636	7.05	-25	16.70	" "
13:39	3.00	1.78	CPM2	0.30	527	6.90	-19	16.40	" "
13:41	3.60	1.79	CPM2	0.18	480	6.92	-15	16.40	" "
13:44	4.20	1.80	CPM2	0.17	476	6.91	-14	16.50	" "
13:47	4.80	1.78	CPM2	0.16	468	6.91	-15	16.40	" "
				Parameters Stable Well Sampled					
<b>Acceptable Parameter Range:</b>				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
<b>Analytes Sampled for:</b>		<b>Bottles Collected</b>				<b>QA/QC Information</b>		<b>Field Comments</b>	
Field Filtered: 1	Unfiltered: 9	x 40 mL Vial (HCl) 3	x 60 mL Ferrous 2	x 60 mL metals (HNO <sub>3</sub> ) 1	x 250 mL Plastic 1			Bore volume calculation, bore condition, fate of tubing, redox correction etc.	
		x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> ) 1	x 100 mL Amber 1	x 250 mL Plastic 1					
			1 yellow	1 purple					
				1 orange					
<b>Approval and Distribution</b>									
Fieldwork Staff Signature: <i>Jacob Miller</i>			Date: 14/07/17			Checker Name and Signature			Date
Project Manager Signature			Date			Distribution: Project Central File			



FQM - Groundwater Sampling and Purging Record

2

Standard suite

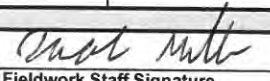


Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: GW43			
Client: EPA		Project Location: Employment Pct		Fieldwork Staff: JM BDBH		Sample Date: 13/7/17			
General Bore Information				Parameter Info		Decontamination			
Date of GW Level: 10/7/17		Bore Radius (mm): 50		Chem Kit Serial No.: 90FCMV		<input checked="" type="checkbox"/> Decontaminated			
Depth to GW (m-pvc): 1.898		Screen Interval (m):		Chem Kit Model: 0		<input type="checkbox"/> Dedicated			
Bore Depth (m-pvc): 4.950		Casing Radius (mm):		Corrected Redox: Y / (N)		<input checked="" type="checkbox"/> Disposable			
Depth to Product (m-pvc):		Cover Type (gatic/stick-up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve			
Product Thickness (m): 2.65 x 5		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole <input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra			
Key Type (if applicable): Hex						<input type="checkbox"/> Other (specify)			
Calculated bore volume (L): 13		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L): 40L			
Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
10:26	0.5	1.935	CPM2	2.54	1030	7.37	15	15.0	no odour, light brown, low turb
10:29	1.1	1.940	"	1.50	991	7.22	1	15.6	
10:32	1.7	1.940	"	0.45	1029	7.19	-36	16.2	
10:35	2.3	1.940		0.19	1091	7.19	-53	16.3	
10:38	2.9			0	1160	7.20	-68	16.3	
10:41	3.5			0	1240	7.20	-80	16.3	
10:44	4.1			0	1253	7.21	-85	16.2	
10:47	4.7			0	1265	7.21	-89	16.2	
			stable	# sampled					
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
Analytes Sampled for:		Bottles Collected			QA/QC Information		Field Comments		
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc. * this dissolved oxy cable was loose = 0 mg/L readings		
Metals 60mL		3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	1 x 250 mL Plastic					
		1 125 sulfite	1 60 nitrate						
		1 250 sulfide							
Approval and Distribution									
Fieldwork Staff Signature: [Signature]		Date: 13/7/17		Checker Name and Signature: _____		Date: _____			
Project Manager Signature: _____		Date: _____		Distribution: Project Central File					



**FQM - Groundwater Sampling and Purging Record**

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <b>GW44</b>			
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: <b>11/07/17</b>			
<b>General Bore Information</b>				<b>Parameter Info.</b>		<b>Decontamination</b>			
Date of GW Level: <b>11/07/17</b>		Bore Radius (mm):		Chem Kit Serial No.: <b>FLM90VK</b>		<input checked="" type="checkbox"/> Decontaminated			
Depth to GW (m-pvc): <b>2.675</b>		Screen Interval (m):		Chem Kit Model:		<input type="checkbox"/> Dedicated			
Bore Depth (m-pvc):		Casing Radius (mm):		<b>Corrected Redox: Y / N</b>		<input checked="" type="checkbox"/> Disposable			
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)			
Product Thickness (m):		Bore Locked (YES/NO):		<b>Parameter method:</b> <input type="checkbox"/> Downhole		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve			
		Key Type (if applicable):		<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra			
						<input type="checkbox"/> Other (specify)			
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):			
<b>Water Quality Parameters</b>									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
13:27	0.60	2.67	CPM2	5.43	983	7.45	-154	15.50	<i>low yellow brown turbidity, organic odour as above</i>
13:30	1.20	2.67	CPM2	4.45	1464	7.15	-147	15.70	
13:33	1.80	2.67	CPM2	4.11	1448	6.96	-142	15.70	
13:36	2.40	2.67	CPM2	3.39	1454	6.84	-157	15.80	
13:39	3.00	2.67	CPM2	2.84	1509	6.84	-182	15.90	
13:42	3.60	2.67	CPM2	2.96	1612	6.95	-202	15.90	
13:45	4.2	2.67	CPM2	1.61	1655	7.01	-211	15.90	
13:48	4.8	2.67	CPM2	1.50	1674	7.04	-217	15.90	
13:51	5.4	2.67	CPM2	1.40	1677	7.07	-218	15.90	
13:54	6.0	2.67	CPM2	1.40	1688	7.09	-220	15.90	
Parameters				Stable	Well	Sampled			
<b>Acceptable Parameter Range:</b>				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
<b>Analytes Sampled for:</b>		<b>Bottles Collected</b>				<b>QA/QC Information</b>		<b>Field Comments</b>	
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)		x 60 mL Ferrous		2 x 60 mL metals (HNO <sub>3</sub> )		Bore volume calculation, bore condition, fate of tubing, redox correction etc.	
1	9	3	x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1	x 100 mL Amber	1	x 250 mL Plastic		
				1	yellow	1	orange		
							1	purple	
<b>Approval and Distribution</b>									
 Fieldwork Staff Signature			11/7/17 Date		_____ Checker Name and Signature			_____ Date	
_____ Project Manager Signature			_____ Date		Distribution: Project Central File				



**FQM - Groundwater Sampling and Purging Record**

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <b>GW45</b>			
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: <b>14/07/17</b>			
General Bore Information			Parameter Info.		Decontamination		Well Development or Well Sampling Event? (circle)		
Date of GW Level: <b>14/07/17</b>		Bore Radius (mm):		Chem Kit Serial No.: <b>FLM90 VR</b>		<input checked="" type="checkbox"/> Decontaminated		Sampling Method	
Depth to GW (m-pvc): <b>3.376</b>		Screen Interval (m):		Chem Kit Model:		<input type="checkbox"/> Dedicated		Intake depth:	
Bore Depth (m-pvc):		Casing Radius (mm):		Corrected Redox: Y / N		<input checked="" type="checkbox"/> Disposable		Hydrasleeve info.	
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)		Hydrasleeve Size:	
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve		Hydrasleeve Type:	
		Key Type (if applicable):		<input type="checkbox"/> Retrieved		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra		Sampling Depth (m-pvc):	
						<input type="checkbox"/> Other (specify)		Hydrasleeve Install time:	
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:				Sampling Start Time:	
								Parameters	
Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
9:31	0.60	1.43	CPM1	1.06	5780	6.86	63	14.60	Very silty/sandy, very turbid, dark grey no odour as above
9:34	0.90	1.43	CPM1	0.20	5950	6.98	-30	14.90	
9:37	1.26	1.43	CPM1	0.46	5950	7.01	-49	15.00	
9:40	1.50	1.43	CPM1	0.30	5920	7.00	-59	15.10	
9:43	1.80	1.43	CPM1	0.27	5880	7.00	-66	15.10	
9:46	2.10	1.43	CPM1	0.20	5890	6.97	-70	15.20	
9:49	2.40	1.43	CPM1	0.22	5820	6.97	-73	15.20	
		Parameters		Stable	Well	Sampled			
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments	
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	x 60 mL metals (HNO <sub>3</sub> )				Bore volume calculation, bore condition, fate of tubing, redox correction etc.	
1	9	3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	1 x 250 mL Plastic <b>green</b>					
			1 <b>orange</b>	1 <b>Yellow</b>					
				1 <b>purple</b>					
Approval and Distribution									
Fieldwork Staff Signature: <i>[Signature]</i>		Date: <b>14/07/17</b>		Checker Name and Signature		Date			
Project Manager Signature		Date		Distribution: Project Central File					



ANZ

**FQM - Groundwater Sampling and Purging Record**

*In quiet road - need to assess best time of day.  
Standard suite*

AE M

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: GW46			
Client: EPA		Project Location:		Fieldwork Staff: JMB/BH		Sample Date: 13/7/17			
General Bore Information				Parameter Info		Decontamination			
Date of GW Level: 10/7/17	Bore Radius (mm): 50	Chem Kit Serial No.:	<input type="checkbox"/> Decontaminated	<input checked="" type="checkbox"/> Low Flow Pump rate:		Hydrasleeve Size:			
Depth to GW (m-pvc): 2.229	Screen Interval (m): 1	Chem Kit Model:	<input checked="" type="checkbox"/> Dedicated	Intake depth:		Hydrasleeve Type:			
Bore Depth (m-pvc): 3.950	Casing Radius (mm): 1	Corrected Redox: Y / N	<input type="checkbox"/> Disposable	<input type="checkbox"/> Bailer	<input type="checkbox"/> Hydrasleeve	Sampling Depth (m-pvc):			
Depth to Product (m-pvc):	Cover Type (gatic/stick up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)	<input type="checkbox"/> Peristaltic Pump	<input type="checkbox"/> Waterra	Hydrasleeve Install time:			
Product Thickness (m): 1.7	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Other (specify)		Sampling Start Time:			
	Key Type (if applicable): hex	<input type="checkbox"/> Retrieved				Parameters			
Calculated bore volume (L): 8.5		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):			
Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
14.52	0.5	2.30	CPM2	4.36	1033	6.75	-19	16.0	no odour, Light brown, mod turbidity
14.55	1.1	2.30	"	1.62	1441	6.78	-27	16.6	
14.58	1.7	"	"	0.62	1950	6.95	-37	17.2	
15.01	2.3	"	"	0.25	1858	6.95	-46	17.7	
15.04	2.9	↓	↓	0.13	1463	6.95	-49	17.8	
15.07	3.5	↓	↓	0.08	1461	6.95	-51	17.8	
15.10	4.1	↓	↓	stable	* sampled				
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
Analytes Sampled for:		Bottles Collected			QA/QC Information		Field Comments		
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.		
		3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	1 x 250 mL Plastic					
		1 125 mL IKA	1 60 mL nitrate						
		1 250 mL IKA							
Approval and Distribution									
Fieldwork Staff Signature: <i>[Signature]</i>		Date: 13/7/17		Checker Name and Signature: _____			Date: _____		
Project Manager Signature: _____		Date: _____		Distribution: Project Central File					



ANZ

FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: GW47					
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 14/07/17					
General Bore Information				Parameter Info		Decontamination		Sampling Method		Hydrasleeve info	
Date of GW Level: 14/06/17	Bore Radius (mm):	Chem Kit Serial No.: FLW90	<input checked="" type="checkbox"/> Decontaminated	<input checked="" type="checkbox"/> Low Flow Pump rate: CPM2	Hydrasleeve Size:	Monitoring sequence followed (number in order):					
Depth to GW (m-pvc): 1.819	Screen Interval (m):	Chem Kit Model:	<input type="checkbox"/> Dedicated	Intake depth:	Hydrasleeve Type:						
Bore Depth (m-pvc):	Casing Radius (mm):	Corrected Redox: Y / N	<input checked="" type="checkbox"/> Disposable	<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve	Sampling Depth (m-pvc):	Gauging					
Depth to Product (m-pvc):	Cover Type (gatic/stick up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)	<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra	Hydrasleeve Install time:	Hydrasleeve in					
Product Thickness (m):	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Other (specify)	Sampling Start Time:	Hydrasleeve out					
	Key Type (if applicable):	<input checked="" type="checkbox"/> Retrieved				Parameters					
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):					
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
11:23	0.60	1.83	CPM2	3.69	8000	7.16	38	14.8	high turbidity, grey, no odour		
11:26	1.20	1.82	CPM2	1.63	8960	7.20	18	15.10	as above		
11:29	1.80	1.83	CPM2	1.21	10440	7.25	-18	15.20	" "		
11:32	2.4	1.83	CPM2	0.94	11910	7.31	-51	15.30	" "		
11:35	3.0	1.83	CPM2	0.86	12190	7.31	-66	15.30			
11:38	3.60	1.83	CPM2	0.88	12390	7.32	-80	15.30			
11:41	4.20	1.83	CPM2	0.94	12610	7.32	-91	15.30			
11:44	4.80	1.83	CPM2	0.96	12840	7.32	-102	15.30			
11:47	5.20	1.83	CPM2	0.89	13130	7.32	-108	15.30			
11:50	5.80	1.83	CPM2	0.95	13230	7.31	-110	15.30			
11:53	6.40	1.83	CPM2	0.85	13370	7.31	-114	15.30			
11:56	7.00	1.83	CPM2	0.90	13580	7.31	-120	15.30			
				Parameters Stabilized		well		Sampled			
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments			
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	6 x 60 mL metals (HNO <sub>3</sub> )		Dup / trip		Bore volume calculation, bore condition, fate of tubing, redox correction etc.			
3	27	9 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	3 x 100 mL Amber	3 x 250 mL Plastic green							
			3 orange	3 purple							
				3 yellow							
Approval and Distribution											
Fieldwork Staff Signature: <i>Jack Mule</i>			Date:			Checker Name and Signature:			Date:		
Project Manager Signature:			Date:			Distribution: Project Central File					



**FQM - Groundwater Sampling and Purging Record**

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: G498					
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 17/07/17					
<b>General Bore Information</b>				<b>Parameter Info.</b>		<b>Decontamination</b>					
Date of GW Level: 17/07/17		Bore Radius (mm): 50mm		Chem Kit Serial No.: 90FUMV		<input checked="" type="checkbox"/> Decontaminated					
Depth to GW (m-pvc): 2.122		Screen Interval (m):		Chem Kit Model:		<input type="checkbox"/> Dedicated					
Bore Depth (m-pvc):		Casing Radius (mm):		Corrected Redox: Y / (N)		<input type="checkbox"/> Disposable					
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)					
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra					
		Key Type (if applicable): Other		<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Other (specify) SUBVERSIBLE					
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):					
<b>Water Quality Parameters</b>											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
8:57	0.3	2.141	CPM3	2.56	1590	6.12	5	14.7	hole know, highly turbid, no odour or smell.		
9:00	1.2	2.143	" "	1.37	1514	6.07	4	15.6			
9:03	2.1	2.141	" "	1.00	1499	6.09	2	15.8			
9:06	3.0	2.149	" "	0.79	1491	6.11	-1	15.7			
9:09	3.9	2.149	" "	0.68	1486	6.12	-3	15.9			
9:12	4.8	2.149	" "	0.61	1489	6.14	-6	16.0			
				SAMPLED							
<b>Acceptable Parameter Range:</b>				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
<b>Analytes Sampled for:</b>		<b>Bottles Collected</b>				<b>QA/QC Information</b>		<b>Field Comments</b>			
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)		x 60 mL Ferrous		x 60 mL metals (HNO <sub>3</sub> )		Bore volume calculation, bore condition, fate of tubing, redox correction etc.			
		3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )		1 x 100 mL Amber		x 250 mL Plastic					
		1 x nitride		1 x purple		1 x sound probe					
		1 x sulphide									
<b>Approval and Distribution</b>											
Fieldwork Staff Signature:			Date: 17/07/17		Checker Name and Signature: _____			Date: _____			
Project Manager Signature: _____			Date: _____		Distribution: Project Central File						



FQM - Groundwater Sampling and Purging Record

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <u>GW49</u>					
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: <u>11/07/17</u>					
General Bore Information				Parameter Info.		Decontamination		Sampling Method		Hydrasleeve info.	
Date of GW Level: <u>11/07/17</u>		Bore Radius (mm):		Chem Kit Serial No.: <u>FLM90VR</u>		<input checked="" type="checkbox"/> Decontaminated		<input checked="" type="checkbox"/> Low Flow Pump rate:		Hydrasleeve Size:	
Depth to GW (m-pvc): <u>3.141</u>		Screen Interval (m):		Chem Kit Model:		<input type="checkbox"/> Dedicated		Intake depth:		Hydrasleeve Type:	
Bore Depth (m-pvc):		Casing Radius (mm):		Corrected Redox: <u>Y / N</u>		<input checked="" type="checkbox"/> Disposable		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve		Sampling Depth (m-pvc):	
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra		Hydrasleeve Install time:	
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole				<input type="checkbox"/> Other (specify)		Sampling Start Time:	
		Key Type (if applicable):		<input checked="" type="checkbox"/> Retrieved						Parameters	
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:				Total purged volume (L):			
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
14:27	0.60	3.16	CPM2	4.49	1515	8.20	-73	14.80	low yellow turbidity, organic sulphur odour		
14:30	1.20	3.16	CPM2	0.94	5130	7.76	-92	15.30	as above		
14:33	1.60	3.16	CPM2	0.68	2420	7.68	-93	15.40	" "		
14:36	2.40	3.16	CPM2	0.63	1510	7.59	-87	15.50	" "		
14:39	3.00	3.16	CPM2	0.53	1290	7.55	-79	15.50	" "		
14:42	3.60	3.16	CPM2	0.35	1210	7.56	-78	15.50	" "		
14:45	4.20	3.16	CPM2	0.33	1190	7.54	-80	15.50	" "		
Parameters				stable		well		sampled			
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments			
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.				
1	<del>11</del>	2 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	1 x 250 mL Plastic	gen						
		2 PFA5	1 yellow	1 purple	orange						
Approval and Distribution											
Fieldwork Staff Signature: <u>[Signature]</u>		Date: <u>11/07/17</u>		Checker Name and Signature: _____				Date: _____			
Project Manager Signature: _____		Date: _____		Distribution: Project Central File							



FQM - Groundwater Sampling and Purging Record

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <b>GW50</b>			
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: <b>11/07/17</b>			
General Bore Information				Parameter Info.		Decontamination			
Date of GW Level: <b>11/07/17</b>		Bore Radius (mm):		Chem Kit Serial No.: <b>FLMOUR</b>		<input checked="" type="checkbox"/> Decontaminated			
Depth to GW (m-pvc): <b>2.965</b>		Screen Interval (m):		Chem Kit Model:		<input type="checkbox"/> Dedicated			
Bore Depth (m-pvc):		Casing Radius (mm):		Corrected Redox: <b>Y / N</b>		<input checked="" type="checkbox"/> Disposable			
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)			
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve			
		Key Type (if applicable):		<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra			
						<input type="checkbox"/> Other (specify)			
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):			
Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
12:37	0.60	2.97	CPM2	0.24	2168	7.00	-82	17.6	<i>grey, high turbidity, organic sulphur odour as above</i>
12:40	1.20	2.97	CPM2	0.15	2195	7.01	-86	17.30	
12:43	1.80	2.97	CPM2	0.10	2156	7.02	-87	17.10	
12:46	2.40	2.97	CPM2	0.07	2111	7.03	-89	16.90	
12:49	3.00	2.97	CPM2	0.06	2080	7.04	-89	16.90	
12:52	3.60	2.97	CPM2	0.04	2056	7.03	-88	16.80	
12:55	4.20	2.97	CPM2	0.04	2040	7.04	-88	16.80	
Parameters				Stable				Well Sampled	
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
Analytes Sampled for:		Bottles Collected			QA/QC Information		Field Comments		
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)		x 60 mL Ferrous	2	x 60 mL metals (HNO <sub>3</sub> )		Bore volume calculation, bore condition, fate of tubing, redox correction etc.	
1	9	3	x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1	x 100 mL Amber	1	x 250 mL Plastic <i>green</i>		
				1	<i>yellow</i>	1	<i>purple</i>		
				1	<i>orange</i>				
Approval and Distribution									
Fieldwork Staff Signature: <i>[Signature]</i>		Date: <b>11/07/17</b>		Checker Name and Signature			Date		
Project Manager Signature		Date		Distribution: Project Central File					



**FQM - Groundwater Sampling and Purging Record**

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <i>GW51</i>			
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: <i>17/07/17</i>			
<b>General Bore Information</b>				<b>Parameter Info.</b>		<b>Decontamination</b>			
Date of GW Level: <i>17/07/17</i>		Bore Radius (mm): <i>50mm</i>		Chem Kit Serial No.: <i>906PMW</i>		<input checked="" type="checkbox"/> Decontaminated			
Depth to GW (m-pvc): <i>2.101</i>		Screen Interval (m):		Chem Kit Model:		<input type="checkbox"/> Dedicated			
Bore Depth (m-pvc):		Casing Radius (mm):		Corrected Redox: <i>Y I N</i>		<input checked="" type="checkbox"/> Disposable			
Depth to Product (m-pvc):		Cover Type (gate/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)			
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra			
		Key Type (if applicable): <i>Allen</i>		<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Other (specify) <i>SUBMERGIBLE</i>			
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):			
<b>Water Quality Parameters</b>									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
<i>11:42</i>	<i>0.3</i>	<i>2.109</i>	<i>CPM3</i>	<i>1.65</i>	<i>3.19</i>	<i>7.20</i>	<i>-59</i>	<i>14.8</i>	<i>pale brown, med turbidity, no draw or deer.</i>
<i>11:45</i>	<i>1.2</i>	<i>2.111</i>	<i>" "</i>	<i>1.15</i>	<i>3.27</i>	<i>7.19</i>	<i>-60</i>	<i>15.10C</i>	
<i>11:48</i>	<i>2.1</i>	<i>2.117</i>	<i>" "</i>	<i>0.70</i>	<i>3.39</i>	<i>7.21</i>	<i>-61</i>	<i>15.59C</i>	
<i>11:51</i>	<i>3.0</i>	<i>2.111</i>	<i>" "</i>	<i>0.55</i>	<i>3.54</i>	<i>7.25</i>	<i>-63</i>	<i>15.6</i>	
<i>11:54</i>	<i>3.9</i>	<i>2.108</i>	<i>" "</i>	<i>0.38</i>	<i>3.69</i>	<i>7.28</i>	<i>-68</i>	<i>15.6</i>	
<i>11:57</i>	<i>4.8</i>	<i>2.111</i>	<i>" "</i>	<i>0.25</i>	<i>3.80</i>	<i>7.30</i>	<i>-72</i>	<i>15.6</i>	
				<i>→ AMPED</i>					
<b>Acceptable Parameter Range:</b>				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments	
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)		x 60 mL Ferrous		x 60 mL metals (HNO <sub>3</sub> )		<i>Bore volume calculation, bore condition, fate of tubing, redox correction etc.</i>	
<i>1 x metals</i>		x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )		x 100 mL Amber		x 250 mL Plastic			
		x sulphide		x sample					
		x sulphide		x sample					
<b>Approval and Distribution</b>									
Fieldwork Staff Signature: <i>[Signature]</i>		Date: <i>17/07/17</i>		Checker Name and Signature: _____			Date: _____		
Project Manager Signature: _____		Date: _____		Distribution: Project Central File					



# FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		Bore ID: GW52					
Client: EPA		Project Location:		PM Name: Averyll Coyne					
Fieldwork Staff: JM BP BH		Sample Date:		Well Development or Well Sampling Event? (circle)					
General Bore Information			Parameter Info.		Decontamination				
Date of GW Level: 10/07/17	Bore Radius (mm):	Chem Kit Serial No.: FLM90UR	<input checked="" type="checkbox"/> Decontaminated		<input checked="" type="checkbox"/> Low Flow Pump rate: CPM2				
Depth to GW (m-pvc): 2.386	Screen Interval (m):	Chem Kit Model:	<input type="checkbox"/> Dedicated		Intake depth:				
Bore Depth (m-pvc):	Casing Radius (mm):	Corrected Redox: Y / N	<input checked="" type="checkbox"/> Disposable		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve				
Depth to Product (m-pvc):	Cover Type (gatic/stick up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra				
Product Thickness (m):	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole	<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Other (specify)				
Calculated bore volume (L):	Includes/ excludes bore annulus (circle)	# purge volumes removed:	Total purged volume (L):		Hydrasleeve info.				
Monitoring sequence followed (number in order):									
Hydrasleeve Size:									
Hydrasleeve Type:									
Sampling Depth (m-pvc): Gauging									
Hydrasleeve Install time: Hydrasleeve in									
Sampling Start Time: Hydrasleeve out									
Parameters									
Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
15:43	0	2.39	CPM2		Pne Prngl				
15:46	0.50	2.39	CPM2	1.64	1810	6.91	52	14.90	
15:49	1.10	2.39	CPM2	1.06	1729	6.92	43	15.00	Yellow brown moderate turbidity present
15:52	1.70	2.39	CPM2	0.40	1645	6.91	23	15.10	as above
15:55	2.30	2.39	CPM2	0.40	1594	6.92	4	15.10	" "
15:58	2.90	2.39	CPM2	0.23	1580	6.93	-32	15.10	" "
16:01	3.50	2.39	CPM2	0.21	1579	6.93	-67	15.10	" "
16:04	4.10	2.39	CPM2	0.18	1580	6.94	-105	15.10	" "
16:07	4.70	2.39	CPM2	0.15	1586	6.93	-140	15.20	" "
16:10	5.30	2.39	CPM2	0.15	1670	6.95	-150	15.20	" "
16:13	5.90	2.39	CPM2	0.13	1670	6.95	-154	15.10	" "
16:16	6.50	2.39	CPM2	0.15	1671	6.95	-156	15.10	" "
Parameters				Stable	Well	Sampled			
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	
Analytes Sampled for:		Bottles Collected			QA/QC Information		± 10% turbidity (if using a turbidity meter)		
Field Filtered:	Unfiltered:						Field Comments		
1	9	x 40 mL Vial (HCl)	x 60 mL Ferrous	2	x 60 mL metals (HNO <sub>3</sub> )	Bore volume calculation, bore condition, fate of tubing, redox correction etc.			
		3	x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1	x 100 mL Amber	1	x 250 mL Plastic		
				1	Orange	1	Purple		
						1	Yellow		
Approval and Distribution									
Fieldwork Staff Signature			Date		Checker Name and Signature			Date	
Project Manager Signature			Date		Distribution: Project Central File				



FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <u>GWS3</u>			
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: <u>17/07/17</u>			
General Bore Information				Parameter Info.		Decontamination			
Date of GW Level: <u>17/07/17</u>		Bore Radius (mm): <u>50mm</u>		Chem Kit Serial No.: <u>90ELMV</u>		<input type="checkbox"/> Decontaminated			
Depth to GW (m-pvc): <u>2.549</u>		Screen Interval (m):		Chem Kit Model:		<input type="checkbox"/> Dedicated			
Bore Depth (m-pvc):		Casing Radius (mm):		Corrected Redox: <u>Y / N</u>		<input type="checkbox"/> Disposable			
Depth to Product (m-pvc):		Cover Type (gator/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)			
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve			
		Key Type (if applicable): <u>Alter.</u>		<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra			
						<input type="checkbox"/> Other (specify) <u>SUBMERSIBLE</u>			
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):			
Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
9:50	0.3	2.549	0.13	2.33	1428	6.66	10	15.1	pale brown, med turbidity no odour or sheen.
9:53	1.2	2.535	" "	0.50	1417	6.44	9	16.8	
9:56	2.0	2.549	" "	0.28	1419	6.27	-3	16.9	
9:59	3.0	2.552	" "	0.28	1422	6.26	-10	17.1	
10:02	3.9	2.539	" "	0.26	1428	6.27	-18	17.3	
10:05	4.8	2.539	" "	0.29	1428	6.28	-20	17.4	
10:08	5.7	2.539	" "	0.26	1430	6.30	-23	17.5	
			SAMPLED						
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
Analytes Sampled for:		Bottles Collected			QA/QC Information		Field Comments		
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.		
		3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	x 250 mL Plastic					
		1 x sulphide	1 x purple	1 x 500ml plastic					
Approval and Distribution									
Fieldwork Staff Signature: <u>[Signature]</u>		Date: <u>17/07/17</u>		Checker Name and Signature: _____			Date: _____		
Project Manager Signature: _____		Date: _____		Distribution: Project Central File					



FQM - Groundwater Sampling and Purging Record

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: 62W54					
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 11/07/17					
General Bore Information				Parameter Info.		Decontamination		Sampling Method		Hydrasleeve info.	
Date of GW Level: 11/07/17		Bore Radius (mm):		Chem Kit Serial No.: ELM90UR		<input checked="" type="checkbox"/> Decontaminated		Low Flow Pump rate: CPM2		Hydrasleeve Size:	
Depth to GW (m-pvc): 3.054		Screen Interval (m):		Chem Kit Model:		<input type="checkbox"/> Dedicated		Intake depth:		Hydrasleeve Type:	
Bore Depth (m-pvc):		Casing Radius (mm):		Corrected Redox: Y / N		<input checked="" type="checkbox"/> Disposable		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve		Sampling Depth (m-pvc):	
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra		Hydrasleeve Install time:	
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole				<input type="checkbox"/> Other (specify)		Sampling Start Time:	
		Key Type (if applicable):		<input type="checkbox"/> Retrieved						Parameters	
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):					
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (ms/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
15:33	0.60	3.05	CPM2	3.02	1914	6.89	-138	15.80	yellow brown, high turb, no odour		
15:36	1.20	3.05	CPM2	2.46	2440	6.90	-158	16.10	as above		
15:39	1.80	3.05	CPM2	0.58	2550	6.90	-170	16.80	" "		
15:42	2.4	3.05	CPM2	0.27	259	6.95	-176	17.20	" "		
15:45	3.00	3.05	CPM2	0.24	2.62	6.96	-176	17.20	" "		
15:48	3.60	3.05	CPM2	0.24	2.63	6.95	-175	17.20	" "		
Parameters				Stable			Well			sampled	
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments			
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.				
1	9	2 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	1 x 250 mL Plastic green							
			1 yellow	1 orange							
				1 purple							
Approval and Distribution											
Fieldwork Staff Signature: <i>Tasyl M...</i>			Date: 17/07/17			Checker Name and Signature			Date		
Project Manager Signature			Date			Distribution: Project Central File					



FQM - Groundwater Sampling and Purging Record

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: GWS6					
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 10/07/17					
General Bore Information				Parameter Info.		Decontamination					
Date of GW Level: 10/07/17		Bore Radius (mm):		Chem Kit Serial No.: FLM90VR		<input checked="" type="checkbox"/> Decontaminated					
Depth to GW (m-pvc): 1.423		Screen Interval (m):		Chem Kit Model:		<input type="checkbox"/> Dedicated					
Bore Depth (m-pvc):		Casing Radius (mm):		Corrected Redox: Y / N		<input checked="" type="checkbox"/> Disposable					
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)							
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Other (specify)					
Key Type (if applicable):				<input type="checkbox"/> Retrieved							
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):					
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
14:30	0	1.44	CPM2	Pre	Purge				pump difficulties holding water		
14:44	0.50	1.44	CPM2	3.33	836	7.17	85	16.30	dark brown, very turbid, no odour		
14:47	1.10	1.44	CPM2	2.96	835	7.16	81	16.30	as above		
14:50	1.70	1.44	CPM2	2.90	831	7.16	80	16.30	" "		
14:53	2.30	1.44	CPM2	2.62	816	7.15	79	16.20	" "		
14:56	2.90	1.44	CPM2	2.55	834	7.15	79	16.20	" "		
14:59	3.50	1.44	CPM2	2.49	832	7.14	79	16.20	" "		
				Parameters stable hole sampled							
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments			
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)		x 60 mL Ferrous		x 60 mL metals (HNO <sub>3</sub> )		Bore volume calculation, bore condition, fate of tubing, redox correction etc.			
1	9	3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )		1 x 100 mL Amber		1 x 200 mL Plastic					
				1 Orange		1 Purple					
						1 Yellow					
Approval and Distribution											
Fieldwork Staff Signature			Date			Checker Name and Signature			Date		
Project Manager Signature			Date			Distribution: Project Central File					



ANZ

**FQM - Groundwater Sampling and Purging Record**

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <i>BW57</i>					
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: <i>13/07/17</i>					
General Bore Information				Parameter Info.		Decontamination		Sampling Method		Hydrasleeve info.	
Date of GW Level: <i>13/07/17</i>		Bore Radius (mm):		Chem Kit Serial No.: <i>FLM96UR</i>		<input checked="" type="checkbox"/> Decontaminated		<input checked="" type="checkbox"/> Low Flow Pump rate:		Monitoring sequence followed (number in order):	
Depth to GW (m-pvc): <i>1.455</i>		Screen Interval (m):		Chem Kit Model:		<input type="checkbox"/> Dedicated		Intake depth:		Hydrasleeve Type:	
Bore Depth (m-pvc): <i>2-30</i>		Casing Radius (mm):		Corrected Redox: Y / N		<input checked="" type="checkbox"/> Disposable		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve		Sampling Depth (m-pvc):	
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra		Hydrasleeve Install time:	
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole				<input type="checkbox"/> Other (specify)		Sampling Start Time:	
		Key Type (if applicable):		<input type="checkbox"/> Retrieved						Parameters	
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:				Total purged volume (L):			
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
15:30	0.60	1.48	CPM2	3.92	1434	7.70	-123	13.60	<i>light grey turbidity moderate, no odour</i>		
15:33	1.20	1.48	CPM2	0.73	1413	7.80	-139	14.20	<i>as above, slight organic odour</i>		
15:36	1.80	1.48	CPM2	0.33	1395	7.91	-150	14.60	" "		
15:39	2.4	1.48	CPM2	0.15	1389	7.91	-165	14.90	" "		
15:42	3.00	1.52	CPM2	0.80	1393	7.82	-166	14.90	" "		
15:45	3.30	1.52	CPM1	0.09	1391	7.74	-168	14.80	" "		
15:48	3.60	1.51	CPM1	0.03	1394	7.63	-169	14.70	" "		
15:51	3.90	1.52	CPM1	0.06	1393	7.54	-172	14.60	" "		
15:54	4.20	1.51	CPM1	0.05	1392	7.47	-177	14.60	" "		
15:57	4.50	1.50	CPM1	0.03	1394	7.43	-180	14.70	" "		
16:00	4.80	1.52	CPM1	0.05	1390	7.44	-178	14.70	" "		
<i>Parameters stable Well sampled</i>											
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
Analytes Sampled for:			Bottles Collected				QA/QC Information		Field Comments		
Field Filtered:		Unfiltered:		x 40 mL Vial (HCl)		x 60 mL Ferrous		x 60 mL metals (HNO <sub>3</sub> )		Bore volume calculation, bore condition, fate of tubing, redox correction etc.	
1		9		3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )		1 x 100 mL Amber		1 x 250 mL Plastic <i>grey</i>			
						1 purple		1 yellow			
								1 orange			
Approval and Distribution											
Fieldwork Staff Signature: <i>[Signature]</i>			Date: <i>13/07/17</i>			Checker Name and Signature: _____			Date: _____		
Project Manager Signature: _____			Date: _____			Distribution: Project Central File					



**FQM - Groundwater Sampling and Purging Record**

4

PFAS

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: GW61					
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 13/7/17					
General Bore Information				Parameter Info.		Decontamination					
Date of GW Level: 10/7/17		Bore Radius (mm): 50		Chem Kit Serial No.: 90FLMV		<input checked="" type="checkbox"/> Decontaminated					
Depth to GW (m-pvc): 2.374		Screen Interval (m): 1		Chem Kit Model: D		<input type="checkbox"/> Dedicated					
Bore Depth (m-pvc): 4.03		Casing Radius (mm): 1		Corrected Redox: Y / (N)		<input checked="" type="checkbox"/> Disposable					
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)					
Product Thickness (m): 1.6		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve					
Calculated bore volume (L): 8		Key Type (if applicable): hex		<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra					
Includes/ excludes bore annulus (circle)		# purge volumes removed: 3		Total purged volume (L): 24							
Well Development or Well Sampling Event? (circle)											
Hydrasleeve info.											
Monitoring sequence followed (number in order):		Hydrasleeve Size:		Intake depth: 0.560		Hydrasleeve Type:					
Gauging		Sampling Depth (m-pvc):		Hydrasleeve Install time:		Hydrasleeve in					
Hydrasleeve out		Sampling Start Time:		Parameters							
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
12.21	0.5	2.376	CPM2	4.11	3250	7.83	-65	17.3	greyish -		
12.24	1.1	"	"	0.60	4340	7.18	-130	18.1	H2O2 - Black, mod turb		
12.27	1.7	"	"	0.20	7750	7.20	-150	18.5			
12.30	2.3			0.05	5010	7.21	-159	18.7			
12.33	2.9			0.00	5110	7.20	-163	19.0			
12.36	3.5			0.00	5180	7.20	-164	18.9	light grey ↓ low turb.		
<del>12.39</del>	<del>4.1</del>			stabled & sampled							
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments			
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2	x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.			
60mL metals		3	x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1	x 100 mL Amber					1	x 250 mL Plastic
		1	Sulfite 125	2	PFAS 60						
		1	Sulfide 250	7	Nitrate 60						112
Approval and Distribution											
Fieldwork Staff Signature		Date		Checker Name and Signature		Date					
Project Manager Signature		Date		Distribution: Project Central File							



# FQM - Groundwater Sampling and Purging Record

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <i>AW6a</i>			
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: <i>17/07/17</i>			
<b>General Bore Information</b>				<b>Parameter Info.</b>		<b>Well Development or Well Sampling Event? (circle)</b>			
Date of GW Level: <i>17/07/17</i>		Bore Radius (mm): <i>50mm</i>		Chem Kit Serial No.: <i>90FUMW</i>		<b>Decontamination</b>			
Depth to GW (m-pvc): <i>1.734</i>		Screen Interval (m):		Chem Kit Model:					
Bore Depth (m-pvc):		Casing Radius (mm):		Corrected Redox: <i>Y / N</i>		<b>Sampling Method</b>			
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)					
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole <input checked="" type="checkbox"/> Retrieved		<b>Hydrasleeve Info</b>			
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:				Total purged volume (L):	
Key Type (if applicable): <i>Amor</i>									
<b>Water Quality Parameters</b>									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
<i>10:58</i>	<i>0.3</i>	<i>1.756</i>	<i>CM3</i>	<i>2.12</i>	<i>4.71</i>	<i>7.15</i>	<i>-11</i>	<i>14.4°C</i>	<i>pale brown, high turbidity, no odour or colour</i>
<i>11:01</i>	<i>1.2</i>	<i>1.764</i>	<i>" "</i>	<i>0.74</i>	<i>4.77</i>	<i>7.09</i>	<i>-7</i>	<i>15.0°C</i>	
<i>11:04</i>	<i>2.1</i>	<i>1.789</i>	<i>" "</i>	<i>0.37</i>	<i>4.82</i>	<i>6.79</i>	<i>0</i>	<i>15.3°C</i>	
<i>11:07</i>	<i>3.0</i>	<i>1.784</i>	<i>" "</i>	<i>0.31</i>	<i>4.82</i>	<i>6.78</i>	<i>1</i>	<i>15.4°C</i>	
<i>11:10</i>	<i>3.9</i>	<i>1.783</i>	<i>" "</i>	<i>0.26</i>	<i>4.82</i>	<i>6.78</i>	<i>1</i>	<i>15.4</i>	
<i>11:13</i>	<i>4.8</i>	<i>1.775</i>	<i>" "</i>	<i>0.21</i>	<i>4.84</i>	<i>6.78</i>	<i>-5</i>	<i>15.4</i>	<i>low turbidity (brownish)</i>
				<b>SAMPLED</b>					
<b>Acceptable Parameter Range:</b>				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
<b>Analytes Sampled for:</b>		<b>Bottles Collected</b>				<b>QA/QC Information</b>		<b>Field Comments</b>	
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )				Bore volume calculation, bore condition, fate of tubing, redox correction etc.	
<i>1 - metals</i>		3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	x 250 mL Plastic					
		1 x sulphide	1 x purple	1 x 500 mL plastic					
		1 x sulphide							
<b>Approval and Distribution</b>									
Fieldwork Staff Signature: <i>[Signature]</i>		Date: <i>17/07/17</i>		Checker Name and Signature: _____			Date: _____		
Project Manager Signature: _____		Date: _____		Distribution: Project Central File					



# FQM - Groundwater Sampling and Purging Record

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <u>CWNG5</u>					
Client: EPA		Project Location:		Fieldwork Staff: JM/BP/BH		Sample Date: <u>19/7/17</u>					
General Bore Information				Parameter Info.		Decontamination					
Date of GW Level: <u>10/7/17</u>	Bore Radius (mm): <u>50</u>	Chem Kit Serial No.: <u>907LMV</u>	<input checked="" type="checkbox"/> Decontaminated		Sampling Method: <input checked="" type="checkbox"/> Low Flow Pump rate: <u>CPM2</u>		Well Development or Well Sampling Event? (circle) Monitoring sequence followed (number in order):				
Depth to GW (m-pvc):	Screen Interval (m): <u>1</u>	Chem Kit Model: <u>D</u>	<input type="checkbox"/> Dedicated		Intake depth: <u>0.56m</u>			Hydrasleeve Size: Hydrasleeve Type: Sampling Depth (m-pvc): Hydrasleeve Install time: Sampling Start Time:			
Bore Depth (m-pvc):	Casing Radius (mm): <u>1</u>	Corrected Redox: <u>Y / (N)</u>	<input checked="" type="checkbox"/> Disposable		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve		Gauging Hydrasleeve in Hydrasleeve out Parameters				
Depth to Product (m-pvc):	Cover Type (gatic/stick up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra						
Product Thickness (m):	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole	<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Other (specify)						
Calculated bore volume (L):	Includes/ excludes bore annulus (circle)	# purge volumes removed:	Total purged volume (L):								
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
13:22	0.5	3.470	CPM2	0.43	4150	7.04	-118	17.1	moderate to HC odour, Black, high turbidity		
13:25	1.1	↓	↓	0.16	4200	7.05	-127	17.6			
13:28	1.7	↓	↓	0.0	4210	7.10	-139	18.7			
13:31	2.3	↓	↓	0.0	4240	7.13	-143	19.2			
13:34	2.9	↓	↓	0.0	4250	7.14	-146	19.5			
13:37	3.5	↓	↓	0.0	4250	7.13	-146	19.7			
Stable & sampled											
yellowish brown ↓											
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments			
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2	x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.			
1 Metals 60mL		3	x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1	x 100 mL Amber					1	x 260 mL Plastic
		1	125 µL HAc	1	CO nitrate						
		1	250 µL sulfide								
Approval and Distribution											
Fieldwork Staff Signature: <u>[Signature]</u>		Date: <u>19/7/17</u>		Checker Name and Signature: _____		Date: _____					
Project Manager Signature: _____		Date: _____		Distribution: Project Central File							



FQM - Groundwater Sampling and Purging Record

①  
PFAS incl.



Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: GWG7			
Client: EPA		Project Location: Employment Pct		Fieldwork Staff: JM BP BH		Sample Date: 13/7/17			
General Bore Information				Parameter Info.		Decontamination			
Date of GW Level: 10/7/17		Bore Radius (mm): 50		Chem Kit Serial No.: 907MV		<input checked="" type="checkbox"/> Decontaminated			
Depth to GW (m-pvc): 1.881		Screen Interval (m): 1		Chem Kit Model: D		<input type="checkbox"/> Dedicated			
Bore Depth (m-pvc): 3.97		Casing Radius (mm): 1		Corrected Redox: Y / (N)		<input checked="" type="checkbox"/> Disposable			
Depth to Product (m-pvc): 1		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)			
Product Thickness (m): 2.1 x 5		Bore Locked (YES/NO):		Parameter method: FI Downhole		<input type="checkbox"/> Peristaltic Pump			
Calculated bore volume (L): 8.5		Key Type (if applicable): hex		<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Waterra			
Includes/ excludes bore annulus (circle)		# purge volumes removed: 3		Total purged volume (L): 25.5 L		Well Development or Well Sampling Event? (circle)			
Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
9.33	0.5	1.825	CPM2	3.83	2860	6.99	146	14.5	no odour, greyish brown, low turb
9.36	1.1	1.836	"	0.91	1851	7.08	14	15.5	
9.39	1.7	↓	"	0.51	1821	7.11	-11	15.8	
9.42	2.3	↓	"	0.38	1783	7.12	-23	16.0	
9.45	2.9	↓	↓	0.40	1766	7.13	-35	16.1	
9.48	3.5	↓	↓	0.29	1750	7.14	-40	16.1	
9.51	4.1	↓	↓	0.22	1742	7.14	-50	16.3	
9.54	4.7	↓	↓	0.21	1738	7.15	-59	16.3	
Stable & Sampled									
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments	
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	x 60 mL metals (HNO <sub>3</sub> )				Bore volume calculation, bore condition, fate of tubing, redox correction etc.	
Metals		3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	x 250 mL Plastic					
60ML		1 125 Sulfite	1 x 60 nitrate						
		1 250 Sulfide	2 x 60 PFAS	(12)					
Approval and Distribution									
Fieldwork Staff Signature: [Signature]		Date: 13/7/17		Checker Name and Signature: _____		Date: _____			
Project Manager Signature: _____		Date: _____		Distribution: Project Central File					



ANZ  
**FQM - Groundwater Sampling and Purging Record**

(5) or (4)  
 Standard Suite



Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: GWG9			
Client: EPA		Project Location:		Fieldwork Staff: JM BF BH		Sample Date: 14/7/17			
<b>General Bore Information</b>				<b>Parameter Info.</b>		<b>Decontamination</b>			
Date of GW Level: 10/7/17		Bore Radius (mm): 50		Chem Kit Serial No.: 90FLMV		<input checked="" type="checkbox"/> Decontaminated			
Depth to GW (m-pvc):		Screen Interval (m):		Chem Kit Model: 0		<input type="checkbox"/> Dedicated			
Bore Depth (m-pvc):		Casing Radius (mm):		Corrected Redox: Y / (N)		<input checked="" type="checkbox"/> Disposable			
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)			
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve			
Calculated bore volume (L):		Key Type (if applicable): Nrx		<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra			
Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):		<input type="checkbox"/> Other (specify)			
<b>Water Quality Parameters</b>									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
11:06	0.5	2.76	CAM2	4.11	3530	7.78	-62	16.8	dark grey
11:09	1.1	2.77	"	1.25	3820	7.74	-112	17.1	HC odour, Black, mod turb
11:12	1.7	2.77	"	0.78	3990	7.73	-145	17.3	
11:15	2.3	"	"	0.42	3100	7.72	-162	17.2	
11:18	2.9	↓	↓	0.32	4080	7.71	-170	17.3	
11:21	3.5	↓	↓	0.29	4100	7.71	-176	17.4	
11:24	4.1	↓	↓	0.21	4100	7.71	-177	17.5	Slight odour,
11:	Stable & sampled								
<b>Acceptable Parameter Range:</b>				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
<b>Analytes Sampled for:</b>		<b>Bottles Collected</b>				<b>QA/QC Information</b>		<b>Field Comments</b>	
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2	x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.	
Metals		3	x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1	x 100 mL Amber				
60 mL		1	125 sulfate	1	60 nitrates				
		1	250 sulfate						
<b>Approval and Distribution</b>									
Fieldwork Staff Signature: [Signature]		Date: 14/7/17		Checker Name and Signature: _____		Date: _____			
Project Manager Signature: _____		Date: _____		Distribution: Project Central File					



**FQM - Groundwater Sampling and Purging Record**

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <u>GW70</u>					
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date:					
General Bore Information				Parameter Info.		Decontamination		Sampling Method		Hydrasleeve Info.	
Date of GW Level: <u>13/07/17</u>	Bore Radius (mm):	Chem Kit Serial No.: <u>FLM90UR</u>	<input checked="" type="checkbox"/> Decontaminated	<input checked="" type="checkbox"/> Low Flow Pump rate: <u>CPM2</u>	Hydrasleeve Size:	Monitoring sequence followed (number in order):					
Depth to GW (m-pvc): <u>1.405</u>	Screen Interval (m):	Chem Kit Model:	<input type="checkbox"/> Dedicated	Intake depth:	Hydrasleeve Type:						
Bore Depth (m-pvc):	Casing Radius (mm):	Corrected Redox: Y / N	<input checked="" type="checkbox"/> Disposable	<input type="checkbox"/> Bailer	<input type="checkbox"/> Hydrasleeve	Sampling Depth (m-pvc):	Gauging				
Depth to Product (m-pvc):	Cover Type (gatic/stick up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)	<input type="checkbox"/> Peristaltic Pump	<input type="checkbox"/> Waterra	Hydrasleeve Install time:	Hydrasleeve in				
Product Thickness (m):	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Other (specify)		Sampling Start Time:	Hydrasleeve out				
	Key Type (if applicable):	<input type="checkbox"/> Retrieved					Parameters				
Calculated bore volume (L):	Includes/ excludes bore annulus (circle)	# purge volumes removed:	Total purged volume (L):								
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
11:09	0.60	1.43	CPM2	1.47	569	6.82	-3	16.70	Yellow, moderate turbidity, no odour		
11:12	1.20	1.43	CPM2	0.90	533	6.88	-17	16.60	as above		
11:15	1.80	1.43	CPM2	0.93	531	6.90	-17	16.60	as above		
11:18	2.4	1.43	CPM2	0.58	528	6.87	-24	16.40	" "		
11:21	3.00	1.43	CPM2	0.53	530	6.82	-22	16.30	" "		
11:24	3.60	1.43	CPM2	0.48	526	6.82	-23	16.30	" "		
11:27	4.20	1.43	CPM2	0.49	523	6.82	-21	16.20	" "		
	Parameters		stable	Well		Sampled					
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments			
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	x 60 mL metals (HNO <sub>3</sub> )				Bore volume calculation, bore condition, fate of tubing, redox correction etc.			
1	9	3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	x 100 mL Amber	x 250 mL Plastic							
			1 Yellow	1 purple 1 orange							
Approval and Distribution											
Fieldwork Staff Signature: <u>[Signature]</u>		Date: <u>13/07/17</u>		Checker Name and Signature: _____			Date: _____				
Project Manager Signature: _____		Date: _____		Distribution: Project Central File							



# FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: CW 72			
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 14/07/17			
<b>General Bore Information</b>				<b>Parameter Info.</b>		<b>Decontamination</b>			
Date of GW Level: 14/07/17		Bore Radius (mm): 90mm		Chem Kit Serial No.: 90FLMV		<input checked="" type="checkbox"/> Decontaminated			
Depth to GW (m-pvc): 2.582		Screen Interval (m):		Chem Kit Model: 90ELMVX		<input checked="" type="checkbox"/> Dedicated			
Bore Depth (m-pvc):		Casing Radius (mm):		Corrected Redox: Y / N		<input checked="" type="checkbox"/> Disposable			
Depth to Product (m-pvc):		Cover Type (Ballo stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)			
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input checked="" type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra			
		Key Type (if applicable): Allen		<input type="checkbox"/> Retrieved		<input checked="" type="checkbox"/> Other (specify) SUBMERGIBLE			
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):			
<b>Water Quality Parameters</b>									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
14:47	0.3	2.551	CLM3	2.41	907	6.45	-12	15.9	Dark brown, highly turbid, no odour or taste. Extremely fine sand clogging pump - PSI up to 30.
14:50	1.2	2.543	" "	0.66	926	6.12	27	17.2	
14:53	2.1	2.529	" "	0.31	919	6.15	26	17.3	
14:56	3.0	2.529	" "	0.23	913	6.18	22	17.2	
14:59	3.9	2.539	" "	0.13	909	6.21	15	17.3	
15:02	4.8	2.552	" "	0.10	905	6.30	0	17.3°C	
15:05	5.7	2.558	" "	0.06	901	6.45	-16	17.1°C	
15:08	6.6	2.555	" "	0.06	899	6.43	-21	17.0°C	
15:11	7.5	2.527	" "	0.11	899	6.38	-18	16.8°C	
				5 SAMPLED					
<b>Acceptable Parameter Range:</b>				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
<b>Analytes Sampled for:</b>		<b>Bottles Collected</b>			<b>QA/QC Information</b>		<b>Field Comments</b>		
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.		
		x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	x 100 mL Amber	x 250 mL Plastic					
		1 x sulphide	1 x purple						
		1 x sulphide	1 x 500 mL bottle						
<b>Approval and Distribution</b>									
Fieldwork Staff Signature:		Date: 14/07/17		Checker Name and Signature: _____			Date: _____		
Project Manager Signature: _____		Date: _____		Distribution: Project Central File					



**FQM - Groundwater Sampling and Purging Record**



Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <u>GW73</u>			
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: <u>13/07/17</u>			
<b>General Bore Information</b>				<b>Parameter Info.</b>		<b>Decontamination</b>			
Date of GW Level: <u>13/07/17</u>		Bore Radius (mm):		Chem Kit Serial No.: <u>F14190</u>		<input checked="" type="checkbox"/> Decontaminated			
Depth to GW (m-pvc): <u>2.711</u>		Screen Interval (m):		Chem Kit Model:		<input type="checkbox"/> Dedicated			
Bore Depth (m-pvc):		Casing Radius (mm):		Corrected Redox: Y / N		<input checked="" type="checkbox"/> Disposable			
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)			
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve			
Key Type (if applicable):		Key Type (if applicable):		<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra			
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):			
<b>Water Quality Parameters</b>									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
12:15	0.60	1.75	CPM2	1.18	1569	7.08	-51	17.30	light grey low turb, no odour
12:18	1.20	1.74	CPM2	0.18	1543	7.08	-76	19.10	as above
12:21	1.80	1.74	CPM2	0.15	1526	7.09	-77	19.10	" "
12:24	2.40	1.74	CPM2	0.13	1490	7.11	-82	19.30	" "
12:27	3.00	1.74	CPM2	0.11	1477	7.12	-84	19.30	" "
12:30	3.60	1.74	CPM2	0.09	1466	7.12	-94	19.40	" "
12:34	4.20	1.74	CPM2	0.08	1464	7.12	-100	19.50	" "
12:37	4.80	1.74	CPM2	0.12	1463	7.12	-105	19.40	" "
12:40	5.4	1.74	CPM2	0.09	1459	7.09	-107	19.50	" "
Parameters				Stable Well sampled					
<b>Acceptable Parameter Range:</b>				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
<b>Analytes Sampled for:</b>		<b>Bottles Collected</b>				<b>QA/QC Information</b>		<b>Field Comments</b>	
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)		x 60 mL Ferrous		x 60 mL metals (HNO <sub>3</sub> )		Bore volume calculation, bore condition, fate of tubing, redox correction etc.	
1	11	3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )		1 x 100 mL Amber		1 x 250 mL Plastic			
				1 orange		1 yellow			
				2 PEAS		1 purple			
<b>Approval and Distribution</b>									
Fieldwork Staff Signature: <u>[Signature]</u>		Date: <u>13/07/17</u>		Checker Name and Signature: _____			Date: _____		
Project Manager Signature: _____		Date: _____		Distribution: Project Central File					



# FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: GW74			
Client: EPA		Project Location:		Fieldwork Staff: JM/BP/BH		Sample Date: 14/7/17			
General Bore Information				Parameter Info.		Decontamination			
Date of GW Level: 10/7/17		Bore Radius (mm): 50		Chem Kit Serial No.: 90FLMV		<input checked="" type="checkbox"/> Decontaminated			
Depth to GW (m-pvc):		Screen Interval (m): 1		Chem Kit Model: D		<input type="checkbox"/> Dedicated			
Bore Depth (m-pvc):		Casing Radius (mm): 1		Corrected Redox: Y / (N)		<input checked="" type="checkbox"/> Disposable			
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)			
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra			
		Key Type (if applicable): Hex		<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Other (specify)			
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):			
Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
8:50	0.5	2.370	CPM2	2.04	3140	6.82	-49	14.8	NO odour, greyish brown, mod turb
8:53	1.1	"	"	0.76	2376	6.86	-52	15.4	
8:56	1.7	"	"	0.72	2220	6.88	-61	16.0	
8:59	2.3	"	"	0.42	2005	6.88	-65	16.8	
9:02	2.9	"	"	0.48	1963	6.89	-68	17.0	
9:05	3.5	"	"	0.31	1919	6.89	-70	17.2	
9:08	4.1	"	"	0.18	1888	6.89	-72	17.4	
stable & sampled									
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments	
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	x 60 mL metals (HNO <sub>3</sub> )	QC312 - dup QC313 - trip		Bore volume calculation, bore condition, fate of tubing, redox correction etc.  extra amber for triplicate		
3 metals		9 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	4 x 100 mL Amber	3 x 250 mL Plastic					
60 mL		3 125 mL IHC	3 60 mL H <sub>2</sub> O						
		3 250 mL IHC							
Approval and Distribution									
Fieldwork Staff Signature:		Date: 14/7/17		Checker Name and Signature:		Date:			
Project Manager Signature:		Date:		Distribution: Project Central File					



# FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

<b>Project Name:</b> Fishermen's Bend	<b>Project Number:</b> 60537182	<b>PM Name:</b> Averyll Coyne	<b>Bore ID:</b> GW75
<b>Client:</b> EPA	<b>Project Location:</b>	<b>Fieldwork Staff:</b> JM BP BH	<b>Sample Date:</b> 14/07/17
<b>General Bore Information</b>		<b>Decontamination</b>	<b>Well Development or Well Sampling Event? (circle)</b>
<b>Date of GW Level:</b> 14/07/17	<b>Bore Radius (mm):</b> 50mm	<input checked="" type="checkbox"/> Decontaminated	<input checked="" type="checkbox"/> Low Flow Pump rate: 16
<b>Depth to GW (m-pvc):</b> 2.829	<b>Screen Interval (m):</b>	<input checked="" type="checkbox"/> Dedicated	<b>Intake depth:</b> 4
<b>Bore Depth (m-pvc):</b>	<b>Casing Radius (mm):</b>	<input checked="" type="checkbox"/> Disposable	<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve
<b>Depth to Product (m-pvc):</b>	<b>Cover Type (gate/stick up):</b>	<input type="checkbox"/> Other (specify)	<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra
<b>Product Thickness (m):</b>	<b>Bore Locked (YES/NO):</b>	<b>Parameter method:</b> <input type="checkbox"/> Downhole <input checked="" type="checkbox"/> Retrieved	<input type="checkbox"/> Other (specify) <u>SUBMERSIBLE</u>
<b>Calculated bore volume (L):</b>	<b>Includes/ excludes bore annulus (circle)</b>	<b># purge volumes removed:</b>	<b>Total purged volume (L):</b>

Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or $\mu$ S/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
13:55	0.3	2.829	2Lm3	4.09	758	6.63	29mV	14.2	Dark brown, highly turbid no clear or clean.
13:58	1.2	2.838	" "	1.44	772	6.58	30	15.7°C	Very fine sand keeps blocking pump head to
14:01	2.1	2.822	" "	0.84	776	6.63	22	16.3°C	turn up PSI to 30
14:04	3.0	2.829	" "	0.54	803	6.76	7	16.6°C	Low turbidity/transparency
14:07	3.9	2.828	" "	0.46	822	6.82	-3	16.7°C	
14:10	4.8	2.830	" "	0.49	817	6.85	-5	16.7°C	
14:13	5.7		" "	0.48	821	6.83	-5	16.7°C	
SAMPLED									

**Acceptable Parameter Range:**  $\pm 10\%$  DO,  $\pm 3\%$  E.C.,  $\pm 0.05$  pH,  $\pm 10$  mV Redox,  $\pm 0.2$  °C Temp,  $\pm 10\%$  turbidity (if using a turbidity meter)

<b>Analytes Sampled for:</b>		<b>Bottles Collected</b>		<b>QA/QC Information</b>	<b>Field Comments</b>
<b>Field Filtered:</b>	<b>Unfiltered:</b>	x 40 mL Vial (HCl)	x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )	Bore volume calculation, bore condition, fate of tubing, redox correction etc.
x metals		x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	x 100 mL Amber	x 250 mL Plastic	
		1 x sulphide	1 x purple		
		1 x red plate	1 x 500mL plate		

**Approval and Distribution**

	14/07/17		
<b>Fieldwork Staff Signature</b>	<b>Date</b>	<b>Checker Name and Signature</b>	<b>Date</b>
<b>Project Manager Signature</b>	<b>Date</b>	<b>Distribution:</b> Project Central File	



ANZ  
**FQM - Groundwater Sampling and Purging Record**

park on grass  
 # have fm barricade  
 off near road driveway entry  
 Standard Suite  
 AE M  
 Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <b>GW76</b>					
Client: EPA		Project Location:		Fieldwork Staff: <b>JMB/BH</b>		Sample Date: <b>13/7/17</b>					
General Bore Information			Parameter Info.		Decontamination		Well Development or Well Sampling Event? (circle)				
Date of GW Level: <b>10/7/17</b>	Bore Radius (mm): <b>50</b>	Chem Kit Serial No.: <b>90FLMV</b>	<input checked="" type="checkbox"/> Decontaminated		<input checked="" type="checkbox"/> Low Flow Pump rate: <b>CPM2</b>		Hydrasleeve Size:				
Depth to GW (m-pvc): <b>2.089</b>	Screen Interval (m):	Chem Kit Model: <b>D</b>	<input type="checkbox"/> Dedicated		Intake depth: <b>0.56m</b>		Hydrasleeve Type:				
Bore Depth (m-pvc): <b>4.85</b>	Casing Radius (mm):	Corrected Redox: <b>Y / (N)</b>	<input checked="" type="checkbox"/> Disposable		<input type="checkbox"/> Bailer		<input type="checkbox"/> Hydrasleeve				
Depth to Product (m-pvc):	Cover Type (gatic/stick up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Peristaltic Pump		<input type="checkbox"/> Waterra				
Product Thickness (m): <b>2.8</b>	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole	<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Other (specify)		Sampling Depth (m-pvc):				
Calculated bore volume (L): <b>14</b>	Key Type (if applicable): <b>hex</b>	Includes/ excludes bore annulus (circle)		# purge volumes removed: <b>3</b>	Total purged volume (L): <b>42</b>		Monitoring sequence followed (number in order):				
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
13:40	0.5	2.09	CPM2	4.15	864	6.70	18	15.3	no odour, light brown, low turbidity		
13:43	1.1	2.09	CPM2	2.59	1535	6.76	-1	16.2			
13:46	1.7	↓	↓	0.97	2008	7.03	-27	17.0			
13:49	2.3	↓	↓	0.40	2152	7.09	-56	17.6			
13:52	2.9	↓	↓	0.20	2137	7.07	-62	17.7			
13:55	3.5	↓	↓	0.08	2101	7.06	-63	17.7			
13:58	4.1	↓	↓	0.09	2083	7.06	-65	17.7			
			stable # sampled								
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
Analytes Sampled for:		Bottles Collected			QA/QC Information		Field Comments				
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2	x 60 mL metals (HNO <sub>3</sub> )	Bore volume calculation, bore condition, fate of tubing, redox correction etc.					
Metals 60mL		3	x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1	x 100 mL Amber					1	x 250 mL Plastic
		1	125 sulfite	1	60 nitrate						
		1	250 sulfide								
Approval and Distribution											
Fieldwork Staff Signature: <b>ER</b>		Date: <b>13/7/17</b>		Checker Name and Signature		Date					
Project Manager Signature		Date		Distribution: Project Central File							



ensure the <sup>car park</sup> is empty.  
Standard suite



Q4AN(EV)-405-FM1

ANZ  
FQM - Groundwater Sampling and Purging Record

Project Name: Fishermen's Bend	Project Number: 60537182	PM Name: Averyll Coyne	Bore ID: GW 77
Client: EPA	Project Location:	Fieldwork Staff: JM BP BH	Sample Date: 13/7/17
<b>General Bore Information</b>		<b>Parameter Info.</b>	<b>Decontamination</b>
Date of GW Level: 10/7/17	Bore Radius (mm): 50	Chem Kit Serial No.: 90FLMV	<input checked="" type="checkbox"/> Decontaminated
Depth to GW (m-pvc): 1.960	Screen Interval (m):	Chem Kit Model: D	<input type="checkbox"/> Dedicated
Bore Depth (m-pvc): 4.91	Casing Radius (mm):	Corrected Redox: Y / (N)	<input checked="" type="checkbox"/> Disposable
Depth to Product (m-pvc):	Cover Type (gatic/stick-up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)
Product Thickness (m): 3	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole	
Calculated bore volume (L): 15	Key Type (if applicable): Hex	<input checked="" type="checkbox"/> Retrieved	
Includes/ excludes bore annulus (circle)		# purge volumes removed: 3	Total purged volume (L): 45

Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
12.43	0.5	1.965	CPM2	9.21	449	7.33	-3	15.8	no odour, light brown, low turb
12.46	1.1	"	"	0.99	578	7.37	-40	16.8	
12.49	1.7	"	"	0.66	564	7.36	-51	17.6	
12.52	2.3	"	"	0.48	567	7.34	-60	17.1	
12.55	2.9	"	"	0.40	580	7.34	-65	17.1	
12.58	3.5	"	"	0.39	599	7.31	-72	17.0	
13.01	4.1	"	"	0.34	613	7.31	-76	17.0	
13.04	4.7	"	"	0.37	622	7.30	-79	17.1	
Stable & Sampled									

Acceptable Parameter Range: ± 10% DO, ± 3% E.C., ± 0.05 pH, ± 10 mV Redox, ± 0.2 °C Temp, ± 10% turbidity (if using a turbidity meter)

Analytes Sampled for:		Bottles Collected				QA/QC Information	Field Comments
Field Filtered: Metals 60ML	Unfiltered:	3 x 40 mL Vial (HCl)	1 x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )	1 x 250 mL Plastic		Bore volume calculation, bore condition, fate of tubing, redox correction etc.
		1 x 125 Sulfide	1 x 60 Nitrate				
		1 x 250 Sulfite					

Approval and Distribution

Fieldwork Staff Signature: [Signature] Date: 13/7/17

Checker Name and Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Project Manager Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Distribution: Project Central File



**FQM - Groundwater Sampling and Purging Record**

③  
Standard.



Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Avenyll Coyne		Bore ID: GW82					
Client: EPA		Project Location: Employment Pct		Fieldwork Staff: JMB/BM		Sample Date: 13/7/17					
General Bore Information				Parameter Info.		Decontamination					
Date of GW Level: 10/7/17		Bore Radius (mm): 50		Chem Kit Serial No.: 90FLMV		<input checked="" type="checkbox"/> Decontaminated					
Depth to GW (m-pvc): 1.625		Screen Interval (m):		Chem Kit Model: D		<input type="checkbox"/> Dedicated					
Bore Depth (m-pvc): 4.510		Casing Radius (mm):		Corrected Redox: Y / (N)		<input checked="" type="checkbox"/> Disposable					
Depth to Product (m-pvc):		Cover Type (gatic/stick-up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)					
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra					
Calculated bore volume (L): 2.9 x 5 = 14.4		Key Type (if applicable): Hex		<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Other (specify)					
Includes/ excludes bore annulus (circle)		# purge volumes removed: 3		Total purged volume (L): 43							
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
11.16	0.5	1.88	CPM2	2.95	3110	7.13	28	16.0	no odour, light brown, low turb		
11.19	1.1	1.690	"	2.23	3290	7.07	-1	16.2			
11.22	1.7			1.25	3220	7.07	-14	16.3			
11.25	2.3			1.07	3250	7.07	-22	16.2			
11.28	2.9			0.86	3250	7.07	-30	16.1			
11.31	3.5			0.85	3300	7.08	-38	16.0			
11.34	4.1			0.95	3300	7.08	-44	16.0			
11.37	4.7			0.82	3300	7.08	-50	15.9			
Stable & sampled											
Acceptable Parameter Range: ± 10% DO, ± 3% E.C., ± 0.05 pH, ± 10 mV Redox, ± 0.2 °C Temp, ± 10% turbidity (if using a turbidity meter)											
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments			
Field Filtered: metals 60mL	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2	x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.			
		3	x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1	x 100 mL Amber					1	x 250 mL Plastic
		1	125 sulfite	1	60 nitrate						
		1	250 sulfide								
Approval and Distribution											
Fieldwork Staff Signature: [Signature]		Date: 13/7/17		Checker Name and Signature		Date					
Project Manager Signature		Date		Distribution: Project Central File							



# FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <i>CW80</i>				
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: <i>14/07/17</i>				
General Bore Information			Parameter Info.		Decontamination	Sampling Method		Well Development or Well Sampling Event? (circle)		
Date of GW Level: <i>14/07/17</i>	Bore Radius (mm): <i>50mm</i>	Chem Kit Serial No.: <i>ADFWW</i>	<input checked="" type="checkbox"/> Decontaminated		<input checked="" type="checkbox"/> Low Flow Pump rate: <i>15</i>		Hydrasleeve Size:	Monitoring sequence followed (number in order):		
Depth to GW (m-pvc): <i>1.806</i>	Screen Interval (m):	Chem Kit Model:	<input type="checkbox"/> Dedicated		Intake depth: <i>3</i>		Hydrasleeve Type:			
Bore Depth (m-pvc):	Casing Radius (mm):	Corrected Redox: Y / N	<input checked="" type="checkbox"/> Disposable		<input type="checkbox"/> Bailor <input type="checkbox"/> Hydrasleeve		Sampling Depth (m-pvc):	Gauging		
Depth to Product (m-pvc):	Cover Type: <i>gate/stick up</i>	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra		Hydrasleeve Install time:	Hydrasleeve in		
Product Thickness (m):	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole	<input type="checkbox"/> Retrieved		<input checked="" type="checkbox"/> Other (specify) <i>SUBMERGIBLE</i>		Sampling Start Time:	Hydrasleeve out		
	Key Type (if applicable): <i>AUER</i>							Parameters		
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):				
Water Quality Parameters										
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity	
<i>11:38</i>	<i>0.3</i>	<i>1.804</i>	<i>3.0</i>	<i>0.30</i>	<i>113/15</i>	<i>6.93</i>	<i>-26</i>	<i>16.6°C</i>	<i>pale hazy, med turbidity, no odour or shear.</i>	
<i>11:41</i>	<i>1.2</i>	<i>1.804</i>	<i>"</i>	<i>0.37</i>	<i>1124</i>	<i>6.89</i>	<i>-26</i>	<i>17.2°C</i>		
<i>11:44</i>	<i>2.1</i>	<i>1.807</i>	<i>"</i>	<i>0.42</i>	<i>1122</i>	<i>6.89</i>	<i>-29</i>	<i>17.6°C</i>		
<i>11:47</i>	<i>3.0</i>	<i>1.811</i>	<i>"</i>	<i>0.29</i>	<i>1122</i>	<i>6.90</i>	<i>-37</i>	<i>17.6°C</i>		
<i>11:50</i>	<i>3.9</i>	<i>1.804</i>	<i>"</i>	<i>0.23</i>	<i>1123</i>	<i>6.90</i>	<i>-43</i>	<i>17.6°C</i>		
<i>11:53</i>	<i>4.8</i>	<i>"</i>	<i>"</i>	<i>0.19</i>	<i>1124</i>	<i>6.90</i>	<i>-49</i>	<i>17.5°C</i>		
				<i>3 AMP CEP</i>						
<b>Acceptable Parameter Range:</b>				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)	
Analytes Sampled for:		Bottles Collected			QA/QC Information		Field Comments			
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.			
<i>1 x metals</i>		3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	x 250 mL Plastic						
		1 x sulphide	1 x purple							
		1 x sulphide	1 x second part							
Approval and Distribution										
Fieldwork Staff Signature: <i>[Signature]</i>		Date: <i>14/07/17</i>		Checker Name and Signature: _____		Date: _____				
Project Manager Signature: _____		Date: _____		Distribution: Project Central File						



# FQM - Groundwater Sampling and Purging Record

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: <b>GW81</b>			
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: <b>14/07/17</b>			
<b>General Bore Information</b>				<b>Parameter Info.</b>		<b>Decontamination</b>			
Date of GW Level: <b>14/07/17</b>	Bore Radius (mm): <b>50mm</b>	Chem Kit Serial No.: <b>90FCMV</b>	<input checked="" type="checkbox"/> Decontaminated		<b>Sampling Method</b>				
Depth to GW (m-pvc): <b>2.213</b>	Screen Interval (m):	Chem Kit Model:	<input checked="" type="checkbox"/> Dedicated		<input checked="" type="checkbox"/> Low Flow Pump rate: <b>15</b>				
Bore Depth (m-pvc):	Casing Radius (mm):	<b>Corrected Redox: Y I N</b>	<input checked="" type="checkbox"/> Disposable		Intake depth: <b>5</b>				
Depth to Product (m-pvc):	Cover Type (gate/stick up):	(The correction to apply is probe dependent)	<input checked="" type="checkbox"/> Other (specify)		<input checked="" type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve				
Product Thickness (m):	Bore Locked (YES/NO):	<b>Parameter method: <input type="checkbox"/> Downhole <input checked="" type="checkbox"/> Retrieved</b>			<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra				
Calculated bore volume (L):	Key Type (if applicable): <b>Allen</b>				<input checked="" type="checkbox"/> Other (specify) <b>SUBMERGIBLE</b>				
Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):					
<b>Water Quality Parameters</b>									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
10:51	0.3	2.202	QMB3	1.55	1530	6.71	-86	16.1°C	light brown, med turbidity, no odor or taste.
10:54	1.2	2.205	" "	0.64	1548	6.72	-77	17.3°C	
10:57	2.1	2.202	" "	0.47	1543	6.58	-74	17.6°C	
11:00	3.0	2.203	" "	0.37	1532	6.65	-72	17.8°C	
11:03	3.9	2.215	" "	0.27	1531	6.73	-74	17.9°C	
11:06	4.8	2.211	" "	0.20	1532	6.76	-76	18.0°C	
11:09	5.7	2.205		0.20	1532	6.77	-77	17.9°C	
				<b>SAMPLED</b>					
<b>Acceptable Parameter Range:</b>				±10%	±3%	±0.05	±10 mV	±0.2 °C	
<b>Analytes Sampled for:</b>		<b>Bottles Collected</b>				<b>QA/QC Information</b>		<b>Field Comments</b>	
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )			± 10% turbidity (if using a turbidity meter)		
1 x metals		3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	x 250 mL Plastic					
		1 x sulphide	1 x purple	1 x 500 mL Port					
		1 x sulphate	2 x purple						
<b>Approval and Distribution</b>									
Fieldwork Staff Signature:		Date: <b>14/07/17</b>		Checker Name and Signature: _____		Date: _____			
Project Manager Signature: _____		Date: _____		Distribution: Project Central File					



**FQM - Groundwater Sampling and Purging Record**

<b>Project Name:</b>	Fishermen's Bend	<b>Project Number:</b>	60537182	<b>PM Name:</b>	Averyll Coyne	<b>Bore ID:</b>	DAMW5-02
<b>Client:</b>	EPA	<b>Project Location:</b>		<b>Fieldwork Staff:</b>	JM BP BH	<b>Sample Date:</b>	12/07/17
<b>General Bore Information</b>				<b>Parameter Info.</b>		<b>Well Development or Well Sampling Event? (circle)</b>	
Date of GW Level:	12/07/17	Bore Radius (mm):		Chem Kit Serial No.:	FLM90VTC	<input checked="" type="checkbox"/> Decontaminated	
Depth to GW (m-pvc):	1.285	Screen Interval (m):		Chem Kit Model:		<input type="checkbox"/> Dedicated	
Bore Depth (m-pvc):		Casing Radius (mm):		<b>Corrected Redox:</b>	Y / N	<input checked="" type="checkbox"/> Disposable	
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)	
Product Thickness (m):		Bore Locked (YES/NO):		<b>Parameter method:</b>	<input type="checkbox"/> Downhole	<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve	
		Key Type (if applicable):			<input checked="" type="checkbox"/> Retrieved	<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra	
						<input type="checkbox"/> Other (specify)	
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):	

Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
14:59	0.60	1.30	CPM2	0.73	616	7.00	-21	15.10	Brown moderate/high turbidity, no odour as above
14:02	1.26	1.30	CPM2	0.15	622	7.19	-71	15.50	
15:05	1.86	1.30	CPM2	0.12	622	7.20	-75	15.50	
15:08	2.40	1.30	CPM2	0.15	624	7.22	-85	15.50	
15:11	3.06	1.30	CPM2	0.12	622	7.29	-100	15.50	
15:14	3.60	1.30	CPM2	0.10	617	7.29	-105	15.50	
15:17	4.20	1.30	CPM2	0.13	618	7.27	-107	15.60	
Parameters stabilized well sampled									

<b>Acceptable Parameter Range:</b>	± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
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<b>Analytes Sampled for:</b>		<b>Bottles Collected</b>				<b>QA/QC Information</b>	<b>Field Comments</b>
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.
1	19	3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	1 x 250 mL Plastic green			
			1 orange	1 yellow			
			2 PFAS	1 purple			

<b>Approval and Distribution</b>			
<i>[Signature]</i>	_____	_____	_____
<b>Fieldwork Staff Signature</b>	<b>Date</b>	<b>Checker Name and Signature</b>	<b>Date</b>
_____	_____	_____	_____
<b>Project Manager Signature</b>	<b>Date</b>	Distribution: Project Central File	



FQM - Groundwater Sampling and Purging Record

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: F3			
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 12/07/17			
General Bore Information				Parameter Info.		Decontamination			
Date of GW Level: 12/07/17		Bore Radius (mm):		Chem Kit Serial No.: FUM90VR		<input checked="" type="checkbox"/> Decontaminated			
Depth to GW (m-pvc): 1.960		Screen Interval (m):		Chem Kit Model:		<input type="checkbox"/> Dedicated			
Bore Depth (m-pvc): 4.73		Casing Radius (mm):		Corrected Redox: Y / N		<input checked="" type="checkbox"/> Disposable			
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)			
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve			
		Key Type (if applicable):		<input checked="" type="checkbox"/> Retrieved		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra			
						<input type="checkbox"/> Other (specify)			
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:		Total purged volume (L):			
Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
13:58	0.60	1.95	CPM2	1.91	981	7.37	-86	16.6	moderate yellow turbidity, no odour
14:01	1.20	1.95	CPM2	0.69	612	6.51	-49	17.80	as above
14:04	1.80	1.95	CPM2	0.38	491	6.14	-15	18.20	"
14:07	2.40	1.95	CPM2	0.21	438	5.89	10	18.40	moderate grey turbidity, no odour
14:10	3.00	1.95	CPM2	0.14	425	5.79	26	18.50	as above
14:13	3.60	1.95	CPM2	0.12	424	5.76	21	18.40	"
14:16	4.20	1.95	CPM2	0.18	423	5.74	22	18.40	"
				Parameters stable, well sampled					
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)
Analytes Sampled for:		Bottles Collected			QA/QC Information		Field Comments		
Field Filtered: 1	Unfiltered: 9	3 x 40 mL Vial (HCl)	1 x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.  PID 0.00		
		3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	1 x 250 mL Plastic					
			1 purple	1 yellow orange					
Approval and Distribution									
Fieldwork Staff Signature: <i>[Signature]</i>		Date: 12/07/17		Checker Name and Signature: _____		Date: _____			
Project Manager Signature: _____		Date: _____		Distribution: Project Central File					



# FQM - Groundwater Sampling and Purging Record



Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Avenyll Coyne		Bore ID: CMO3					
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 12/07/17					
General Bore Information				Parameter Info.		Decontamination		Sampling Method		Well Development or Well Sampling Event? (circle)	
Date of GW Level: 12/07/17	Bore Radius (mm):	Chem Kit Serial No.: ELM90VR	<input checked="" type="checkbox"/> Decontaminated		<input checked="" type="checkbox"/> Low Flow Pump rate: CPM2		Hydrasleeve Size:		Monitoring sequence followed (number in order):		
Depth to GW (m-pvc): 1.909	Screen Interval (m):	Chem Kit Model:	<input type="checkbox"/> Dedicated		Intake depth:		Hydrasleeve Type:				
Bore Depth (m-pvc): 3.45	Casing Radius (mm):	Corrected Redox: Y / N	<input checked="" type="checkbox"/> Disposable		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve		Sampling Depth (m-pvc):		Gauging		
Depth to Product (m-pvc):	Cover Type (gatic/stick up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra		Hydrasleeve Install time:		Hydrasleeve in		
Product Thickness (m):	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole	<input type="checkbox"/> Retrieved		<input type="checkbox"/> Other (specify)		Sampling Start Time:		Hydrasleeve out		
Calculated bore volume (L):	Includes/ excludes bore annulus (circle)	# purge volumes removed:	Total purged volume (L):						Parameters		
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or uS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
8:54	0.6	1.91	CPM2	2.90	1268	7.46	-99	14.7	Low Yellow turb, no odour		
8:57	1.20	1.91	CPM2	1.92	1039	7.54	-124	15.6	as above		
9:00	1.80	1.91	CPM2	2.10	981	7.56	-138	16.30	" "		
9:03	2.40	1.92	CPM2	1.72	956	7.55	-144	16.80	" "		
9:06	3.00	1.92	CPM2	1.79	932	7.52	-148	17.10	" "		
9:09	3.60	1.92	CPM2	1.42	916	7.50	-149	17.30	" "		
9:18	4.2	1.92	CPM2	1.39	910	7.51	-148	17.40	" "		
9:16	4.8	1.92	CPM2	1.29	908	7.49	-146	17.40	" "		
Parameters Stable. Well Sampled											
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments			
Field Filtered: 1	Unfiltered: 9	x 40 mL Vial (HCl)	x 60 mL Ferrous	2 x 60 mL metals (HNO <sub>3</sub> )			Bore volume calculation, bore condition, fate of tubing, redox correction etc.  PID 0				
		2 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	1 x 250 mL Plastic gpc							
			1 orange	1 yellow gpc							
				1 purple							
Approval and Distribution											
Fieldwork Staff Signature: <i>Jack Mull</i>			Date: 12/07/17			Checker Name and Signature			Date		
Project Manager Signature			Date			Distribution: Project Central File					



# FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

<b>Project Name:</b>	Fishermen's Bend	<b>Project Number:</b>	60537182	<b>PM Name:</b>	Averyll Coyne	<b>Bore ID:</b>	GFW02
<b>Client:</b>	EPA	<b>Project Location:</b>		<b>Fieldwork Staff:</b>	JM BP BH	<b>Sample Date:</b>	13/07/17
<b>General Bore Information</b>				<b>Parameter Info.</b>		<b>Decontamination</b>	
Date of GW Level:	13/07/17	Bore Radius (mm):		Chem Kit Serial No.:	FLM90VR	<input checked="" type="checkbox"/> Decontaminated	<input checked="" type="checkbox"/> Low Flow Pump rate:
Depth to GW (m-pvc):	1.558	Screen Interval (m):		Chem Kit Model:		<input type="checkbox"/> Dedicated	Intake depth:
Bore Depth (m-pvc):	2.70	Casing Radius (mm):		<b>Corrected Redox:</b>	Y / N	<input checked="" type="checkbox"/> Disposable	<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)	<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra
Product Thickness (m):		Bore Locked (YES/NO):		<b>Parameter method:</b>	<input type="checkbox"/> Downhole	<input type="checkbox"/> Other (specify)	Hydrasleeve Install time:
		Key Type (if applicable):			<input type="checkbox"/> Retrieved		Sampling Start Time:
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:			Monitoring sequence followed (number in order):
							Gauging
							Hydrasleeve in
							Hydrasleeve out
							Parameters

Water Quality Parameters									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
14:17	0.60	1.68	CPM 2	0.71	2098	7.02	-57	14.00	Grey, High turbidity, no odour as above
14:20	0.90	1.78	CPM 1	0.41	2093	7.03	-56	13.80	
14:23	1.10	1.77	CPM 2/3	0.35	2088	7.04	-57	13.50	
14:26	1.30	1.78	CPM 2/3	0.15	2077	7.07	-64	13.60	
14:29	1.50	1.78	CPM 2/3	0.10	2057	7.08	-69	13.40	
14:32	1.70	1.78	CPM 2/3	0.13	2057	7.08	-72	13.40	
14:35	1.90	1.78	CPM 2/3	0.13	2059	7.08	-77	13.40	
		Parameters		Stable	Well	sampled			

**Acceptable Parameter Range:** ± 10% DO, ± 3% E.C., ± 0.05 pH, ± 10 mV Redox, ± 0.2 °C Temp, ± 10% turbidity (if using a turbidity meter)

<b>Analytes Sampled for:</b>		<b>Bottles Collected</b>			<b>QA/QC Information</b>	<b>Field Comments</b>
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	x 60 mL metals (HNO <sub>3</sub> )		Bore volume calculation, bore condition, fate of tubing, redox correction etc.
1	9	3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1 x 100 mL Amber	1 x 250 mL Plastic		
			1 purple	1 yellow		
				1 orange		

**Approval and Distribution**

Fieldwork Staff Signature: [Signature] Date: 13/07/17

Checker Name and Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Project Manager Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Distribution: Project Central File



# FQM - Groundwater Sampling and Purging Record

Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: MW9A1			
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 12/07/17			
<b>General Bore Information</b>				<b>Parameter Info.</b>		<b>Decontamination</b>			
Date of GW Level: 12/07/17	Bore Radius (mm):	Chem Kit Serial No.: FCM90VR	<input checked="" type="checkbox"/> Decontaminated		<input checked="" type="checkbox"/> Low Flow Pump rate:		<b>Well Development or Well Sampling Event? (circle)</b>		
Depth to GW (m-pvc): 2.304	Screen Interval (m):	Chem Kit Model:	<input type="checkbox"/> Dedicated		Intake depth:				
Bore Depth (m-pvc): 4.91	Casing Radius (mm):	<b>Corrected Redox:</b> Y / N	<input checked="" type="checkbox"/> Disposable		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve		<b>Hydrasleeve info.</b>		
Depth to Product (m-pvc):	Cover Type (gatic/stick up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra		<b>Monitoring sequence followed (number in order):</b>		
Product Thickness (m):	Bore Locked (YES/NO):	<b>Parameter method:</b> <input type="checkbox"/> Downhole			<input type="checkbox"/> Other (specify)		Gauging		
	Key Type (if applicable):	<input checked="" type="checkbox"/> Retrieved					Hydrasleeve in		
Calculated bore volume (L):	Includes/ excludes bore annulus (circle)	# purge volumes removed:			Total purged volume (L):		Hydrasleeve out		
<b>Water Quality Parameters</b>									
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity
10:00	0.60	2.31	CPM2	3.53	1835	7.01	-93	13.90	moderate yellow turb; slight HC odor
10:03	1.20	2.32	CPM2	2.38	2006	6.90	-107	15.90	
10:06	1.80	2.32	CPM2	1.68	2095	6.87	-139	17.80	
10:09	2.4	2.32	CPM2	1.34	2052	6.91	-154	18.30	
10:12	3.00	2.32	CPM2	1.26	2079	6.95	-166	18.40	
10:15	3.60	2.32	CPM2	1.11	2092	6.93	-173	18.60	
10:18	4.20	2.32	CPM2	1.09	2094	6.91	-178	18.60	
10:21	4.80	2.32	CPM2	1.08	2096	6.91	-182	18.60	" "
		Parameters stable		well sampled					" "
<b>Acceptable Parameter Range:</b> ± 10%    ± 3%    ± 0.05    ± 10 mV    ± 0.2 °C									
<b>Analytes Sampled for:</b>		<b>Bottles Collected</b>				<b>QA/QC Information</b>		± 10% turbidity (if using a turbidity meter)	
Field Filtered: 1	Unfiltered: 9	x 40 mL Vial (HCl) 3	x 60 mL Ferrous 2	x 60 mL metals (HNO <sub>3</sub> ) 1					<b>Field Comments</b> Bore volume calculation, bore condition, fate of tubing, redox correction etc.  PID 0.0
		x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> ) 1	x 100 mL Amber 1	x 250 mL Plastic 1					
<b>Approval and Distribution</b>									
Fieldwork Staff Signature: <i>Chris Mink</i>			Date: _____		Checker Name and Signature: _____			Date: _____	
Project Manager Signature: _____			Date: _____		Distribution: Project Central File				



# FQM - Groundwater Sampling and Purging Record

Q4AN(EV)-405-FM1

Project Name: Fishermen's Bend		Project Number: 60537182		Bore ID: MW/371-02						
Client: EPA		Project Location:		PM Name: Averyll Coyne						
				Sample Date: 12/07/17						
				Fieldwork Staff: JM BP BH						
General Bore Information			Parameter Info.		Decontamination					
Date of GW Level: 12/07/17	Bore Radius (mm):	Chem Kit Serial No.: FLM700K	<input checked="" type="checkbox"/> Decontaminated		<input checked="" type="checkbox"/> Low Flow Pump rate:					
Depth to GW (m-pvc): 2.672	Screen Interval (m):	Chem Kit Model:	<input type="checkbox"/> Dedicated		Intake depth:					
Bore Depth (m-pvc): 3.62	Casing Radius (mm):	Corrected Redox: Y / N	<input checked="" type="checkbox"/> Disposable		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve					
Depth to Product (m-pvc):	Cover Type (gatic/stick up):	(The correction to apply is probe dependent)	<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra					
Product Thickness (m):	Bore Locked (YES/NO):	Parameter method: <input type="checkbox"/> Downhole			<input type="checkbox"/> Other (specify)					
	Key Type (if applicable):	<input checked="" type="checkbox"/> Retrieved			Hydrasleeve info.					
Calculated bore volume (L):	Includes/ excludes bore annulus (circle)	# purge volumes removed:	Total purged volume (L):		Monitoring sequence followed (number in order):					
					Gauging					
					Hydrasleeve in					
					Hydrasleeve out					
					Parameters					
Water Quality Parameters										
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity	
11:49	0.60	2.71	CPM2	1.17	1301	7.11	-167	14.70	Yellow brown, moderate turbidity, HC odour as above	
11:52	0.90	2.67	CPM1	0.78	1273	7.11	-175	15.20		
11:55	1.5	2.67	CPM2	0.70	1269	7.11	-178	15.30		
11:58	2.1	2.67	CPM2	0.50	1269	7.12	-184	15.70		
12:01	2.7	2.67	CPM2	0.33	1267	7.12	-190	16.20		
12:04	3.3	2.67	CPM2	0.24	1271	7.11	-193	16.40		
12:07	4.0	2.67	CPM2	0.23	1273	7.10	-196	16.50		
12:10	4.60	2.67	CPM2	0.20	1270	7.09	-196	16.50		
		Parameters Stable		Well Sampled						
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)	
Analytes Sampled for:		Bottles Collected			QA/QC Information		Field Comments			
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)	x 60 mL Ferrous	2	x 60 mL metals (HNO <sub>3</sub> )	Bore volume calculation, bore condition, fate of tubing, redox correction etc.  PID 0.8				
		3	x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )	1	x 100 mL Amber					x 250 mL Plastic
			1 purple	1 yellow	1 orange					
Approval and Distribution										
Fieldwork Staff Signature: <i>Michael Mill</i>		Date: 12/07/17		Checker Name and Signature			Date			
Project Manager Signature		Date		Distribution: Project Central File						



# FQM - Groundwater Sampling and Purging Record

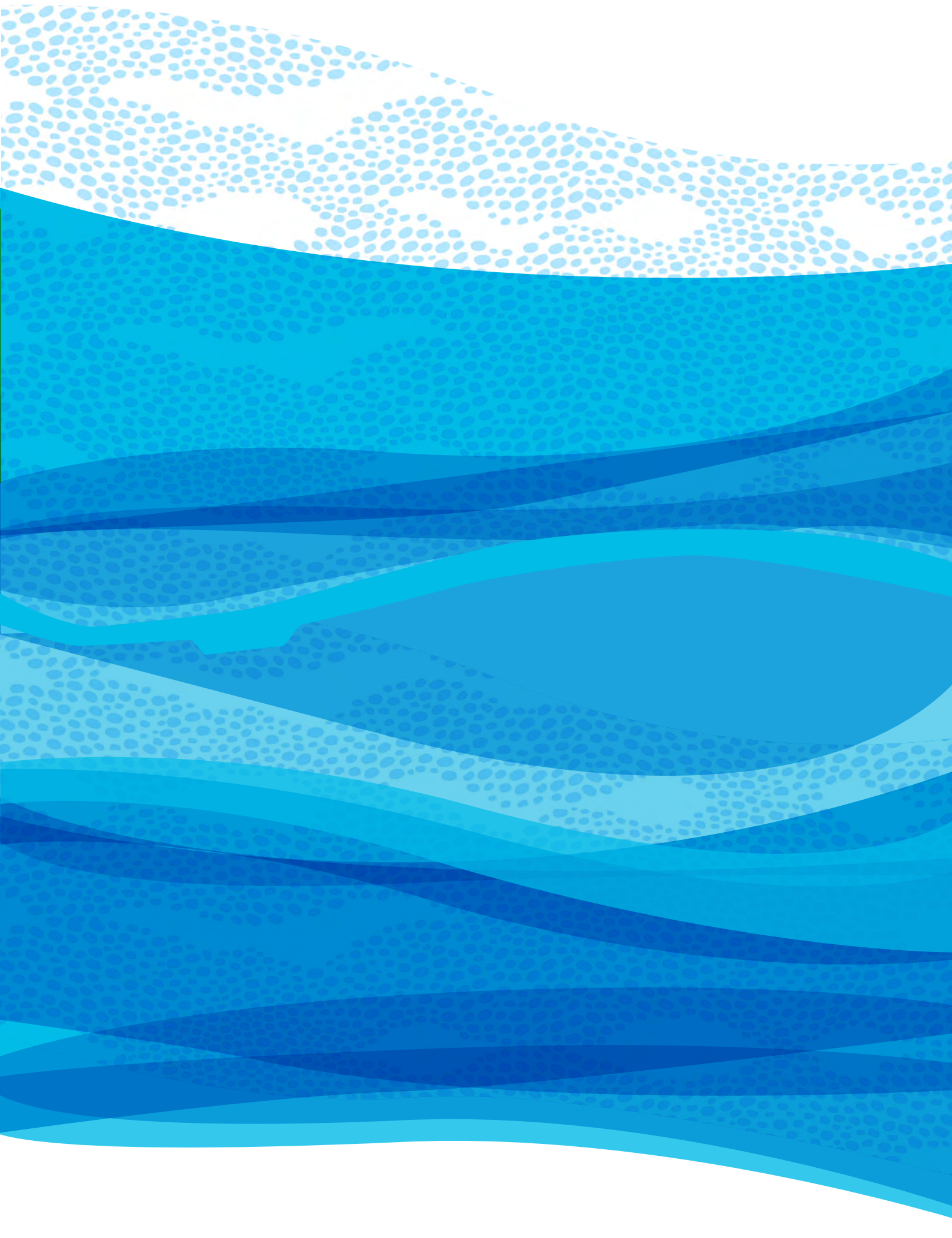
Project Name: Fishermen's Bend		Project Number: 60537182		PM Name: Averyll Coyne		Bore ID: MW1333-02					
Client: EPA		Project Location:		Fieldwork Staff: JM BP BH		Sample Date: 12/07/17					
General Bore Information				Parameter Info.		Decontamination		Sampling Method		Hydrasleeve info.	
Date of GW Level: 12/07/17		Bore Radius (mm):		Chem Kit Serial No.: SIM90VR		<input checked="" type="checkbox"/> Decontaminated		<input checked="" type="checkbox"/> Low Flow Pump rate:		Monitoring sequence followed (number in order):	
Depth to GW (m-pvc): 2.186		Screen Interval (m):		Chem Kit Model:		<input type="checkbox"/> Dedicated		Intake depth:		Hydrasleeve Size:	
Bore Depth (m-pvc): 5.23		Casing Radius (mm):		Corrected Redox: Y / N		<input checked="" type="checkbox"/> Disposable		<input type="checkbox"/> Bailer <input type="checkbox"/> Hydrasleeve		Hydrasleeve Type:	
Depth to Product (m-pvc):		Cover Type (gatic/stick up):		(The correction to apply is probe dependent)		<input type="checkbox"/> Other (specify)		<input type="checkbox"/> Peristaltic Pump <input type="checkbox"/> Waterra		Sampling Depth (m-pvc):	
Product Thickness (m):		Bore Locked (YES/NO):		Parameter method: <input type="checkbox"/> Downhole				<input type="checkbox"/> Other (specify)		Hydrasleeve Install time:	
		Key Type (if applicable):		<input checked="" type="checkbox"/> Retrieved						Sampling Start Time:	
Calculated bore volume (L):		Includes/ excludes bore annulus (circle)		# purge volumes removed:						Total purged volume (L):	
Water Quality Parameters											
Time	Cumulative Vol. Removed (L)	SWL (m-pvc)	Pump Rate	DO (ppm or mg/L)	E.C. (mS/cm or µS/cm)	pH	Redox (mV)	Temp °C	Odour, Colour, Turbidity		
13:01	0.60	2.19	CPM2	1.28	1539	7.45	-114	16.50	High turbidity, grey, no odour		
13:04	1.20	2.19	CPM2	0.80	1597	7.45	-126	17.20	ms above		
13:07	1.80	2.19	CPM2	0.46	1648	7.46	-141	17.80	"		
13:10	2.4	2.19	CPM2	0.30	1659	7.45	-148	18.00	"		
13:13	3.00	2.19	CPM2	0.30	1662	7.45	-151	18.00	"		
Parameters stable well sampled											
Acceptable Parameter Range:				± 10%	± 3%	± 0.05	± 10 mV	± 0.2 °C	± 10% turbidity (if using a turbidity meter)		
Analytes Sampled for:		Bottles Collected				QA/QC Information		Field Comments			
Field Filtered:	Unfiltered:	x 40 mL Vial (HCl)		x 60 mL Ferrous		x 60 mL metals (HNO <sub>3</sub> )		Bore volume calculation, bore condition, fate of tubing, redox correction etc.  PID 0.0			
1	11	3 x 40 mL Vial (H <sub>2</sub> SO <sub>4</sub> )		1 x 100 mL Amber		1 x 250 mL Plastic grey					
				1 orange		1 Purple					
				1 yellow		2 PFAS					
Approval and Distribution											
Fieldwork Staff Signature: <i>Zoe Luke</i>			Date: 12/07/17			Checker Name and Signature			Date		
Project Manager Signature			Date			Distribution: Project Central File					



# Laboratory Transcripts

## APPENDIX C







ANZ

**FQM - Generic Chain of Custody Form**

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: JM BP BH		Destination Laboratory	
PROJECT MANAGER (PM): Averyll Coyne		SITE:		MOBILE: 0409536240		PHONE:	
PROJECT NUMBER & TASK CO 60537182		P.O. NO.:		EMAIL REPORT TO: Averyll Coyne		Eunochus	
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)			
FOR LABORATORY USE ONLY COOLER SEAL (circle appropriate) Intact: Yes No N/A SAMPLE TEMPERATURE CHILLED: Yes No		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:		pH, TDS, TOC TRH (CG-40) PAH Nitrogen oxides/sulphur oxides VOC (ALSEP074-WF) includes BTEXN Ionic chemistry (Na), (Ca), (Mg), (K), (Cl), (HCO3), (NO3), (NO2), (NH3) (PO4), (SO4), (F), (Mn) PFAS - 28 analytes Dissolved metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg) Total Metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)		Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.	
SAMPLE INFORMATION (note: S = Soil, W=Water)				CONTAINER INFORMATION			
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	HOLD
	QC24-11/07/17	W	11/07/17	PM		10	
RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT	
Name: <i>B. Kent</i>	Date: 11/07/17	Name: <i>M.F.</i>	Date: 12/17	Name:	Date:	Con' Note No:	
Of: <i>AECOM</i>	Time: <i>PM</i>	Of: <i>EP/Mat</i>	Time: 2:45	Of:	Time:	Transport Co:	
Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.							

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554049



## Sample Receipt Advice

Company name: **AECOM Aust Pty Ltd Melbourne**

Contact name: Averyll Coyne  
Project ID: 60537182  
COC number: Not provided  
Turn around time: 5 Day  
Date/Time received: Jul 12, 2017 2:23 PM  
Eurofins | mgt reference: **554049**

### Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
  - Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 3.7 degrees Celsius.
  - All samples have been received as described on the above COC.
  - COC has been completed correctly.
  - Attempt to chill was evident.
  - Appropriately preserved sample containers have been used.
  - All samples were received in good condition.
  - Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
  - Appropriate sample containers have been used.
  - Sample containers for volatile analysis received with zero headspace.
  - Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

### Contact notes

If you have any questions with respect to these samples please contact:

Natalie Krasselt on Phone : (+61) (3) 8564 5000 or by e.mail: NatalieKrasselt@eurofins.com

Results will be delivered electronically via e.mail to Averyll Coyne - averyll.coyne@aecom.com.

*Note: A copy of these results will also be delivered to the general AECOM Aust Pty Ltd Melbourne email address.*



**AECOM Aust Pty Ltd Melbourne**  
**Collins Square, Tower 2, Level 11, 727 Collins Street**  
**Docklands**  
**VIC 3008**



**NATA Accredited**  
**Accreditation Number 1261**  
**Site Number 1254**

Accredited for compliance with ISO/IEC 17025 – Testing  
 The results of the tests, calibrations and/or  
 measurements included in this document are traceable  
 to Australian/national standards.

**Attention:** Averyll Coyne

**Report** 554049-W  
 Project name  
 Project ID 60537182  
 Received Date Jul 12, 2017

<b>Client Sample ID</b>			<b>QC204_11/07/17</b>
<b>Sample Matrix</b>			<b>Water</b>
<b>Eurofins   mgt Sample No.</b>			<b>M17-JI14563</b>
<b>Date Sampled</b>			<b>Jul 11, 2017</b>
Test/Reference	LOR	Unit	
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-36 (Total)	0.1	mg/L	< 0.1
<b>BTEX</b>			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	76
<b>Volatile Organics</b>			
1.1-Dichloroethane	0.001	mg/L	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001
2-Butanone (MEK)	0.001	mg/L	< 0.001
2-Propanone (Acetone)	0.001	mg/L	< 0.001
4-Chlorotoluene	0.001	mg/L	< 0.001
4-Methyl-2-pentanone (MIBK)	0.001	mg/L	< 0.001
Allyl chloride	0.001	mg/L	< 0.001



<b>Client Sample ID</b>			<b>QC204_11/07/17</b>
<b>Sample Matrix</b>			<b>Water</b>
<b>Eurofins   mgt Sample No.</b>			<b>M17-JI14563</b>
<b>Date Sampled</b>			<b>Jul 11, 2017</b>
Test/Reference	LOR	Unit	
<b>Volatile Organics</b>			
Benzene	0.001	mg/L	< 0.001
Bromobenzene	0.001	mg/L	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001
Bromoform	0.001	mg/L	< 0.001
Bromomethane	0.001	mg/L	< 0.001
Carbon disulfide	0.001	mg/L	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001
Chloroethane	0.001	mg/L	< 0.001
Chloroform	0.005	mg/L	< 0.005
Chloromethane	0.001	mg/L	< 0.001
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001
Dibromomethane	0.001	mg/L	< 0.001
Dichlorodifluoromethane	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
Iodomethane	0.001	mg/L	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
Methylene Chloride	0.001	mg/L	< 0.001
o-Xylene	0.001	mg/L	< 0.001
Styrene	0.001	mg/L	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001
Trichloroethene	0.001	mg/L	< 0.001
Trichlorofluoromethane	0.001	mg/L	< 0.001
Vinyl chloride	0.001	mg/L	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003
Fluorobenzene (surr.)	1	%	89
4-Bromofluorobenzene (surr.)	1	%	76
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>			
Naphthalene <sup>N02</sup>	0.01	mg/L	< 0.01
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	0.02	mg/L	< 0.02
TRH C6-C10	0.02	mg/L	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1
<b>Polycyclic Aromatic Hydrocarbons</b>			
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Anthracene	0.001	mg/L	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene <sup>N07</sup>	0.001	mg/L	< 0.001



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<b>Sample Matrix</b>			<b>Water</b>
<b>Eurofins   mgt Sample No.</b>			<b>M17-JI14563</b>
<b>Date Sampled</b>			<b>Jul 11, 2017</b>
Test/Reference	LOR	Unit	
<b>Polycyclic Aromatic Hydrocarbons</b>			
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Chrysene	0.001	mg/L	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001
Total PAH*	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	106
p-Terphenyl-d14 (surr.)	1	%	105
<b>Ammonia (as N)</b>			
Ammonia (as N)	0.01	mg/L	0.05
Chloride	1	mg/L	32
Fluoride	0.5	mg/L	0.6
Nitrate (as N)	0.02	mg/L	0.02
pH	0.1	pH Units	7.5
Phosphate total (as P)	0.05	mg/L	0.23
Sulphate (as S)	5	mg/L	65
Sulphate (as SO4)	5	mg/L	190
Sulphite (as S)	0.5	mg/L	< 2.5
Thiosulphate (as S)	1	mg/L	< 5
Total Dissolved Solids	10	mg/L	840
Total Organic Carbon	5	mg/L	22
Total Oxidised Nitrogen	0.05	mg/L	< 0.05
Total Oxidised Sulphur (as S)	10	mg/L	65
<b>Alkalinity (speciated)</b>			
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	650
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10
<b>Parent Set for NOx and NH3</b>			
Nitrite (as N)	0.02	mg/L	< 0.02
<b>Heavy Metals</b>			
Aluminium	0.05	mg/L	22
Aluminium (filtered)	0.05	mg/L	< 0.05
Arsenic	0.001	mg/L	0.077
Arsenic (filtered)	0.001	mg/L	0.002
Cadmium	0.0002	mg/L	0.0013
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	0.064
Chromium (filtered)	0.001	mg/L	< 0.001
Copper	0.001	mg/L	0.084
Copper (filtered)	0.001	mg/L	0.001
Iron	0.05	mg/L	76
Iron (filtered)	0.05	mg/L	0.67
Lead	0.001	mg/L	0.16
Lead (filtered)	0.001	mg/L	< 0.001



<b>Client Sample ID</b>			<b>QC204_11/07/17</b>
<b>Sample Matrix</b>			<b>Water</b>
<b>Eurofins   mgt Sample No.</b>			<b>M17-JI14563</b>
<b>Date Sampled</b>			<b>Jul 11, 2017</b>
Test/Reference	LOR	Unit	
<b>Heavy Metals</b>			
Manganese	0.005	mg/L	1.3
Manganese (filtered)	0.005	mg/L	0.17
Mercury	0.0001	mg/L	0.0010
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	0.067
Nickel (filtered)	0.001	mg/L	0.020
Selenium	0.001	mg/L	0.003
Selenium (filtered)	0.001	mg/L	< 0.001
Zinc	0.005	mg/L	1.0
Zinc (filtered)	0.005	mg/L	0.072
<b>Alkali Metals</b>			
Calcium	0.5	mg/L	230
Magnesium	0.5	mg/L	57
Potassium	0.5	mg/L	17
Sodium	0.5	mg/L	62



## Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C36	Melbourne	Jul 14, 2017	7 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Melbourne	Jul 14, 2017	7 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Melbourne	Jul 14, 2017	7 Day
BTEX and Naphthalene			
BTEX - Method: TRH C6-C40 - LTM-ORG-2010	Melbourne	Jul 14, 2017	14 Day
Volatile Organics - Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	Melbourne	Jul 14, 2017	7 Days
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Water by GCMS	Melbourne	Jul 14, 2017	7 Day
Fluoride - Method: LM-LTM-INO-4300 (Fluoride by Ion Chromatography)	Melbourne	Jul 19, 2017	28 Day
pH - Method: LTM-GEN-7090 pH in water by ISE	Melbourne	Jul 14, 2017	0 Hours
Phosphate total (as P) - Method: APHA 4500-P E. Phosphorous	Melbourne	Jul 19, 2017	28 Day
Total Dissolved Solids - Method: LM-LTM-INO-4110 (Total Dissolved Solids @ 178°C - 182°C)	Melbourne	Jul 14, 2017	7 Day
Total Organic Carbon - Method: APHA 5310B Total Organic Carbon	Melbourne	Jul 14, 2017	28 Day
Parent Set for NOx and NH3	Melbourne	Jul 14, 2017	0 Day
Heavy Metals - Method: LTM-MET-3040 Metals in Waters by ICP-MS	Melbourne	Jul 19, 2017	180 Day
Heavy Metals (filtered) - Method: LTM-MET-3040 Metals in Waters by ICP-MS	Melbourne	Jul 19, 2017	180 Day
Mercury (filtered) - Method: USEPA 7470/1 Mercury	Melbourne	Jul 14, 2017	28 Day
Eurofins   mgt Suite B11			
Ammonia (as N) - Method: APHA 4500-NH3 Ammonia Nitrogen by FIA	Melbourne	Jul 14, 2017	28 Day
Chloride - Method: LTM-INO-4090 Chloride by Discrete Analyser	Melbourne	Jul 14, 2017	28 Day
Nitrate (as N) - Method: APHA 4500-NO3 Nitrate Nitrogen by FIA	Melbourne	Jul 14, 2017	7 Day
Sulphate (as SO4) - Method: LTM-INO-4110 Sulfate by Discrete Analyser	Melbourne	Jul 14, 2017	28 Day
Alkalinity (speciated) - Method: APHA 2320 Alkalinity by Titration	Melbourne	Jul 14, 2017	14 Day
Alkali Metals - Method: USEPA 6010 Alkali Metals	Melbourne	Jul 14, 2017	180 Day
Total Oxidised Sulphur Set (as S)			
Sulphate (as S) - Method: LTM-INO-4110 Sulfate by Discrete Analyser	Melbourne	Jul 14, 2017	28 Day
Sulphite (as S) - Method: LTM-INO-4240 Sulfite & Thiosulfate in Water	Melbourne	Jul 14, 2017	2 Day
Thiosulphate (as S) - Method: LTM-INO-4240 Sulfite & Thiosulfate in Water	Melbourne	Jul 14, 2017	2 Day
Total Oxidised Sulphur (as S)	Melbourne	Jul 13, 2017	2 Day



<b>Company Name:</b> AECOM Aust Pty Ltd Melbourne	<b>Order No.:</b>	<b>Received:</b> Jul 12, 2017 2:23 PM
<b>Address:</b> Collins Square, Tower 2, Level 11, 727 Collins Street Docklands VIC 3008	<b>Report #:</b> 554049	<b>Due:</b> Jul 19, 2017
	<b>Phone:</b> 03 9653 1234	<b>Priority:</b> 5 Day
	<b>Fax:</b> 03 9654 7117	<b>Contact Name:</b> Averyll Coyne
<b>Project Name:</b>		
<b>Project ID:</b> 60537182		

**Eurofins | mgt Analytical Services Manager : Natalie Krasselt**

Sample Detail						Aluminium	Aluminium (filtered)	Arsenic	Arsenic (filtered)	Cadmium	Cadmium (filtered)	Chromium	Chromium (filtered)	Copper	Copper (filtered)	Iron	Iron (filtered)	Lead	Lead (filtered)	Mercury	Mercury (filtered)	Nickel	Nickel (filtered)	pH	Selenium	Selenium (filtered)	Total Dissolved Solids	Total Organic Carbon	Total Oxidised Nitrogen	Zinc	Zinc (filtered)	Polycyclic Aromatic Hydrocarbons	Total Oxidised Sulphur Set (as S)	Eurofins   mgt Suite B11	BTEX and Naphthalene	Volatile Organics	Total Recoverable Hydrocarbons			
<b>Melbourne Laboratory - NATA Site # 1254 &amp; 14271</b>						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	
<b>Sydney Laboratory - NATA Site # 18217</b>																																								
<b>Brisbane Laboratory - NATA Site # 20794</b>																																								
<b>Perth Laboratory - NATA Site # 18217</b>																																								
<b>External Laboratory</b>																																								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID																																			
1	QC204_11/07/17	Jul 11, 2017		Water	M17-JI14563	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		
<b>Test Counts</b>						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	



## Internal Quality Control Review and Glossary

### General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

### Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

**\*\*NOTE:** pH duplicates are reported as a range NOT as RPD

### Units

**mg/kg:** milligrams per kilogram

**mg/L:** milligrams per litre

**ug/L:** micrograms per litre

**ppm:** Parts per million

**ppb:** Parts per billion

**%:** Percentage

**org/100mL:** Organisms per 100 millilitres

**NTU:** Nephelometric Turbidity Units

**MPN/100mL:** Most Probable Number of organisms per 100 millilitres

### Terms

<b>Dry</b>	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
<b>LOR</b>	Limit of Reporting.
<b>SPIKE</b>	Addition of the analyte to the sample and reported as percentage recovery.
<b>RPD</b>	Relative Percent Difference between two Duplicate pieces of analysis.
<b>LCS</b>	Laboratory Control Sample - reported as percent recovery.
<b>CRM</b>	Certified Reference Material - reported as percent recovery.
<b>Method Blank</b>	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
<b>Surr - Surrogate</b>	The addition of a like compound to the analyte target and reported as percentage recovery.
<b>Duplicate</b>	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
<b>USEPA</b>	United States Environmental Protection Agency
<b>APHA</b>	American Public Health Association
<b>TCLP</b>	Toxicity Characteristic Leaching Procedure
<b>COC</b>	Chain of Custody
<b>SRA</b>	Sample Receipt Advice
<b>QSM</b>	Quality Systems Manual ver 5.1 US Department of Defense
<b>CP</b>	Client Parent - QC was performed on samples pertaining to this report
<b>NCP</b>	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
<b>TEQ</b>	Toxic Equivalency Quotient

### QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

### QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.



**Quality Control Results**

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Method Blank</b>							
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
<b>Method Blank</b>							
<b>BTEX</b>							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
<b>Method Blank</b>							
<b>Volatile Organics</b>							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.001			0.001	Pass	
2-Propanone (Acetone)	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.001			0.001	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.001			0.001	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroethane	mg/L	< 0.001			0.001	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.001			0.001	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Dichlorodifluoromethane	mg/L	< 0.001			0.001	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
Methylene Chloride	mg/L	< 0.001			0.001	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	



Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Trichlorofluoromethane	mg/L	< 0.001			0.001	Pass	
Vinyl chloride	mg/L	< 0.001			0.001	Pass	
<b>Method Blank</b>							
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>							
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
<b>Method Blank</b>							
<b>Polycyclic Aromatic Hydrocarbons</b>							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
<b>Method Blank</b>							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chloride	mg/L	< 1			1	Pass	
Fluoride	mg/L	< 0.5			0.5	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.05			0.05	Pass	
Sulphate (as S)	mg/L	< 5			5	Pass	
Sulphate (as SO4)	mg/L	< 5			5	Pass	
Sulphite (as S)	mg/L	< 0.5			0.5	Pass	
Thiosulphate (as S)	mg/L	< 1			1	Pass	
Total Dissolved Solids	mg/L	< 10			10	Pass	
Total Organic Carbon	mg/L	< 5			5	Pass	
Total Oxidised Nitrogen	mg/L	< 0.05			0.05	Pass	
<b>Method Blank</b>							
<b>Alkalinity (speciated)</b>							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO3)	mg/L	< 10			10	Pass	
<b>Method Blank</b>							
<b>Heavy Metals</b>							
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	



Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code	
Iron	mg/L	< 0.05			0.05	Pass		
Iron (filtered)	mg/L	< 0.05			0.05	Pass		
Lead	mg/L	< 0.001			0.001	Pass		
Lead (filtered)	mg/L	< 0.001			0.001	Pass		
Manganese	mg/L	< 0.005			0.005	Pass		
Manganese (filtered)	mg/L	< 0.005			0.005	Pass		
Mercury	mg/L	< 0.0001			0.0001	Pass		
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass		
Nickel	mg/L	< 0.001			0.001	Pass		
Nickel (filtered)	mg/L	< 0.001			0.001	Pass		
Selenium	mg/L	< 0.001			0.001	Pass		
Selenium (filtered)	mg/L	< 0.001			0.001	Pass		
Zinc	mg/L	< 0.005			0.005	Pass		
Zinc (filtered)	mg/L	< 0.005			0.005	Pass		
<b>Method Blank</b>								
<b>Alkali Metals</b>								
Calcium	mg/L	< 0.5			0.5	Pass		
Magnesium	mg/L	< 0.5			0.5	Pass		
Potassium	mg/L	< 0.5			0.5	Pass		
Sodium	mg/L	< 0.5			0.5	Pass		
<b>LCS - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>								
TRH C10-C14	%	98			70-130	Pass		
<b>LCS - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>								
TRH >C10-C16	%	103			70-130	Pass		
<b>LCS - % Recovery</b>								
Sulphate (as S)	%	122			70-130	Pass		
Sulphate (as SO4)	%	122			70-130	Pass		
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>								
TRH C6-C9	M17-JI13171	NCP	%	98		70-130	Pass	
TRH C10-C14	S17-JI11876	NCP	%	103		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>BTEX</b>								
Benzene	M17-JI13171	NCP	%	98		70-130	Pass	
Toluene	M17-JI13171	NCP	%	111		70-130	Pass	
Ethylbenzene	M17-JI13171	NCP	%	116		70-130	Pass	
m&p-Xylenes	M17-JI13171	NCP	%	121		70-130	Pass	
o-Xylene	M17-JI13171	NCP	%	120		70-130	Pass	
Xylenes - Total	M17-JI13171	NCP	%	121		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Volatile Organics</b>								
1.1-Dichloroethene	M17-JI13171	NCP	%	103		70-130	Pass	
1.1.1-Trichloroethane	M17-JI13171	NCP	%	113		70-130	Pass	
1.2-Dichlorobenzene	M17-JI13171	NCP	%	125		70-130	Pass	
1.2-Dichloroethane	M17-JI13171	NCP	%	88		70-130	Pass	
Trichloroethene	M17-JI13171	NCP	%	89		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>								
Naphthalene	M17-JI13171	NCP	%	74		70-130	Pass	
TRH C6-C10	M17-JI13171	NCP	%	88		70-130	Pass	
TRH >C10-C16	S17-JI11876	NCP	%	101		70-130	Pass	



Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>								
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1				
Acenaphthene	M17-JI14417	NCP	%	93		70-130	Pass	
Acenaphthylene	M17-JI14417	NCP	%	101		70-130	Pass	
Anthracene	M17-JI14417	NCP	%	98		70-130	Pass	
Benz(a)anthracene	M17-JI14417	NCP	%	100		70-130	Pass	
Benzo(a)pyrene	M17-JI14417	NCP	%	111		70-130	Pass	
Benzo(b&j)fluoranthene	M17-JI14417	NCP	%	102		70-130	Pass	
Benzo(g,h,i)perylene	M17-JI14417	NCP	%	101		70-130	Pass	
Benzo(k)fluoranthene	M17-JI14417	NCP	%	101		70-130	Pass	
Chrysene	M17-JI14417	NCP	%	97		70-130	Pass	
Dibenz(a,h)anthracene	M17-JI14417	NCP	%	98		70-130	Pass	
Fluoranthene	M17-JI14417	NCP	%	96		70-130	Pass	
Fluorene	M17-JI14417	NCP	%	98		70-130	Pass	
Indeno(1,2,3-cd)pyrene	M17-JI14417	NCP	%	100		70-130	Pass	
Naphthalene	M17-JI14417	NCP	%	98		70-130	Pass	
Phenanthrene	M17-JI14417	NCP	%	94		70-130	Pass	
Pyrene	M17-JI14417	NCP	%	98		70-130	Pass	
<b>Spike - % Recovery</b>								
				Result 1				
Ammonia (as N)	M17-JI14955	NCP	%	98		70-130	Pass	
Chloride	M17-JI15558	NCP	%	87		70-130	Pass	
Nitrate (as N)	M17-JI14955	NCP	%	100		70-130	Pass	
Phosphate total (as P)	M17-JI20354	NCP	%	90		70-130	Pass	
Sulphate (as S)	M17-JI15558	NCP	%	112		70-130	Pass	
Sulphate (as SO4)	M17-JI15558	NCP	%	112		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Alkalinity (speciated)</b>				Result 1				
Bicarbonate Alkalinity (as CaCO3)	M17-JI15559	NCP	%	120		70-130	Pass	
Carbonate Alkalinity (as CaCO3)	M17-JI14953	NCP	%	77		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Parent Set for NOx and NH3</b>				Result 1				
Nitrite (as N)	M17-JI14955	NCP	%	102		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Heavy Metals</b>				Result 1				
Aluminium	B17-JI13366	NCP	%	110		75-125	Pass	
Aluminium (filtered)	M17-JI14526	NCP	%	100		75-125	Pass	
Arsenic	B17-JI13366	NCP	%	97		75-125	Pass	
Arsenic (filtered)	M17-JI14526	NCP	%	103		70-130	Pass	
Cadmium	B17-JI13366	NCP	%	81		75-125	Pass	
Cadmium (filtered)	M17-JI14526	NCP	%	89		70-130	Pass	
Chromium	B17-JI13366	NCP	%	88		75-125	Pass	
Chromium (filtered)	M17-JI14526	NCP	%	93		70-130	Pass	
Copper	B17-JI13366	NCP	%	82		75-125	Pass	
Copper (filtered)	M17-JI14526	NCP	%	89		70-130	Pass	
Iron	M17-JI14152	NCP	%	103		75-125	Pass	
Iron (filtered)	M17-JI14526	NCP	%	97		70-130	Pass	
Lead	B17-JI13366	NCP	%	83		75-125	Pass	
Lead (filtered)	M17-JI14526	NCP	%	89		70-130	Pass	
Manganese	B17-JI13366	NCP	%	77		75-125	Pass	
Manganese (filtered)	M17-JI14526	NCP	%	85		70-130	Pass	
Mercury	B17-JI13366	NCP	%	89		70-130	Pass	
Mercury (filtered)	M17-JI14526	NCP	%	88		70-130	Pass	
Nickel	B17-JI13366	NCP	%	84		75-125	Pass	



Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel (filtered)	M17-JI14526	NCP	%	91			70-130	Pass	
Selenium	B17-JI13366	NCP	%	88			75-125	Pass	
Selenium (filtered)	M17-JI14526	NCP	%	103			70-130	Pass	
Zinc	B17-JI13366	NCP	%	80			75-125	Pass	
Zinc (filtered)	M17-JI14526	NCP	%	89			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>Alkali Metals</b>				Result 1					
Calcium	M17-JI14767	NCP	%	122			70-130	Pass	
Magnesium	M17-JI14767	NCP	%	114			70-130	Pass	
Potassium	M17-JI14767	NCP	%	108			70-130	Pass	
Sodium	M17-JI14767	NCP	%	118			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1	Result 2	RPD			
TRH C6-C9	M17-JI13170	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	M17-JI14416	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M17-JI14416	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M17-JI14416	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
<b>Duplicate</b>									
<b>BTEX</b>				Result 1	Result 2	RPD			
Benzene	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	M17-JI13170	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	M17-JI13170	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
<b>Duplicate</b>									
<b>Volatile Organics</b>				Result 1	Result 2	RPD			
1.1-Dichloroethane	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1-Dichloroethene	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1-Trichloroethane	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2-Trichloroethane	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dibromoethane	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichlorobenzene	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloroethane	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloropropane	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.3-Trichloropropane	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.4-Trimethylbenzene	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichlorobenzene	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichloropropane	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3.5-Trimethylbenzene	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.4-Dichlorobenzene	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Butanone (MEK)	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Propanone (Acetone)	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Chlorotoluene	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Allyl chloride	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromobenzene	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromochloromethane	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromodichloromethane	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromoform	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromomethane	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	



Duplicate								
<b>Volatile Organics</b>				Result 1	Result 2	RPD		
Carbon disulfide	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Carbon Tetrachloride	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chlorobenzene	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chloroethane	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chloroform	M17-JI13170	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Chloromethane	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
cis-1.2-Dichloroethene	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
cis-1.3-Dichloropropene	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibromochloromethane	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibromomethane	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dichlorodifluoromethane	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Iodomethane	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Isopropyl benzene (Cumene)	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Methylene Chloride	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Styrene	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Tetrachloroethene	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
trans-1.2-Dichloroethene	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
trans-1.3-Dichloropropene	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Trichloroethene	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Trichlorofluoromethane	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Vinyl chloride	M17-JI13170	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Duplicate								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1	Result 2	RPD		
Naphthalene	M17-JI13170	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass
TRH C6-C10	M17-JI13170	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
TRH >C10-C16	M17-JI14416	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass
TRH >C16-C34	M17-JI14416	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass
TRH >C34-C40	M17-JI14416	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass
Duplicate								
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1	Result 2	RPD		
Acenaphthene	M17-JI14416	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Acenaphthylene	M17-JI14416	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Anthracene	M17-JI14416	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benz(a)anthracene	M17-JI14416	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(a)pyrene	M17-JI14416	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(b&j)fluoranthene	M17-JI14416	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(g,h,i)perylene	M17-JI14416	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(k)fluoranthene	M17-JI14416	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chrysene	M17-JI14416	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibenz(a,h)anthracene	M17-JI14416	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluoranthene	M17-JI14416	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluorene	M17-JI14416	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Indeno(1.2.3-cd)pyrene	M17-JI14416	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Naphthalene	M17-JI14416	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Phenanthrene	M17-JI14416	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	M17-JI14416	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
Ammonia (as N)	M17-JI15766	NCP	mg/L	64	67	5.0	30%	Pass
Chloride	M17-JI15558	NCP	mg/L	36	35	<1	30%	Pass
Fluoride	M17-JI19924	NCP	mg/L	0.8	0.8	5.8	30%	Pass
Nitrate (as N)	M17-JI15766	NCP	mg/L	1.9	2.2	14	30%	Pass
pH	M17-JI14959	NCP	pH Units	7.0	7.1	pass	30%	Pass
Phosphate total (as P)	M17-JI20059	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass



<b>Duplicate</b>								
				Result 1	Result 2	RPD		
Sulphate (as S)	M17-JI14063	NCP	mg/L	59	60	1.9	30%	Pass
Sulphate (as SO <sub>4</sub> )	M17-JI14063	NCP	mg/L	180	180	1.9	30%	Pass
Sulphite (as S)	M17-Ap22649	NCP	mg/L	< 5	< 5	<1	30%	Pass
Thiosulphate (as S)	M17-Ap22649	NCP	mg/L	< 10	< 10	<1	30%	Pass
Total Dissolved Solids	S17-JI14458	NCP	mg/L	620	620	1.0	30%	Pass
Total Organic Carbon	M17-JI13200	NCP	mg/L	150	150	4.0	30%	Pass
<b>Duplicate</b>								
<b>Alkalinity (speciated)</b>				Result 1	Result 2	RPD		
Bicarbonate Alkalinity (as CaCO <sub>3</sub> )	M17-JI14959	NCP	mg/L	70	67	4.0	30%	Pass
Carbonate Alkalinity (as CaCO <sub>3</sub> )	M17-JI14959	NCP	mg/L	< 10	< 10	<1	30%	Pass
<b>Duplicate</b>								
<b>Parent Set for NO<sub>x</sub> and NH<sub>3</sub></b>				Result 1	Result 2	RPD		
Nitrite (as N)	M17-JI15766	NCP	mg/L	0.23	0.19	19	30%	Pass
<b>Duplicate</b>								
<b>Heavy Metals</b>				Result 1	Result 2	RPD		
Aluminium	B17-JI13366	NCP	mg/L	0.12	0.14	15	30%	Pass
Aluminium (filtered)	M17-JI14526	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Arsenic	B17-JI13366	NCP	mg/L	0.002	0.002	10	30%	Pass
Arsenic (filtered)	M17-JI14526	NCP	mg/L	0.001	0.001	1.0	30%	Pass
Cadmium	B17-JI13366	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Cadmium (filtered)	M17-JI14526	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium	B17-JI13366	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chromium (filtered)	M17-JI14526	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper	B17-JI13366	NCP	mg/L	0.001	0.001	1.0	30%	Pass
Copper (filtered)	M17-JI14526	NCP	mg/L	0.006	0.006	<1	30%	Pass
Iron	M17-JI14958	NCP	mg/L	1.0	0.91	13	30%	Pass
Iron (filtered)	M17-JI14526	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Lead	B17-JI13366	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Lead (filtered)	M17-JI14526	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Manganese	B17-JI13366	NCP	mg/L	0.19	0.19	2.0	30%	Pass
Manganese (filtered)	M17-JI14526	NCP	mg/L	0.15	0.15	<1	30%	Pass
Mercury	B17-JI13366	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Mercury (filtered)	M17-JI14526	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel	B17-JI13366	NCP	mg/L	0.001	0.001	<1	30%	Pass
Nickel (filtered)	M17-JI14526	NCP	mg/L	0.004	0.004	1.0	30%	Pass
Selenium	B17-JI13366	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Selenium (filtered)	M17-JI14526	NCP	mg/L	0.005	0.005	7.0	30%	Pass
Zinc	B17-JI13366	NCP	mg/L	0.009	0.007	28	30%	Pass
Zinc (filtered)	M17-JI14526	NCP	mg/L	0.037	0.037	1.0	30%	Pass
<b>Duplicate</b>								
<b>Alkali Metals</b>				Result 1	Result 2	RPD		
Calcium	M17-JI14767	NCP	mg/L	22	22	1.0	30%	Pass
Magnesium	M17-JI14767	NCP	mg/L	15	15	2.0	30%	Pass
Potassium	M17-JI14767	NCP	mg/L	5.8	5.6	3.0	30%	Pass
Sodium	M17-JI14767	NCP	mg/L	330	330	2.0	30%	Pass



## Comments

### Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

### Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

### Authorised By

Natalie Krasselt	Analytical Services Manager
Alex Petridis	Senior Analyst-Metal (VIC)
Alex Petridis	Senior Analyst-Organic (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)



### Glenn Jackson

#### National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

\* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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ANZ  
**FQM - Generic Chain of Custody Form**

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: JM BP BH <i>Breana Pearce - 0401298865</i>		Destination Laboratory		
PROJECT MANAGER (PM): <i>Averyll Coyne</i>		SITE:		MOBILE: 0409536240		PHONE:		
PROJECT NUMBER & TASK CO 60537182		P.O. NO.:		EMAIL REPORT TO: <i>Averyll Coyne, Jacob Muller</i>		<i>Eurofins/MGT</i>		
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)				
<b>FOR LABORATORY USE ONLY</b> COOLER SEAL (circle appropriate) Intact: Yes No N/A SAMPLE TEMPERATURE CHILLED: Yes No		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:		pH, TDS, TOC TRH (CB-46) PAH Nitrogen oxides/sulfur oxides VOC (ALSEP/PAHF) includes BTEXN Ionic chemistry (Na), (Ca), (Mg), (K), (Cl), (NO3), (NO2), (NH3) (total), (SO4), (F), (Mn) PFAS - 23 analytes Dissolved metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg) Total Metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)		Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for GC or trace LORs etc.		
SAMPLE INFORMATION (note: S = Soil, W=Water) ALS ID    SAMPLE ID    MATRIX    DATE    Time    Type / Code    Total bottles		CONTAINER INFORMATION		HOLD				
	<i>QC309-12/7/17</i>	<i>W</i>	<i>12/7/17</i>		<i>stglass 6x PL</i>	<i>1</i>	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<i>Strong sulfid odor</i>
RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:		METHOD OF SHIPMENT		
Name: <i>Breana Pearce</i>		Name:		Name: <i>[Signature]</i>		Cor' Note No:		
Date: <i>12/7/17</i>		Date:		Date: <i>12/7/17</i>		Transport Co:		
Of: <i>AECOM</i>		Of:		Of: <i>EF</i>				
Time:		Time:		Time: <i>1:54</i>				

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic  
 V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airtight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;  
 F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag  
 Soil Container Codes: Jar = Unpreserved glass jar



## Sample Receipt Advice

Company name: **AECOM Aust Pty Ltd Melbourne**

Contact name: Averyll Coyne  
Project ID: 60537182  
COC number: Not provided  
Turn around time: 5 Day  
Date/Time received: Jul 13, 2017 1:52 PM  
Eurofins | mgt reference: **554208**

### Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
  - Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 4.6 degrees Celsius.
  - All samples have been received as described on the above COC.
  - COC has been completed correctly.
  - Attempt to chill was evident.
  - Appropriately preserved sample containers have been used.
  - All samples were received in good condition.
  - Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
  - Appropriate sample containers have been used.
  - Sample containers for volatile analysis received with zero headspace.
  - Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

### Contact notes

If you have any questions with respect to these samples please contact:

Natalie Krasselt on Phone : (+61) (3) 8564 5000 or by e.mail: NatalieKrasselt@eurofins.com

Results will be delivered electronically via e.mail to Averyll Coyne - averyll.coyne@aecom.com.

*Note: A copy of these results will also be delivered to the general AECOM Aust Pty Ltd Melbourne email address.*







**AECOM Aust Pty Ltd Melbourne**  
**Collins Square, Tower 2, Level 11, 727 Collins Street**  
**Docklands**  
**VIC 3008**



**NATA Accredited**  
**Accreditation Number 1261**  
**Site Number 1254**

Accredited for compliance with ISO/IEC 17025 – Testing  
 The results of the tests, calibrations and/or  
 measurements included in this document are traceable  
 to Australian/national standards.

**Attention:** Averyll Coyne

**Report** 554208-W

Project name

Project ID 60537182

Received Date Jul 13, 2017

Client Sample ID			QC309_12/7/17
Sample Matrix			Water
Eurofins   mgt Sample No.			M17-JI16062
Date Sampled			Jul 12, 2017
Test/Reference	LOR	Unit	
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-36 (Total)	0.1	mg/L	< 0.1
<b>Volatile Organics</b>			
1.1-Dichloroethane	0.001	mg/L	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001
2-Butanone (MEK)	0.001	mg/L	< 0.001
2-Propanone (Acetone)	0.001	mg/L	< 0.005
4-Chlorotoluene	0.001	mg/L	< 0.001
4-Methyl-2-pentanone (MIBK)	0.001	mg/L	< 0.001
Allyl chloride	0.001	mg/L	< 0.001
Benzene	0.001	mg/L	< 0.001
Bromobenzene	0.001	mg/L	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001
Bromoform	0.001	mg/L	< 0.001
Bromomethane	0.001	mg/L	< 0.001
Carbon disulfide	0.001	mg/L	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001



<b>Client Sample ID</b>			<b>QC309_12/7/17</b>
<b>Sample Matrix</b>			<b>Water</b>
<b>Eurofins   mgt Sample No.</b>			<b>M17-JI16062</b>
<b>Date Sampled</b>			<b>Jul 12, 2017</b>
Test/Reference	LOR	Unit	
<b>Volatile Organics</b>			
Chlorobenzene	0.001	mg/L	< 0.001
Chloroethane	0.001	mg/L	< 0.001
Chloroform	0.005	mg/L	< 0.005
Chloromethane	0.001	mg/L	< 0.001
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001
Dibromomethane	0.001	mg/L	< 0.001
Dichlorodifluoromethane	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
Iodomethane	0.001	mg/L	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
Methylene Chloride	0.001	mg/L	< 0.001
o-Xylene	0.001	mg/L	< 0.001
Styrene	0.001	mg/L	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001
Trichloroethene	0.001	mg/L	< 0.001
Trichlorofluoromethane	0.001	mg/L	< 0.001
Vinyl chloride	0.001	mg/L	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003
Fluorobenzene (surr.)	1	%	92
4-Bromofluorobenzene (surr.)	1	%	104
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>			
Naphthalene <sup>N02</sup>	0.01	mg/L	< 0.01
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	0.02	mg/L	< 0.02
TRH C6-C10	0.02	mg/L	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1
<b>Polycyclic Aromatic Hydrocarbons</b>			
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Anthracene	0.001	mg/L	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene <sup>N07</sup>	0.001	mg/L	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Chrysene	0.001	mg/L	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001



<b>Client Sample ID</b>			<b>QC309_12/7/17</b>
<b>Sample Matrix</b>			<b>Water</b>
<b>Eurofins   mgt Sample No.</b>			<b>M17-JI16062</b>
<b>Date Sampled</b>			<b>Jul 12, 2017</b>
Test/Reference	LOR	Unit	
<b>Polycyclic Aromatic Hydrocarbons</b>			
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001
Total PAH*	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	87
p-Terphenyl-d14 (surr.)	1	%	144
<b>Ammonia (as N)</b>			
	0.01	mg/L	42
<b>Chloride</b>			
	1	mg/L	7300
<b>Fluoride</b>			
	0.5	mg/L	1.0
<b>Nitrate &amp; Nitrite (as N)</b>			
	0.05	mg/L	1.0
<b>Nitrate (as N)</b>			
	0.02	mg/L	0.99
<b>Nitrite (as N)</b>			
	0.02	mg/L	0.04
<b>pH</b>			
	0.1	pH Units	7.8
<b>Phosphate total (as P)</b>			
	0.05	mg/L	5.4
<b>Sulphate (as S)</b>			
	5	mg/L	51
<b>Sulphate (as SO4)</b>			
	5	mg/L	150
<b>Sulphite (as S)</b>			
	0.5	mg/L	< 5
<b>Thiosulphate (as S)</b>			
	1	mg/L	< 10
<b>Total Dissolved Solids</b>			
	10	mg/L	12000
<b>Total Organic Carbon</b>			
	5	mg/L	65
<b>Total Oxidised Sulphur (as S)</b>			
	10	mg/L	51
<b>Alkalinity (speciated)</b>			
<b>Bicarbonate Alkalinity (as CaCO3)</b>			
	20	mg/L	2100
<b>Heavy Metals</b>			
<b>Aluminium</b>			
	0.05	mg/L	< 0.05
<b>Aluminium (filtered)</b>			
	0.05	mg/L	< 0.05
<b>Arsenic</b>			
	0.001	mg/L	0.002
<b>Arsenic (filtered)</b>			
	0.001	mg/L	0.002
<b>Cadmium</b>			
	0.0002	mg/L	< 0.0002
<b>Cadmium (filtered)</b>			
	0.0002	mg/L	< 0.0002
<b>Chromium</b>			
	0.001	mg/L	0.006
<b>Chromium (filtered)</b>			
	0.001	mg/L	0.004
<b>Copper</b>			
	0.001	mg/L	< 0.001
<b>Copper (filtered)</b>			
	0.001	mg/L	< 0.001
<b>Iron</b>			
	0.05	mg/L	19
<b>Iron (filtered)</b>			
	0.05	mg/L	17
<b>Lead</b>			
	0.001	mg/L	< 0.001
<b>Lead (filtered)</b>			
	0.001	mg/L	< 0.001
<b>Manganese</b>			
	0.005	mg/L	0.60
<b>Manganese (filtered)</b>			
	0.005	mg/L	0.54
<b>Mercury</b>			
	0.0001	mg/L	< 0.0001
<b>Mercury (filtered)</b>			
	0.0001	mg/L	< 0.0001
<b>Nickel</b>			
	0.001	mg/L	0.002
<b>Nickel (filtered)</b>			
	0.001	mg/L	0.001
<b>Selenium</b>			
	0.001	mg/L	< 0.001
<b>Selenium (filtered)</b>			
	0.001	mg/L	< 0.001
<b>Zinc</b>			
	0.005	mg/L	< 0.005
<b>Zinc (filtered)</b>			
	0.005	mg/L	< 0.005



<b>Client Sample ID</b>			<b>QC309_12/7/17</b>
<b>Sample Matrix</b>			<b>Water</b>
<b>Eurofins   mgt Sample No.</b>			<b>M17-JI16062</b>
<b>Date Sampled</b>			<b>Jul 12, 2017</b>
Test/Reference	LOR	Unit	
<b>Alkali Metals</b>			
Comments			R14
Calcium	0.5	mg/L	400
Magnesium	0.5	mg/L	1200
Potassium	0.5	mg/L	190
Sodium	0.5	mg/L	6100



## Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C36	Melbourne	Jul 18, 2017	7 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Melbourne	Jul 15, 2017	7 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Melbourne	Jul 18, 2017	7 Day
Volatile Organics - Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	Melbourne	Jul 15, 2017	7 Days
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Water by GCMS	Melbourne	Jul 18, 2017	7 Day
Ammonia (as N) - Method: APHA 4500-NH3 Ammonia Nitrogen by FIA	Melbourne	Jul 15, 2017	28 Day
Chloride - Method: LTM-INO-4090 Chloride by Discrete Analyser	Melbourne	Jul 15, 2017	28 Day
Fluoride - Method: LM-LTM-INO-4300 (Fluoride by Ion Chromatography)	Melbourne	Jul 15, 2017	28 Day
Nitrate & Nitrite (as N) - Method: APHA 4500-NO3/NO2 Nitrate-Nitrite Nitrogen by FIA	Melbourne	Jul 15, 2017	28 Day
Nitrate (as N) - Method: APHA 4500-NO3 Nitrate Nitrogen by FIA	Melbourne	Jul 15, 2017	7 Day
Nitrite (as N) - Method: APHA 4500-NO2 Nitrite Nitrogen by FIA	Melbourne	Jul 15, 2017	2 Day
pH - Method: LTM-GEN-7090 pH in water by ISE	Melbourne	Jul 15, 2017	0 Hours
Phosphate total (as P) - Method: APHA 4500-P E. Phosphorous	Melbourne	Jul 15, 2017	28 Day
Sulphate (as SO4) - Method: LTM-INO-4110 Sulfate by Discrete Analyser	Melbourne	Jul 15, 2017	28 Day
Total Dissolved Solids - Method: LM-LTM-INO-4110 (Total Dissolved Solids @ 178°C - 182°C)	Melbourne	Jul 15, 2017	7 Day
Total Organic Carbon - Method: APHA 5310B Total Organic Carbon	Melbourne	Jul 17, 2017	28 Day
Alkalinity (speciated) - Method: APHA 2320 Alkalinity by Titration	Melbourne	Jul 15, 2017	14 Day
Heavy Metals - Method: LTM-MET-3040 Metals in Waters by ICP-MS	Melbourne	Jul 15, 2017	180 Day
Heavy Metals (filtered) - Method: LTM-MET-3040 Metals in Waters by ICP-MS	Melbourne	Jul 15, 2017	180 Day
Mercury (filtered) - Method: USEPA 7470/1 Mercury	Melbourne	Jul 15, 2017	28 Day
Alkali Metals - Method: USEPA 6010 Alkali Metals	Melbourne	Jul 15, 2017	180 Day
Total Oxidised Sulphur Set (as S)			
Sulphate (as S) - Method: LTM-INO-4110 Sulfate by Discrete Analyser	Melbourne	Jul 15, 2017	28 Day
Sulphite (as S) - Method: LTM-INO-4240 Sulfite & Thiosulfate in Water	Melbourne	Jul 15, 2017	2 Day
Thiosulphate (as S) - Method: LTM-INO-4240 Sulfite & Thiosulfate in Water	Melbourne	Jul 15, 2017	2 Day
Total Oxidised Sulphur (as S)	Melbourne	Jul 14, 2017	2 Day

## Repeat Samples



**Description**

Alkali Metals

- Method: USEPA 6010 Alkali Metals

**Testing Site**

Melbourne

**Extracted**

Jul 20, 2017

**Holding Time**

180 Day







## Internal Quality Control Review and Glossary

### General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
- All soil results are reported on a dry basis, unless otherwise stated.
- All biota results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- This report replaces any interim results previously issued.

### Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

**\*\*NOTE:** pH duplicates are reported as a range NOT as RPD

### Units

**mg/kg:** milligrams per kilogram

**mg/L:** milligrams per litre

**ug/L:** micrograms per litre

**ppm:** Parts per million

**ppb:** Parts per billion

**%:** Percentage

**org/100mL:** Organisms per 100 millilitres

**NTU:** Nephelometric Turbidity Units

**MPN/100mL:** Most Probable Number of organisms per 100 millilitres

### Terms

<b>Dry</b>	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
<b>LOR</b>	Limit of Reporting.
<b>SPIKE</b>	Addition of the analyte to the sample and reported as percentage recovery.
<b>RPD</b>	Relative Percent Difference between two Duplicate pieces of analysis.
<b>LCS</b>	Laboratory Control Sample - reported as percent recovery.
<b>CRM</b>	Certified Reference Material - reported as percent recovery.
<b>Method Blank</b>	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
<b>Surr - Surrogate</b>	The addition of a like compound to the analyte target and reported as percentage recovery.
<b>Duplicate</b>	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
<b>USEPA</b>	United States Environmental Protection Agency
<b>APHA</b>	American Public Health Association
<b>TCLP</b>	Toxicity Characteristic Leaching Procedure
<b>COC</b>	Chain of Custody
<b>SRA</b>	Sample Receipt Advice
<b>QSM</b>	Quality Systems Manual ver 5.1 US Department of Defense
<b>CP</b>	Client Parent - QC was performed on samples pertaining to this report
<b>NCP</b>	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
<b>TEQ</b>	Toxic Equivalency Quotient

### QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

### QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.



**Quality Control Results**

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Method Blank</b>							
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
<b>Method Blank</b>							
<b>Volatile Organics</b>							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.001			0.001	Pass	
2-Propanone (Acetone)	mg/L	< 0.001			0.001	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.001			0.001	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Benzene	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.001			0.001	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroethane	mg/L	< 0.001			0.001	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.001			0.001	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Dichlorodifluoromethane	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
Methylene Chloride	mg/L	< 0.001			0.001	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	



Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Styrene	mg/L	< 0.001			0.001	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
trans-1,2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1,3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.001			0.001	Pass	
Vinyl chloride	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
<b>Method Blank</b>							
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>							
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
<b>Method Blank</b>							
<b>Polycyclic Aromatic Hydrocarbons</b>							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
<b>Method Blank</b>							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chloride	mg/L	< 1			1	Pass	
Fluoride	mg/L	< 0.5			0.5	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.05			0.05	Pass	
Sulphate (as S)	mg/L	< 5			5	Pass	
Sulphate (as SO4)	mg/L	< 5			5	Pass	
Sulphite (as S)	mg/L	< 0.5			0.5	Pass	
Thiosulphate (as S)	mg/L	< 1			1	Pass	
Total Dissolved Solids	mg/L	< 10			10	Pass	
Total Organic Carbon	mg/L	< 5			5	Pass	
<b>Method Blank</b>							
<b>Alkalinity (speciated)</b>							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
<b>Method Blank</b>							
<b>Heavy Metals</b>							
Aluminium	mg/L	< 0.05			0.05	Pass	



Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Selenium	mg/L	< 0.001			0.001	Pass	
Selenium (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
<b>Method Blank</b>							
<b>Alkali Metals</b>							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
<b>LCS - % Recovery</b>							
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>							
TRH C6-C9	%	118			70-130	Pass	
TRH C10-C14	%	93			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Volatile Organics</b>							
1.1-Dichloroethene	%	82			70-130	Pass	
1.1.1-Trichloroethane	%	112			70-130	Pass	
1.2-Dichlorobenzene	%	104			70-130	Pass	
1.2-Dichloroethane	%	88			70-130	Pass	
Benzene	%	95			70-130	Pass	
Ethylbenzene	%	108			70-130	Pass	
m&p-Xylenes	%	115			70-130	Pass	
Toluene	%	89			70-130	Pass	
Trichloroethene	%	80			70-130	Pass	
Xylenes - Total	%	116			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>							
Naphthalene	%	119			70-130	Pass	
TRH C6-C10	%	114			70-130	Pass	
TRH >C10-C16	%	89			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Polycyclic Aromatic Hydrocarbons</b>							
Acenaphthene	%	85			70-130	Pass	
Acenaphthylene	%	85			70-130	Pass	



Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Anthracene	%	91			70-130	Pass	
Benz(a)anthracene	%	87			70-130	Pass	
Benzo(a)pyrene	%	89			70-130	Pass	
Benzo(b&j)fluoranthene	%	109			70-130	Pass	
Benzo(g,h,i)perylene	%	125			70-130	Pass	
Benzo(k)fluoranthene	%	96			70-130	Pass	
Chrysene	%	77			70-130	Pass	
Dibenz(a,h)anthracene	%	125			70-130	Pass	
Fluoranthene	%	81			70-130	Pass	
Fluorene	%	89			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	114			70-130	Pass	
Naphthalene	%	77			70-130	Pass	
Phenanthrene	%	88			70-130	Pass	
Pyrene	%	76			70-130	Pass	
<b>LCS - % Recovery</b>							
Ammonia (as N)	%	99			70-130	Pass	
Chloride	%	121			70-130	Pass	
Fluoride	%	89			70-130	Pass	
Nitrate & Nitrite (as N)	%	96			70-130	Pass	
Nitrate (as N)	%	96			70-130	Pass	
Nitrite (as N)	%	103			70-130	Pass	
Phosphate total (as P)	%	92			70-130	Pass	
Sulphate (as S)	%	114			70-130	Pass	
Sulphate (as SO4)	%	114			70-130	Pass	
Thiosulphate (as S)	%	101			70-130	Pass	
Total Dissolved Solids	%	88			70-130	Pass	
Total Organic Carbon	%	94			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Heavy Metals</b>							
Aluminium	%	98			80-120	Pass	
Aluminium (filtered)	%	98			80-120	Pass	
Arsenic	%	112			80-120	Pass	
Arsenic (filtered)	%	112			80-120	Pass	
Cadmium	%	99			80-120	Pass	
Cadmium (filtered)	%	99			80-120	Pass	
Chromium	%	100			80-120	Pass	
Chromium (filtered)	%	100			80-120	Pass	
Copper	%	104			80-120	Pass	
Copper (filtered)	%	104			80-120	Pass	
Iron (filtered)	%	116			80-120	Pass	
Lead	%	105			80-120	Pass	
Lead (filtered)	%	105			80-120	Pass	
Manganese	%	111			80-120	Pass	
Manganese (filtered)	%	111			80-120	Pass	
Mercury	%	96			75-125	Pass	
Mercury (filtered)	%	96			70-130	Pass	
Nickel	%	107			80-120	Pass	
Nickel (filtered)	%	107			80-120	Pass	
Selenium	%	108			80-120	Pass	
Selenium (filtered)	%	108			80-120	Pass	
Zinc	%	98			80-120	Pass	
Zinc (filtered)	%	98			80-120	Pass	
<b>LCS - % Recovery</b>							
<b>Alkali Metals</b>							



Test				Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Calcium				%	108		70-130	Pass	
Magnesium				%	110		70-130	Pass	
Potassium				%	89		70-130	Pass	
Sodium				%	108		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>									
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>					Result 1				
TRH C10-C14	M17-JI16309	NCP	%	109			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>					Result 1				
TRH >C10-C16	M17-JI16309	NCP	%	101			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>Polycyclic Aromatic Hydrocarbons</b>					Result 1				
Acenaphthene	M17-JI15688	NCP	%	94			70-130	Pass	
Acenaphthylene	M17-JI15688	NCP	%	100			70-130	Pass	
Anthracene	M17-JI15688	NCP	%	117			70-130	Pass	
Benz(a)anthracene	M17-JI15688	NCP	%	115			70-130	Pass	
Benzo(a)pyrene	M17-JI15688	NCP	%	92			70-130	Pass	
Benzo(b&j)fluoranthene	M17-JI15688	NCP	%	102			70-130	Pass	
Benzo(g,h,i)perylene	M17-JI15688	NCP	%	129			70-130	Pass	
Benzo(k)fluoranthene	M17-JI15688	NCP	%	101			70-130	Pass	
Chrysene	M17-JI15688	NCP	%	95			70-130	Pass	
Dibenz(a,h)anthracene	M17-JI15688	NCP	%	119			70-130	Pass	
Fluoranthene	M17-JI15688	NCP	%	107			70-130	Pass	
Fluorene	M17-JI15688	NCP	%	105			70-130	Pass	
Indeno(1,2,3-cd)pyrene	M17-JI15688	NCP	%	114			70-130	Pass	
Naphthalene	M17-JI15688	NCP	%	78			70-130	Pass	
Phenanthrene	M17-JI15688	NCP	%	108			70-130	Pass	
Pyrene	M17-JI15688	NCP	%	104			70-130	Pass	
<b>Spike - % Recovery</b>									
					Result 1				
Ammonia (as N)	M17-JI17362	NCP	%	95			70-130	Pass	
Chloride	M17-JI15970	NCP	%	110			70-130	Pass	
Nitrate & Nitrite (as N)	M17-JI17362	NCP	%	79			70-130	Pass	
Nitrate (as N)	M17-JI17362	NCP	%	79			70-130	Pass	
Nitrite (as N)	M17-JI17362	NCP	%	81			70-130	Pass	
Phosphate total (as P)	M17-JI17375	NCP	%	97			70-130	Pass	
Sulphate (as S)	M17-JI14531	NCP	%	113			70-130	Pass	
Sulphate (as SO4)	M17-JI14531	NCP	%	113			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>Heavy Metals</b>					Result 1				
Aluminium	M17-JI15962	NCP	%	100			75-125	Pass	
Aluminium (filtered)	M17-JI16909	NCP	%	91			75-125	Pass	
Arsenic	M17-JI14543	NCP	%	103			75-125	Pass	
Arsenic (filtered)	M17-JI16909	NCP	%	103			70-130	Pass	
Cadmium	M17-JI14543	NCP	%	85			75-125	Pass	
Cadmium (filtered)	M17-JI16909	NCP	%	86			70-130	Pass	
Chromium	M17-JI14543	NCP	%	88			75-125	Pass	
Chromium (filtered)	M17-JI16909	NCP	%	92			70-130	Pass	
Copper	M17-JI14543	NCP	%	88			75-125	Pass	
Copper (filtered)	M17-JI16909	NCP	%	88			70-130	Pass	
Iron (filtered)	M17-JI15725	NCP	%	80			70-130	Pass	
Lead	M17-JI14543	NCP	%	90			75-125	Pass	
Lead (filtered)	M17-JI16909	NCP	%	92			70-130	Pass	



Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Manganese	M17-JI15962	NCP	%	103			75-125	Pass	
Manganese (filtered)	M17-JI16909	NCP	%	79			70-130	Pass	
Mercury	M17-JI14543	NCP	%	89			70-130	Pass	
Mercury (filtered)	M17-JI16909	NCP	%	87			70-130	Pass	
Nickel	M17-JI14543	NCP	%	92			75-125	Pass	
Nickel (filtered)	M17-JI16909	NCP	%	89			70-130	Pass	
Selenium	M17-JI14543	NCP	%	100			75-125	Pass	
Selenium (filtered)	M17-JI16909	NCP	%	97			70-130	Pass	
Zinc	M17-JI14543	NCP	%	82			75-125	Pass	
Zinc (filtered)	M17-JI16909	NCP	%	85			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>Alkali Metals</b>				Result 1					
Potassium	M17-JI20918	NCP	%	104			70-130	Pass	
Sodium	M17-JI21797	NCP	%	124			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1	Result 2	RPD			
TRH C10-C14	M17-JI16564	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M17-JI16564	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M17-JI16564	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1	Result 2	RPD			
TRH >C10-C16	M17-JI16564	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	M17-JI16564	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	M17-JI16564	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
<b>Duplicate</b>									
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1	Result 2	RPD			
Acenaphthene	M17-JI15687	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	M17-JI15687	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	M17-JI15687	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	M17-JI15687	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	M17-JI15687	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&i)fluoranthene	M17-JI15687	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g,h,i)perylene	M17-JI15687	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	M17-JI15687	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	M17-JI15687	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a,h)anthracene	M17-JI15687	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	M17-JI15687	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	M17-JI15687	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	M17-JI15687	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	M17-JI15687	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	M17-JI15687	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	M17-JI15687	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
<b>Duplicate</b>									
				Result 1	Result 2	RPD			
Ammonia (as N)	M17-JI17362	NCP	mg/L	0.39	0.37	4.0	30%	Pass	
Chloride	M17-JI17071	NCP	mg/L	730	740	<1	30%	Pass	
Fluoride	M17-JI16062	CP	mg/L	1.0	0.9	1.6	30%	Pass	
Nitrate & Nitrite (as N)	M17-JI17362	NCP	mg/L	0.05	< 0.05	6.0	30%	Pass	
Nitrate (as N)	M17-JI17362	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Nitrite (as N)	M17-JI17362	NCP	mg/L	0.05	0.04	18	30%	Pass	
pH	M17-JI16967	NCP	pH Units	6.6	6.7	pass	30%	Pass	
Phosphate total (as P)	M17-JI16687	NCP	mg/L	0.12	0.11	4.0	30%	Pass	
Sulphate (as S)	M17-JI15969	NCP	mg/L	100	110	1.5	30%	Pass	



Duplicate								
				Result 1	Result 2	RPD		
Sulphate (as SO <sub>4</sub> )	M17-JI15969	NCP	mg/L	310	320	1.5	30%	Pass
Sulphite (as S)	M17-JI22746	NCP	mg/L	< 2.5	< 2.5	<1	30%	Pass
Thiosulphate (as S)	M17-JI22746	NCP	mg/L	< 5	< 5	<1	30%	Pass
Total Dissolved Solids	M17-JI16042	NCP	mg/L	16000	13000	19	30%	Pass
Total Organic Carbon	M17-JI16834	NCP	mg/L	470	440	7.0	30%	Pass
Duplicate								
Alkalinity (speciated)				Result 1	Result 2	RPD		
Bicarbonate Alkalinity (as CaCO <sub>3</sub> )	M17-JI16967	NCP	mg/L	28	23	18	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Aluminium	M17-JI14543	NCP	mg/L	0.31	0.30	1.0	30%	Pass
Aluminium (filtered)	M17-JI16909	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Arsenic	M17-JI14543	NCP	mg/L	0.002	0.002	5.0	30%	Pass
Arsenic (filtered)	M17-JI16909	NCP	mg/L	0.001	0.001	6.0	30%	Pass
Cadmium	M17-JI14543	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Cadmium (filtered)	M17-JI16909	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium	M17-JI14543	NCP	mg/L	0.001	0.001	3.0	30%	Pass
Chromium (filtered)	M17-JI16909	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper	M17-JI14543	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	M17-JI16909	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Iron (filtered)	M17-JI16909	NCP	mg/L	0.38	0.36	6.0	30%	Pass
Lead	M17-JI14543	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Lead (filtered)	M17-JI16909	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Manganese	M17-JI14543	NCP	mg/L	0.92	0.94	3.0	30%	Pass
Manganese (filtered)	M17-JI16909	NCP	mg/L	0.26	0.24	6.0	30%	Pass
Mercury	M17-JI14543	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Mercury (filtered)	M17-JI16909	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel	M17-JI14543	NCP	mg/L	0.002	0.002	4.0	30%	Pass
Nickel (filtered)	M17-JI16909	NCP	mg/L	0.011	0.010	7.0	30%	Pass
Selenium	M17-JI14543	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Selenium (filtered)	M17-JI16909	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Zinc	M17-JI14543	NCP	mg/L	0.007	0.007	7.0	30%	Pass
Zinc (filtered)	M17-JI16909	NCP	mg/L	0.011	0.011	3.0	30%	Pass
Duplicate								
Alkali Metals				Result 1	Result 2	RPD		
Calcium	M17-JI21797	NCP	mg/L	6.2	6.1	1.0	30%	Pass
Magnesium	M17-JI20918	NCP	mg/L	16	18	12	30%	Pass
Potassium	M17-JI20918	NCP	mg/L	9.5	9.9	4.0	30%	Pass
Sodium	M17-JI21797	NCP	mg/L	10	9.8	3.0	30%	Pass



## Comments

### Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

### Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
R14	These results have been confirmed by repeat analysis

### Authorised By

Natalie Krasselt	Analytical Services Manager
Alex Petridis	Senior Analyst-Metal (VIC)
Alex Petridis	Senior Analyst-Organic (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)



### Glenn Jackson

#### National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

\* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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ANZ  
**FQM - Generic Chain of Custody Form**

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: JM BP BH		Destination Laboratory	
PROJECT MANAGER (PM): <b>Averyll Coyne</b>		SITE:		MOBILE: 0409536240		PHONE:	
PROJECT NUMBER & TASK CO <b>60537182</b>		P.O. NO.:		EMAIL REPORT TO: <b>Averyll Coyne</b>		Eurofins	
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)			
<b>FOR LABORATORY USE ONLY</b> COOLER SEAL (circle appropriate) Intact: Yes No N/A SAMPLE TEMPERATURE CHILLED: Yes No		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:		pH, TDS, TOC TRH (Cr-40) PAH Nitrogen oxides/sulphur oxides VOC (ALSEP74-WF) includes BTEXN Ionic chemistry (Na), (Ca), (Mg), (K), (Cl), (HCO3), (NO3), (NO2), (NH3) (PO4), (SO4), (F), (Mn) PFAS - 28 analytes Dissolved metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg) Total Metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)		Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.	
SAMPLE INFORMATION (note: S = Soil, W=Water)				CONTAINER INFORMATION			
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	
	QC313-1417/17	W	14/02/17				
	QC110-1417/17	↓	↓				
	QC115-17/02/17	↓	↓				
RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT	
Name: <b>Jacob Muller</b>	Date: <b>17/02/17</b>	Name: <b>[Signature]</b>	Date: <b>17/2</b>	Name:	Date:	Con' Note No:	
Of:	Time:	Of: <b>[Signature]</b>	Time: <b>1139</b>	Of:	Time:	Transport Co:	
Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.							
Soil Container Codes: Jar = Unpreserved glass jar							

COC Page of  
 55457



## Sample Receipt Advice

Company name: **AECOM Aust Pty Ltd Melbourne**

Contact name: Averyll Coyne  
Project ID: 60537182  
COC number: Not provided  
Turn around time: 5 Day  
Date/Time received: Jul 17, 2017 11:39 AM  
Eurofins | mgt reference: **554577**

### Sample information

- A detailed list of analytes logged into our LIMS, is included in the attached summary table.
  - Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 2.7 degrees Celsius.
  - All samples have been received as described on the above COC.
  - COC has been completed correctly.
  - Attempt to chill was evident.
  - Appropriately preserved sample containers have been used.
  - All samples were received in good condition.
  - Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
  - Appropriate sample containers have been used.
  - Sample containers for volatile analysis received with zero headspace.
  - Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

### Contact notes

If you have any questions with respect to these samples please contact:

Natalie Krasselt on Phone : (+61) (3) 8564 5000 or by e.mail: NatalieKrasselt@eurofins.com

Results will be delivered electronically via e.mail to Averyll Coyne - averyll.coyne@aecom.com.

*Note: A copy of these results will also be delivered to the general AECOM Aust Pty Ltd Melbourne email address.*







**AECOM Aust Pty Ltd Melbourne**  
**Collins Square, Tower 2, Level 11, 727 Collins Street**  
**Docklands**  
**VIC 3008**



**NATA Accredited**  
**Accreditation Number 1261**  
**Site Number 1254**

Accredited for compliance with ISO/IEC 17025 – Testing  
 The results of the tests, calibrations and/or  
 measurements included in this document are traceable  
 to Australian/national standards.

**Attention:** Averyll Coyne

**Report** 554577-W  
 Project name  
 Project ID 60537182  
 Received Date Jul 17, 2017

Client Sample ID			QC313_14/7/17	QC110_14/7/17	QC150_17/7/17
Sample Matrix			Water	Water	Water
Eurofins   mgt Sample No.			M17-JI19262	M17-JI19263	M17-JI19264
Date Sampled			Jul 14, 2017	Jul 14, 2017	Jul 17, 2017
Test/Reference	LOR	Unit			
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>					
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	-
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	-
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	-
TRH C10-36 (Total)	0.1	mg/L	< 0.1	< 0.1	-
<b>BTEX</b>					
Benzene	0.001	mg/L	-	-	< 0.001
Toluene	0.001	mg/L	-	-	< 0.001
Ethylbenzene	0.001	mg/L	-	-	< 0.001
m&p-Xylenes	0.002	mg/L	-	-	< 0.002
o-Xylene	0.001	mg/L	-	-	< 0.001
Xylenes - Total	0.003	mg/L	-	-	< 0.003
4-Bromofluorobenzene (surr.)	1	%	-	-	140
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>					
Naphthalene <sup>N02</sup>	0.01	mg/L	< 0.01	< 0.01	< 0.01
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	0.02	mg/L	< 0.02	< 0.02	< 0.02
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	-
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	0.05	mg/L	< 0.05	< 0.05	-
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	-
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	-
<b>Volatile Organics</b>					
1.1-Dichloroethane	0.001	mg/L	< 0.001	0.003	-
1.1-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	-
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	-
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	-
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	-
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	-
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001	-
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	-
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	-
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	-
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001	-
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	-
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	-



Client Sample ID			QC313_14/7/17	QC110_14/7/17	QC150_17/7/17
Sample Matrix			Water	Water	Water
Eurofins   mgt Sample No.			M17-JI19262	M17-JI19263	M17-JI19264
Date Sampled			Jul 14, 2017	Jul 14, 2017	Jul 17, 2017
Test/Reference	LOR	Unit			
<b>Volatile Organics</b>					
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	-
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	-
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	-
2-Butanone (MEK)	0.001	mg/L	< 0.001	< 0.001	-
2-Propanone (Acetone)	0.001	mg/L	< 0.001	< 0.001	-
4-Chlorotoluene	0.001	mg/L	< 0.001	< 0.001	-
4-Methyl-2-pentanone (MIBK)	0.001	mg/L	< 0.001	< 0.001	-
Allyl chloride	0.001	mg/L	< 0.001	< 0.001	-
Benzene	0.001	mg/L	< 0.001	< 0.001	-
Bromobenzene	0.001	mg/L	< 0.001	< 0.001	-
Bromochloromethane	0.001	mg/L	< 0.001	< 0.001	-
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001	-
Bromoform	0.001	mg/L	< 0.001	< 0.001	-
Bromomethane	0.001	mg/L	< 0.001	< 0.001	-
Carbon disulfide	0.001	mg/L	< 0.001	< 0.001	-
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001	-
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001	-
Chloroethane	0.001	mg/L	< 0.001	< 0.001	-
Chloroform	0.005	mg/L	< 0.005	< 0.005	-
Chloromethane	0.001	mg/L	< 0.001	< 0.001	-
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	-
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	-
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001	-
Dibromomethane	0.001	mg/L	< 0.001	< 0.001	-
Dichlorodifluoromethane	0.001	mg/L	< 0.001	< 0.001	-
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	-
Iodomethane	0.001	mg/L	< 0.001	< 0.001	-
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	< 0.001	-
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	-
Methylene Chloride	0.001	mg/L	< 0.001	< 0.001	-
o-Xylene	0.001	mg/L	< 0.001	< 0.001	-
Styrene	0.001	mg/L	< 0.001	< 0.001	-
Tetrachloroethene	0.001	mg/L	< 0.001	< 0.001	-
Toluene	0.001	mg/L	< 0.001	< 0.001	-
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	-
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	-
Trichloroethene	0.001	mg/L	< 0.001	< 0.001	-
Trichlorofluoromethane	0.001	mg/L	< 0.001	< 0.001	-
Vinyl chloride	0.001	mg/L	< 0.001	< 0.001	-
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	-
Fluorobenzene (surr.)	1	%	80	78	-
4-Bromofluorobenzene (surr.)	1	%	74	77	-
<b>Polycyclic Aromatic Hydrocarbons</b>					
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	-
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	-
Anthracene	0.001	mg/L	< 0.001	< 0.001	-
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	-
Benzo(b&j)fluoranthene <sup>N07</sup>	0.001	mg/L	< 0.001	< 0.001	-



Client Sample ID			QC313_14/7/17	QC110_14/7/17	QC150_17/7/17
Sample Matrix			Water	Water	Water
Eurofins   mgt Sample No.			M17-JI19262	M17-JI19263	M17-JI19264
Date Sampled			Jul 14, 2017	Jul 14, 2017	Jul 17, 2017
Test/Reference	LOR	Unit			
<b>Polycyclic Aromatic Hydrocarbons</b>					
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	-
Chrysene	0.001	mg/L	< 0.001	< 0.001	-
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	-
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	-
Fluorene	0.001	mg/L	< 0.001	< 0.001	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	-
Naphthalene	0.001	mg/L	< 0.001	< 0.001	-
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	-
Pyrene	0.001	mg/L	< 0.001	< 0.001	-
Total PAH*	0.001	mg/L	< 0.001	< 0.001	-
2-Fluorobiphenyl (surr.)	1	%	93	91	-
p-Terphenyl-d14 (surr.)	1	%	138	133	-
<b>Ammonia (as N)</b>					
Ammonia (as N)	0.01	mg/L	10.0	3.1	-
Chloride	1	mg/L	45	4300	-
Fluoride	0.5	mg/L	< 0.5	0.8	-
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	< 0.05	-
Nitrate (as N)	0.02	mg/L	0.02	< 0.02	-
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	-
pH	0.1	pH Units	7.5	7.6	-
Phosphate total (as P)	0.05	mg/L	0.42	0.19	-
Sulphate (as S)	5	mg/L	100	340	-
Sulphate (as SO4)	5	mg/L	300	1000	-
Sulphite (as S)	0.5	mg/L	< 1	< 1	-
Thiosulphate (as S)	1	mg/L	< 2	< 2	-
Total Dissolved Solids	10	mg/L	1100	7700	-
Total Organic Carbon	5	mg/L	< 5	6.4	-
Total Oxidised Sulphur (as S)	10	mg/L	100	340	-
<b>Alkalinity (speciated)</b>					
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	740	490	-
<b>Heavy Metals</b>					
Aluminium	0.05	mg/L	13	0.52	-
Aluminium (filtered)	0.05	mg/L	< 0.05	< 0.05	-
Arsenic	0.001	mg/L	0.024	0.006	-
Arsenic (filtered)	0.001	mg/L	0.003	0.005	-
Cadmium	0.0002	mg/L	0.0002	< 0.0002	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	-
Chromium	0.001	mg/L	0.042	0.003	-
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Copper	0.001	mg/L	0.013	< 0.001	-
Copper (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Iron	0.05	mg/L	35	2.1	-
Iron (filtered)	0.05	mg/L	7.9	1.4	-
Lead	0.001	mg/L	0.35	< 0.001	-
Lead (filtered)	0.001	mg/L	0.002	< 0.001	-
Manganese	0.005	mg/L	0.50	0.29	-
Manganese (filtered)	0.005	mg/L	0.38	0.24	-
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	-



Client Sample ID			QC313_14/7/17	QC110_14/7/17	QC150_17/7/17
Sample Matrix			Water	Water	Water
Eurofins   mgt Sample No.			M17-JI19262	M17-JI19263	M17-JI19264
Date Sampled			Jul 14, 2017	Jul 14, 2017	Jul 17, 2017
Test/Reference	LOR	Unit			
<b>Heavy Metals</b>					
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	-
Nickel	0.001	mg/L	0.054	0.019	-
Nickel (filtered)	0.001	mg/L	0.009	0.018	-
Selenium	0.001	mg/L	0.003	< 0.001	-
Selenium (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Zinc	0.005	mg/L	0.093	0.008	-
Zinc (filtered)	0.005	mg/L	0.016	0.007	-
<b>Alkali Metals</b>					
Calcium	0.5	mg/L	230	350	-
Magnesium	0.5	mg/L	95	430	-
Potassium	0.5	mg/L	23	130	-
Sodium	0.5	mg/L	190	3000	-



## Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C36	Melbourne	Jul 20, 2017	7 Day
BTEX - Method: TRH C6-C40 - LTM-ORG-2010	Melbourne	Jul 18, 2017	14 Day
Volatile Organics - Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	Melbourne	Jul 18, 2017	7 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Melbourne	Jul 18, 2017	7 Day
Total Recoverable Hydrocarbons - Method: TRH C6-C40 - LTM-ORG-2010	Melbourne	Jul 18, 2017	7 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Melbourne	Jul 20, 2017	7 Day
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Water by GCMS	Melbourne	Jul 20, 2017	7 Day
Ammonia (as N) - Method: APHA 4500-NH3 Ammonia Nitrogen by FIA	Melbourne	Jul 18, 2017	28 Day
Chloride - Method: LTM-INO-4090 Chloride by Discrete Analyser	Melbourne	Jul 18, 2017	28 Day
Fluoride - Method: LM-LTM-INO-4300 (Fluoride by Ion Chromatography)	Melbourne	Jul 19, 2017	28 Day
Nitrate & Nitrite (as N) - Method: APHA 4500-NO3/NO2 Nitrate-Nitrite Nitrogen by FIA	Melbourne	Jul 18, 2017	28 Day
Nitrate (as N) - Method: APHA 4500-NO3 Nitrate Nitrogen by FIA	Melbourne	Jul 18, 2017	7 Day
Nitrite (as N) - Method: APHA 4500-NO2 Nitrite Nitrogen by FIA	Melbourne	Jul 18, 2017	2 Day
pH - Method: LTM-GEN-7090 pH in water by ISE	Melbourne	Jul 18, 2017	0 Hours
Phosphate total (as P) - Method: APHA 4500-P E. Phosphorous	Melbourne	Jul 18, 2017	28 Day
Sulphate (as SO4) - Method: LTM-INO-4110 Sulfate by Discrete Analyser	Melbourne	Jul 18, 2017	28 Day
Total Dissolved Solids - Method: LM-LTM-INO-4110 (Total Dissolved Solids @ 178°C - 182°C)	Melbourne	Jul 18, 2017	7 Day
Total Organic Carbon - Method: APHA 5310B Total Organic Carbon	Melbourne	Jul 18, 2017	28 Day
Alkalinity (speciated) - Method: APHA 2320 Alkalinity by Titration	Melbourne	Jul 18, 2017	14 Day
Heavy Metals - Method: LTM-MET-3040 Metals in Waters by ICP-MS	Melbourne	Jul 18, 2017	180 Day
Heavy Metals (filtered) - Method: LTM-MET-3040 Metals in Waters by ICP-MS	Melbourne	Jul 18, 2017	180 Day
Mercury (filtered) - Method: USEPA 7470/1 Mercury	Melbourne	Jul 18, 2017	28 Day
Alkali Metals - Method: USEPA 6010 Alkali Metals	Melbourne	Jul 18, 2017	180 Day
Total Oxidised Sulphur Set (as S)			
Sulphate (as S) - Method: LTM-INO-4110 Sulfate by Discrete Analyser	Melbourne	Jul 18, 2017	28 Day
Sulphite (as S)	Melbourne	Jul 18, 2017	2 Day



<b>Description</b>	<b>Testing Site</b>	<b>Extracted</b>	<b>Holding Time</b>
- Method: LTM-INO-4240 Sulfite & Thiosulfate in Water Thiosulphate (as S)	Melbourne	Jul 18, 2017	2 Day
- Method: LTM-INO-4240 Sulfite & Thiosulfate in Water Total Oxidised Sulphur (as S)	Melbourne	Jul 18, 2017	2 Day







## Internal Quality Control Review and Glossary

### General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

### Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

**\*\*NOTE:** pH duplicates are reported as a range NOT as RPD

### Units

**mg/kg:** milligrams per kilogram

**mg/L:** milligrams per litre

**ug/L:** micrograms per litre

**ppm:** Parts per million

**ppb:** Parts per billion

**%:** Percentage

**org/100mL:** Organisms per 100 millilitres

**NTU:** Nephelometric Turbidity Units

**MPN/100mL:** Most Probable Number of organisms per 100 millilitres

### Terms

<b>Dry</b>	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
<b>LOR</b>	Limit of Reporting.
<b>SPIKE</b>	Addition of the analyte to the sample and reported as percentage recovery.
<b>RPD</b>	Relative Percent Difference between two Duplicate pieces of analysis.
<b>LCS</b>	Laboratory Control Sample - reported as percent recovery.
<b>CRM</b>	Certified Reference Material - reported as percent recovery.
<b>Method Blank</b>	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
<b>Surr - Surrogate</b>	The addition of a like compound to the analyte target and reported as percentage recovery.
<b>Duplicate</b>	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
<b>USEPA</b>	United States Environmental Protection Agency
<b>APHA</b>	American Public Health Association
<b>TCLP</b>	Toxicity Characteristic Leaching Procedure
<b>COC</b>	Chain of Custody
<b>SRA</b>	Sample Receipt Advice
<b>QSM</b>	Quality Systems Manual ver 5.1 US Department of Defense
<b>CP</b>	Client Parent - QC was performed on samples pertaining to this report
<b>NCP</b>	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
<b>TEQ</b>	Toxic Equivalency Quotient

### QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

### QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.



**Quality Control Results**

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Method Blank</b>							
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
<b>Method Blank</b>							
<b>BTEX</b>							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
<b>Method Blank</b>							
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>							
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
<b>Method Blank</b>							
<b>Volatile Organics</b>							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.001			0.001	Pass	
2-Propanone (Acetone)	mg/L	< 0.001			0.001	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.001			0.001	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.001			0.001	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	



Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chloroethane	mg/L	< 0.001			0.001	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.001			0.001	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Dichlorodifluoromethane	mg/L	< 0.001			0.001	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
Methylene Chloride	mg/L	< 0.001			0.001	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.001			0.001	Pass	
Vinyl chloride	mg/L	< 0.001			0.001	Pass	
<b>Method Blank</b>							
<b>Polycyclic Aromatic Hydrocarbons</b>							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
<b>Method Blank</b>							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chloride	mg/L	< 1			1	Pass	
Fluoride	mg/L	< 0.5			0.5	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.05			0.05	Pass	
Sulphate (as S)	mg/L	< 5			5	Pass	
Sulphate (as SO4)	mg/L	< 5			5	Pass	
Sulphite (as S)	mg/L	< 0.5			0.5	Pass	
Thiosulphate (as S)	mg/L	< 1			1	Pass	
Total Organic Carbon	mg/L	< 5			5	Pass	
<b>Method Blank</b>							
<b>Alkalinity (speciated)</b>							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
<b>Method Blank</b>							
<b>Heavy Metals</b>							



Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Selenium	mg/L	< 0.001			0.001	Pass	
Selenium (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
<b>Method Blank</b>							
<b>Alkali Metals</b>							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
<b>LCS - % Recovery</b>							
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>							
TRH C6-C9	%	81			70-130	Pass	
TRH C10-C14	%	81			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>BTEX</b>							
Benzene	%	88			70-130	Pass	
Toluene	%	78			70-130	Pass	
Ethylbenzene	%	77			70-130	Pass	
m&p-Xylenes	%	79			70-130	Pass	
Xylenes - Total	%	82			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>							
Naphthalene	%	108			70-130	Pass	
TRH C6-C10	%	73			70-130	Pass	
TRH >C10-C16	%	74			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Volatile Organics</b>							
1.1-Dichloroethene	%	95			70-130	Pass	
1.1.1-Trichloroethane	%	125			70-130	Pass	
1.2-Dichlorobenzene	%	129			70-130	Pass	
1.2-Dichloroethane	%	102			70-130	Pass	
Trichloroethene	%	97			70-130	Pass	
<b>LCS - % Recovery</b>							



Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Polycyclic Aromatic Hydrocarbons</b>							
Acenaphthene	%	130			70-130	Pass	
Acenaphthylene	%	126			70-130	Pass	
Anthracene	%	124			70-130	Pass	
Benz(a)anthracene	%	124			70-130	Pass	
Benzo(a)pyrene	%	121			70-130	Pass	
Benzo(b&j)fluoranthene	%	123			70-130	Pass	
Benzo(g,h,i)perylene	%	95			70-130	Pass	
Benzo(k)fluoranthene	%	130			70-130	Pass	
Chrysene	%	129			70-130	Pass	
Dibenz(a,h)anthracene	%	79			70-130	Pass	
Fluoranthene	%	123			70-130	Pass	
Fluorene	%	128			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	87			70-130	Pass	
Naphthalene	%	112			70-130	Pass	
Phenanthrene	%	124			70-130	Pass	
Pyrene	%	122			70-130	Pass	
<b>LCS - % Recovery</b>							
Ammonia (as N)	%	95			70-130	Pass	
Chloride	%	102			70-130	Pass	
Fluoride	%	111			70-130	Pass	
Nitrate & Nitrite (as N)	%	94			70-130	Pass	
Nitrate (as N)	%	94			70-130	Pass	
Nitrite (as N)	%	100			70-130	Pass	
Phosphate total (as P)	%	93			70-130	Pass	
Sulphate (as S)	%	113			70-130	Pass	
Sulphate (as SO4)	%	113			70-130	Pass	
Thiosulphate (as S)	%	102			70-130	Pass	
Total Dissolved Solids	%	92			70-130	Pass	
Total Organic Carbon	%	109			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Heavy Metals</b>							
Aluminium	%	104			80-120	Pass	
Aluminium (filtered)	%	104			80-120	Pass	
Arsenic	%	102			80-120	Pass	
Arsenic (filtered)	%	102			80-120	Pass	
Cadmium	%	102			80-120	Pass	
Cadmium (filtered)	%	102			80-120	Pass	
Chromium	%	103			80-120	Pass	
Chromium (filtered)	%	103			80-120	Pass	
Copper	%	99			80-120	Pass	
Copper (filtered)	%	99			80-120	Pass	
Iron	%	100			80-120	Pass	
Iron (filtered)	%	99			80-120	Pass	
Lead	%	102			80-120	Pass	
Lead (filtered)	%	102			80-120	Pass	
Manganese	%	102			80-120	Pass	
Manganese (filtered)	%	102			80-120	Pass	
Mercury	%	100			75-125	Pass	
Mercury (filtered)	%	100			70-130	Pass	
Nickel	%	99			80-120	Pass	
Nickel (filtered)	%	99			80-120	Pass	
Selenium	%	103			80-120	Pass	
Selenium (filtered)	%	103			80-120	Pass	



Test		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Zinc		%	103			80-120	Pass	
Zinc (filtered)		%	103			80-120	Pass	
<b>LCS - % Recovery</b>								
<b>Alkali Metals</b>								
Calcium		%	108			70-130	Pass	
Magnesium		%	110			70-130	Pass	
Potassium		%	93			70-130	Pass	
Sodium		%	106			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1				
TRH C10-C14	M17-JI20075	NCP	%	109		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1				
TRH >C10-C16	M17-JI20075	NCP	%	104		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1				
Acenaphthene	M17-JI17508	NCP	%	75		70-130	Pass	
Acenaphthylene	M17-JI17508	NCP	%	80		70-130	Pass	
Anthracene	M17-JI17508	NCP	%	80		70-130	Pass	
Benz(a)anthracene	M17-JI17508	NCP	%	88		70-130	Pass	
Benzo(a)pyrene	M17-JI17508	NCP	%	78		70-130	Pass	
Benzo(b&i)fluoranthene	M17-JI17508	NCP	%	95		70-130	Pass	
Benzo(g,h,i)perylene	M17-JI17508	NCP	%	86		70-130	Pass	
Benzo(k)fluoranthene	M17-JI17508	NCP	%	124		70-130	Pass	
Chrysene	M17-JI17508	NCP	%	98		70-130	Pass	
Dibenz(a,h)anthracene	M17-JI17508	NCP	%	78		70-130	Pass	
Fluoranthene	M17-JI17508	NCP	%	101		70-130	Pass	
Fluorene	M17-JI17508	NCP	%	81		70-130	Pass	
Indeno(1,2,3-cd)pyrene	M17-JI17508	NCP	%	78		70-130	Pass	
Naphthalene	M17-JI17508	NCP	%	76		70-130	Pass	
Phenanthrene	M17-JI17508	NCP	%	80		70-130	Pass	
Pyrene	M17-JI17508	NCP	%	97		70-130	Pass	
<b>Spike - % Recovery</b>								
				Result 1				
Ammonia (as N)	M17-JI18935	NCP	%	93		70-130	Pass	
Chloride	M17-JI18937	NCP	%	101		70-130	Pass	
Nitrate & Nitrite (as N)	M17-JI18935	NCP	%	91		70-130	Pass	
Nitrate (as N)	M17-JI18935	NCP	%	91		70-130	Pass	
Nitrite (as N)	M17-JI18935	NCP	%	101		70-130	Pass	
Sulphate (as S)	M17-JI17512	NCP	%	104		70-130	Pass	
Sulphate (as SO4)	M17-JI17512	NCP	%	104		70-130	Pass	
<b>Spike - % Recovery</b>								
<b>Heavy Metals</b>				Result 1				
Arsenic	S17-JI18631	NCP	%	106		75-125	Pass	
Cadmium	S17-JI18631	NCP	%	102		75-125	Pass	
Chromium	S17-JI18631	NCP	%	103		75-125	Pass	
Copper	S17-JI18631	NCP	%	98		75-125	Pass	
Iron (filtered)	M17-JI20060	NCP	%	93		70-130	Pass	
Lead	S17-JI18631	NCP	%	100		75-125	Pass	
Manganese	S17-JI18631	NCP	%	76		75-125	Pass	
Manganese (filtered)	M17-JI18934	NCP	%	97		70-130	Pass	
Mercury	S17-JI18631	NCP	%	100		70-130	Pass	
Mercury (filtered)	M17-JI19956	NCP	%	96		70-130	Pass	



Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel	S17-JI18631	NCP	%	98			75-125	Pass	
Selenium	S17-JI18631	NCP	%	101			75-125	Pass	
Zinc	S17-JI18631	NCP	%	99			75-125	Pass	
<b>Spike - % Recovery</b>									
<b>Alkali Metals</b>				Result 1					
Calcium	M17-JI19924	NCP	%	121			70-130	Pass	
Magnesium	M17-JI19924	NCP	%	121			70-130	Pass	
Potassium	M17-JI19924	NCP	%	100			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>Heavy Metals</b>				Result 1					
Aluminium	S17-JI18631	NCP	%	79			75-125	Pass	
Aluminium (filtered)	M17-JI19263	CP	%	95			75-125	Pass	
Arsenic (filtered)	M17-JI19263	CP	%	99			70-130	Pass	
Cadmium (filtered)	M17-JI19263	CP	%	84			70-130	Pass	
Chromium (filtered)	M17-JI19263	CP	%	91			70-130	Pass	
Copper (filtered)	M17-JI19263	CP	%	83			70-130	Pass	
Iron	M17-JI19923	NCP	%	104			75-125	Pass	
Lead (filtered)	M17-JI19263	CP	%	84			70-130	Pass	
Nickel (filtered)	M17-JI19263	CP	%	86			70-130	Pass	
Selenium (filtered)	M17-JI19263	CP	%	98			70-130	Pass	
Zinc (filtered)	M17-JI19263	CP	%	87			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1	Result 2	RPD			
TRH C6-C9	M17-JI20077	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	M17-JI19908	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M17-JI19908	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M17-JI19908	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
<b>Duplicate</b>									
<b>BTEX</b>				Result 1	Result 2	RPD			
Benzene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	M17-JI20077	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	M17-JI20077	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1	Result 2	RPD			
Naphthalene	M17-JI20077	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	M17-JI20077	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	M17-JI19908	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	M17-JI19908	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	M17-JI19908	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
<b>Duplicate</b>									
<b>Volatile Organics</b>				Result 1	Result 2	RPD			
1.1-Dichloroethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1-Dichloroethene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1-Trichloroethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2-Trichloroethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dibromoethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichlorobenzene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloroethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	



Duplicate								
Volatile Organics				Result 1	Result 2	RPD		
1.2-Dichloropropane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
1.2.3-Trichloropropane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
1.2.4-Trimethylbenzene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
1.3-Dichlorobenzene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
1.3-Dichloropropane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
1.3.5-Trimethylbenzene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
1.4-Dichlorobenzene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
2-Butanone (MEK)	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
2-Propanone (Acetone)	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
4-Chlorotoluene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
4-Methyl-2-pentanone (MIBK)	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Allyl chloride	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Bromobenzene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Bromochloromethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Bromodichloromethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Bromoform	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Bromomethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Carbon disulfide	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Carbon Tetrachloride	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chlorobenzene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chloroethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chloroform	M17-JI20077	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Chloromethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
cis-1.2-Dichloroethene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
cis-1.3-Dichloropropene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibromochloromethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibromomethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dichlorodifluoromethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Iodomethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Isopropyl benzene (Cumene)	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Methylene Chloride	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Styrene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Tetrachloroethene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
trans-1.2-Dichloroethene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
trans-1.3-Dichloropropene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Trichloroethene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Trichlorofluoromethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Vinyl chloride	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Acenaphthylene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Anthracene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benz(a)anthracene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(a)pyrene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(b&j)fluoranthene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(g,h,i)perylene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(k)fluoranthene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chrysene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibenz(a,h)anthracene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluoranthene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluorene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Indeno(1.2.3-cd)pyrene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Naphthalene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass



<b>Duplicate</b>								
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1	Result 2	RPD		
Phenanthrene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
<b>Duplicate</b>								
				Result 1	Result 2	RPD		
Ammonia (as N)	M17-JI18935	NCP	mg/L	0.29	0.28	4.0	30%	Pass
Chloride	M17-JI17511	NCP	mg/L	380	380	<1	30%	Pass
Fluoride	M17-JI19924	NCP	mg/L	0.8	0.8	5.8	30%	Pass
Nitrate & Nitrite (as N)	M17-JI18935	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Nitrate (as N)	M17-JI18935	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Nitrite (as N)	M17-JI18935	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
pH	M17-JI18935	NCP	pH Units	6.5	6.6	pass	30%	Pass
Phosphate total (as P)	M17-JI18930	NCP	mg/L	0.22	0.22	3.0	30%	Pass
Sulphate (as S)	M17-JI18936	NCP	mg/L	< 5	< 5	<1	30%	Pass
Sulphate (as SO4)	M17-JI18936	NCP	mg/L	6.6	6.2	5.9	30%	Pass
Sulphite (as S)	M17-JI25277	NCP	mg/L	< 10	< 10	<1	30%	Pass
Thiosulphate (as S)	M17-JI25277	NCP	mg/L	< 20	< 20	<1	30%	Pass
Total Dissolved Solids	M17-JI19262	CP	mg/L	1100	1100	2.0	30%	Pass
Total Organic Carbon	M17-JI17554	NCP	mg/L	240	250	5.0	30%	Pass
<b>Duplicate</b>								
<b>Alkalinity (speciated)</b>				Result 1	Result 2	RPD		
Bicarbonate Alkalinity (as CaCO3)	M17-JI18935	NCP	mg/L	51	45	13	30%	Pass
<b>Duplicate</b>								
<b>Heavy Metals</b>				Result 1	Result 2	RPD		
Arsenic	S17-JI18631	NCP	mg/L	0.004	0.004	3.0	30%	Pass
Cadmium	S17-JI18631	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium	S17-JI18631	NCP	mg/L	0.001	0.002	29	30%	Pass
Copper	S17-JI18631	NCP	mg/L	0.009	0.008	11	30%	Pass
Lead	S17-JI18631	NCP	mg/L	0.005	0.004	12	30%	Pass
Manganese	S17-JI18631	NCP	mg/L	0.37	0.36	4.0	30%	Pass
Mercury	S17-JI18631	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel	S17-JI18631	NCP	mg/L	0.002	0.002	5.0	30%	Pass
Selenium	S17-JI18631	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Zinc	S17-JI18631	NCP	mg/L	0.065	0.064	2.0	30%	Pass
<b>Duplicate</b>								
<b>Alkali Metals</b>				Result 1	Result 2	RPD		
Calcium	B17-JI16715	NCP	mg/L	6.1	7.4	19	30%	Pass
Magnesium	B17-JI16715	NCP	mg/L	5.0	5.3	5.0	30%	Pass
Potassium	B17-JI16715	NCP	mg/L	0.6	0.5	13	30%	Pass
Sodium	B17-JI16715	NCP	mg/L	3.4	3.4	<1	30%	Pass
<b>Duplicate</b>								
<b>Heavy Metals</b>				Result 1	Result 2	RPD		
Aluminium	S17-JI18631	NCP	mg/L	0.36	0.36	<1	30%	Pass
Aluminium (filtered)	M17-JI19263	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Arsenic (filtered)	M17-JI19263	CP	mg/L	0.005	0.004	3.0	30%	Pass
Cadmium (filtered)	M17-JI19263	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium (filtered)	M17-JI19263	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	M17-JI19263	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Iron	M17-JI18934	NCP	mg/L	1.3	1.4	6.0	30%	Pass
Iron (filtered)	M17-JI19263	CP	mg/L	1.4	1.4	3.0	30%	Pass
Lead (filtered)	M17-JI19263	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Manganese (filtered)	M17-JI19263	CP	mg/L	0.24	0.24	<1	30%	Pass
Mercury (filtered)	M17-JI19263	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel (filtered)	M17-JI19263	CP	mg/L	0.018	0.020	8.0	30%	Pass
Selenium (filtered)	M17-JI19263	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Zinc (filtered)	M17-JI19263	CP	mg/L	0.007	0.008	17	30%	Pass



## Comments

### Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

### Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

### Authorised By

Natalie Krasselt	Analytical Services Manager
Alex Petridis	Senior Analyst-Metal (VIC)
Alex Petridis	Senior Analyst-Organic (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)



### Glenn Jackson

#### National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

\* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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**AECOM Aust Pty Ltd Melbourne**  
**Collins Square, Tower 2, Level 11, 727 Collins Street**  
**Docklands**  
**VIC 3008**



**NATA Accredited**  
**Accreditation Number 1261**  
**Site Number 1254**

Accredited for compliance with ISO/IEC 17025 – Testing  
 The results of the tests, calibrations and/or  
 measurements included in this document are traceable  
 to Australian/national standards.

**Attention:** Averyll Coyne

**Report** 554577-W-V2

Project name

Project ID 60537182

Received Date Jul 17, 2017

Client Sample ID			QC313_14/7/17	QC110_14/7/17	QC115_17/7/17
Sample Matrix			Water	Water	Water
Eurofins   mgt Sample No.			M17-JI19262	M17-JI19263	M17-JI19264
Date Sampled			Jul 14, 2017	Jul 14, 2017	Jul 17, 2017
Test/Reference	LOR	Unit			
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>					
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	-
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	-
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	-
TRH C10-36 (Total)	0.1	mg/L	< 0.1	< 0.1	-
<b>BTEX</b>					
Benzene	0.001	mg/L	-	-	< 0.001
Toluene	0.001	mg/L	-	-	< 0.001
Ethylbenzene	0.001	mg/L	-	-	< 0.001
m&p-Xylenes	0.002	mg/L	-	-	< 0.002
o-Xylene	0.001	mg/L	-	-	< 0.001
Xylenes - Total	0.003	mg/L	-	-	< 0.003
4-Bromofluorobenzene (surr.)	1	%	-	-	140
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>					
Naphthalene <sup>N02</sup>	0.01	mg/L	< 0.01	< 0.01	< 0.01
TRH C6-C10 less BTEX (F1) <sup>N04</sup>	0.02	mg/L	< 0.02	< 0.02	< 0.02
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	-
TRH >C10-C16 less Naphthalene (F2) <sup>N01</sup>	0.05	mg/L	< 0.05	< 0.05	-
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	-
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	-
<b>Volatile Organics</b>					
1.1-Dichloroethane	0.001	mg/L	< 0.001	0.003	-
1.1-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	-
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	-
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	-
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	-
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	-
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001	-
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	-
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	-
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	-
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001	-
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	-
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	-



Client Sample ID			QC313_14/7/17	QC110_14/7/17	QC115_17/7/17
Sample Matrix			Water	Water	Water
Eurofins   mgt Sample No.			M17-JI19262	M17-JI19263	M17-JI19264
Date Sampled			Jul 14, 2017	Jul 14, 2017	Jul 17, 2017
Test/Reference	LOR	Unit			
<b>Volatile Organics</b>					
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	-
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	-
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	-
2-Butanone (MEK)	0.001	mg/L	< 0.001	< 0.001	-
2-Propanone (Acetone)	0.001	mg/L	< 0.001	< 0.001	-
4-Chlorotoluene	0.001	mg/L	< 0.001	< 0.001	-
4-Methyl-2-pentanone (MIBK)	0.001	mg/L	< 0.001	< 0.001	-
Allyl chloride	0.001	mg/L	< 0.001	< 0.001	-
Benzene	0.001	mg/L	< 0.001	< 0.001	-
Bromobenzene	0.001	mg/L	< 0.001	< 0.001	-
Bromochloromethane	0.001	mg/L	< 0.001	< 0.001	-
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001	-
Bromoform	0.001	mg/L	< 0.001	< 0.001	-
Bromomethane	0.001	mg/L	< 0.001	< 0.001	-
Carbon disulfide	0.001	mg/L	< 0.001	< 0.001	-
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001	-
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001	-
Chloroethane	0.001	mg/L	< 0.001	< 0.001	-
Chloroform	0.005	mg/L	< 0.005	< 0.005	-
Chloromethane	0.001	mg/L	< 0.001	< 0.001	-
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	-
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	-
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001	-
Dibromomethane	0.001	mg/L	< 0.001	< 0.001	-
Dichlorodifluoromethane	0.001	mg/L	< 0.001	< 0.001	-
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	-
Iodomethane	0.001	mg/L	< 0.001	< 0.001	-
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	< 0.001	-
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	-
Methylene Chloride	0.001	mg/L	< 0.001	< 0.001	-
o-Xylene	0.001	mg/L	< 0.001	< 0.001	-
Styrene	0.001	mg/L	< 0.001	< 0.001	-
Tetrachloroethene	0.001	mg/L	< 0.001	< 0.001	-
Toluene	0.001	mg/L	< 0.001	< 0.001	-
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	-
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	-
Trichloroethene	0.001	mg/L	< 0.001	< 0.001	-
Trichlorofluoromethane	0.001	mg/L	< 0.001	< 0.001	-
Vinyl chloride	0.001	mg/L	< 0.001	< 0.001	-
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	-
Fluorobenzene (surr.)	1	%	80	78	-
4-Bromofluorobenzene (surr.)	1	%	74	77	-
<b>Polycyclic Aromatic Hydrocarbons</b>					
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	-
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	-
Anthracene	0.001	mg/L	< 0.001	< 0.001	-
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	-
Benzo(b&j)fluoranthene <sup>N07</sup>	0.001	mg/L	< 0.001	< 0.001	-

Client Sample ID			QC313_14/7/17	QC110_14/7/17	QC115_17/7/17
Sample Matrix			Water	Water	Water
Eurofins   mgt Sample No.			M17-JI19262	M17-JI19263	M17-JI19264
Date Sampled			Jul 14, 2017	Jul 14, 2017	Jul 17, 2017
Test/Reference	LOR	Unit			
<b>Polycyclic Aromatic Hydrocarbons</b>					
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	-
Chrysene	0.001	mg/L	< 0.001	< 0.001	-
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	-
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	-
Fluorene	0.001	mg/L	< 0.001	< 0.001	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	-
Naphthalene	0.001	mg/L	< 0.001	< 0.001	-
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	-
Pyrene	0.001	mg/L	< 0.001	< 0.001	-
Total PAH*	0.001	mg/L	< 0.001	< 0.001	-
2-Fluorobiphenyl (surr.)	1	%	93	91	-
p-Terphenyl-d14 (surr.)	1	%	138	133	-
<b>Ammonia (as N)</b>					
Ammonia (as N)	0.01	mg/L	10.0	3.1	-
Chloride	1	mg/L	45	4300	-
Fluoride	0.5	mg/L	< 0.5	0.8	-
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	< 0.05	-
Nitrate (as N)	0.02	mg/L	0.02	< 0.02	-
Nitrite (as N)	0.02	mg/L	< 0.02	< 0.02	-
pH	0.1	pH Units	7.5	7.6	-
Phosphate total (as P)	0.05	mg/L	0.42	0.19	-
Sulphate (as S)	5	mg/L	100	340	-
Sulphate (as SO4)	5	mg/L	300	1000	-
Sulphite (as S)	0.5	mg/L	< 1	< 1	-
Thiosulphate (as S)	1	mg/L	< 2	< 2	-
Total Dissolved Solids	10	mg/L	1100	7700	-
Total Organic Carbon	5	mg/L	< 5	6.4	-
Total Oxidised Sulphur (as S)	10	mg/L	100	340	-
<b>Alkalinity (speciated)</b>					
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	740	490	-
<b>Heavy Metals</b>					
Aluminium	0.05	mg/L	13	0.52	-
Aluminium (filtered)	0.05	mg/L	< 0.05	< 0.05	-
Arsenic	0.001	mg/L	0.024	0.006	-
Arsenic (filtered)	0.001	mg/L	0.003	0.005	-
Cadmium	0.0002	mg/L	0.0002	< 0.0002	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	-
Chromium	0.001	mg/L	0.042	0.003	-
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Copper	0.001	mg/L	0.013	< 0.001	-
Copper (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Iron	0.05	mg/L	35	2.1	-
Iron (filtered)	0.05	mg/L	7.9	1.4	-
Lead	0.001	mg/L	0.35	< 0.001	-
Lead (filtered)	0.001	mg/L	0.002	< 0.001	-
Manganese	0.005	mg/L	0.50	0.29	-
Manganese (filtered)	0.005	mg/L	0.38	0.24	-
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	-



Client Sample ID			QC313_14/7/17	QC110_14/7/17	QC115_17/7/17
Sample Matrix			Water	Water	Water
Eurofins   mgt Sample No.			M17-JI19262	M17-JI19263	M17-JI19264
Date Sampled			Jul 14, 2017	Jul 14, 2017	Jul 17, 2017
Test/Reference	LOR	Unit			
<b>Heavy Metals</b>					
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	-
Nickel	0.001	mg/L	0.054	0.019	-
Nickel (filtered)	0.001	mg/L	0.009	0.018	-
Selenium	0.001	mg/L	0.003	< 0.001	-
Selenium (filtered)	0.001	mg/L	< 0.001	< 0.001	-
Zinc	0.005	mg/L	0.093	0.008	-
Zinc (filtered)	0.005	mg/L	0.016	0.007	-
<b>Alkali Metals</b>					
Calcium	0.5	mg/L	230	350	-
Magnesium	0.5	mg/L	95	430	-
Potassium	0.5	mg/L	23	130	-
Sodium	0.5	mg/L	190	3000	-

## Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C36	Melbourne	Jul 20, 2017	7 Day
BTEX - Method: TRH C6-C40 - LTM-ORG-2010	Melbourne	Jul 18, 2017	14 Day
Volatile Organics - Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	Melbourne	Jul 18, 2017	7 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Melbourne	Jul 18, 2017	7 Day
Total Recoverable Hydrocarbons - Method: TRH C6-C40 - LTM-ORG-2010	Melbourne	Jul 18, 2017	7 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Melbourne	Jul 20, 2017	7 Day
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Water by GCMS	Melbourne	Jul 20, 2017	7 Day
Ammonia (as N) - Method: APHA 4500-NH3 Ammonia Nitrogen by FIA	Melbourne	Jul 18, 2017	28 Day
Chloride - Method: LTM-INO-4090 Chloride by Discrete Analyser	Melbourne	Jul 18, 2017	28 Day
Fluoride - Method: LM-LTM-INO-4300 (Fluoride by Ion Chromatography)	Melbourne	Jul 19, 2017	28 Day
Nitrate & Nitrite (as N) - Method: APHA 4500-NO3/NO2 Nitrate-Nitrite Nitrogen by FIA	Melbourne	Jul 18, 2017	28 Day
Nitrate (as N) - Method: APHA 4500-NO3 Nitrate Nitrogen by FIA	Melbourne	Jul 18, 2017	7 Day
Nitrite (as N) - Method: APHA 4500-NO2 Nitrite Nitrogen by FIA	Melbourne	Jul 18, 2017	2 Day
pH - Method: LTM-GEN-7090 pH in water by ISE	Melbourne	Jul 18, 2017	0 Hours
Phosphate total (as P) - Method: APHA 4500-P E. Phosphorous	Melbourne	Jul 18, 2017	28 Day
Sulphate (as SO4) - Method: LTM-INO-4110 Sulfate by Discrete Analyser	Melbourne	Jul 18, 2017	28 Day
Total Dissolved Solids - Method: LM-LTM-INO-4110 (Total Dissolved Solids @ 178°C - 182°C)	Melbourne	Jul 18, 2017	7 Day
Total Organic Carbon - Method: APHA 5310B Total Organic Carbon	Melbourne	Jul 18, 2017	28 Day
Alkalinity (speciated) - Method: APHA 2320 Alkalinity by Titration	Melbourne	Jul 18, 2017	14 Day
Heavy Metals - Method: LTM-MET-3040 Metals in Waters by ICP-MS	Melbourne	Jul 18, 2017	180 Day
Heavy Metals (filtered) - Method: LTM-MET-3040 Metals in Waters by ICP-MS	Melbourne	Jul 18, 2017	180 Day
Mercury (filtered) - Method: USEPA 7470/1 Mercury	Melbourne	Jul 18, 2017	28 Day
Alkali Metals - Method: USEPA 6010 Alkali Metals	Melbourne	Jul 18, 2017	180 Day
Total Oxidised Sulphur Set (as S)			
Sulphate (as S) - Method: LTM-INO-4110 Sulfate by Discrete Analyser	Melbourne	Jul 18, 2017	28 Day
Sulphite (as S)	Melbourne	Jul 18, 2017	2 Day



**Description**

- Method: LTM-INO-4240 Sulfite & Thiosulfate in Water

Thiosulphate (as S)

- Method: LTM-INO-4240 Sulfite & Thiosulfate in Water

Total Oxidised Sulphur (as S)

**Testing Site****Extracted****Holding Time**

Melbourne

Jul 18, 2017

2 Day

Melbourne

Jul 18, 2017

2 Day





## Internal Quality Control Review and Glossary

### General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
- All soil results are reported on a dry basis, unless otherwise stated.
- All biota results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- This report replaces any interim results previously issued.

### Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

**\*\*NOTE:** pH duplicates are reported as a range NOT as RPD

### Units

**mg/kg:** milligrams per kilogram

**mg/L:** milligrams per litre

**ug/L:** micrograms per litre

**ppm:** Parts per million

**ppb:** Parts per billion

**%:** Percentage

**org/100mL:** Organisms per 100 millilitres

**NTU:** Nephelometric Turbidity Units

**MPN/100mL:** Most Probable Number of organisms per 100 millilitres

### Terms

<b>Dry</b>	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
<b>LOR</b>	Limit of Reporting.
<b>SPIKE</b>	Addition of the analyte to the sample and reported as percentage recovery.
<b>RPD</b>	Relative Percent Difference between two Duplicate pieces of analysis.
<b>LCS</b>	Laboratory Control Sample - reported as percent recovery.
<b>CRM</b>	Certified Reference Material - reported as percent recovery.
<b>Method Blank</b>	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
<b>Surr - Surrogate</b>	The addition of a like compound to the analyte target and reported as percentage recovery.
<b>Duplicate</b>	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
<b>USEPA</b>	United States Environmental Protection Agency
<b>APHA</b>	American Public Health Association
<b>TCLP</b>	Toxicity Characteristic Leaching Procedure
<b>COC</b>	Chain of Custody
<b>SRA</b>	Sample Receipt Advice
<b>QSM</b>	Quality Systems Manual ver 5.1 US Department of Defense
<b>CP</b>	Client Parent - QC was performed on samples pertaining to this report
<b>NCP</b>	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
<b>TEQ</b>	Toxic Equivalency Quotient

### QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

### QC Data General Comments

- Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
- Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
- Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
- Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
- Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
- pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
- Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
- Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
- For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
- Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

**Quality Control Results**

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Method Blank</b>							
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
<b>Method Blank</b>							
<b>BTEX</b>							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
<b>Method Blank</b>							
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>							
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
<b>Method Blank</b>							
<b>Volatile Organics</b>							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.001			0.001	Pass	
2-Propanone (Acetone)	mg/L	< 0.001			0.001	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.001			0.001	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.001			0.001	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	



Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chloroethane	mg/L	< 0.001			0.001	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.001			0.001	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Dichlorodifluoromethane	mg/L	< 0.001			0.001	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
Methylene Chloride	mg/L	< 0.001			0.001	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.001			0.001	Pass	
Vinyl chloride	mg/L	< 0.001			0.001	Pass	
<b>Method Blank</b>							
<b>Polycyclic Aromatic Hydrocarbons</b>							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
<b>Method Blank</b>							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chloride	mg/L	< 1			1	Pass	
Fluoride	mg/L	< 0.5			0.5	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.05			0.05	Pass	
Sulphate (as S)	mg/L	< 5			5	Pass	
Sulphate (as SO4)	mg/L	< 5			5	Pass	
Sulphite (as S)	mg/L	< 0.5			0.5	Pass	
Thiosulphate (as S)	mg/L	< 1			1	Pass	
Total Organic Carbon	mg/L	< 5			5	Pass	
<b>Method Blank</b>							
<b>Alkalinity (speciated)</b>							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
<b>Method Blank</b>							
<b>Heavy Metals</b>							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aluminium	mg/L	< 0.05			0.05	Pass	
Aluminium (filtered)	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Iron	mg/L	< 0.05			0.05	Pass	
Iron (filtered)	mg/L	< 0.05			0.05	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Manganese (filtered)	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Selenium	mg/L	< 0.001			0.001	Pass	
Selenium (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
<b>Method Blank</b>							
<b>Alkali Metals</b>							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
<b>LCS - % Recovery</b>							
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>							
TRH C6-C9	%	81			70-130	Pass	
TRH C10-C14	%	81			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>BTEX</b>							
Benzene	%	88			70-130	Pass	
Toluene	%	78			70-130	Pass	
Ethylbenzene	%	77			70-130	Pass	
m&p-Xylenes	%	79			70-130	Pass	
Xylenes - Total	%	82			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>							
Naphthalene	%	108			70-130	Pass	
TRH C6-C10	%	73			70-130	Pass	
TRH >C10-C16	%	74			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Volatile Organics</b>							
1.1-Dichloroethene	%	95			70-130	Pass	
1.1.1-Trichloroethane	%	125			70-130	Pass	
1.2-Dichlorobenzene	%	129			70-130	Pass	
1.2-Dichloroethane	%	102			70-130	Pass	
Trichloroethene	%	97			70-130	Pass	
<b>LCS - % Recovery</b>							



Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Polycyclic Aromatic Hydrocarbons</b>							
Acenaphthene	%	130			70-130	Pass	
Acenaphthylene	%	126			70-130	Pass	
Anthracene	%	124			70-130	Pass	
Benz(a)anthracene	%	124			70-130	Pass	
Benzo(a)pyrene	%	121			70-130	Pass	
Benzo(b&j)fluoranthene	%	123			70-130	Pass	
Benzo(g,h,i)perylene	%	95			70-130	Pass	
Benzo(k)fluoranthene	%	130			70-130	Pass	
Chrysene	%	129			70-130	Pass	
Dibenz(a,h)anthracene	%	79			70-130	Pass	
Fluoranthene	%	123			70-130	Pass	
Fluorene	%	128			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	87			70-130	Pass	
Naphthalene	%	112			70-130	Pass	
Phenanthrene	%	124			70-130	Pass	
Pyrene	%	122			70-130	Pass	
<b>LCS - % Recovery</b>							
Ammonia (as N)	%	95			70-130	Pass	
Chloride	%	102			70-130	Pass	
Fluoride	%	111			70-130	Pass	
Nitrate & Nitrite (as N)	%	94			70-130	Pass	
Nitrate (as N)	%	94			70-130	Pass	
Nitrite (as N)	%	100			70-130	Pass	
Phosphate total (as P)	%	93			70-130	Pass	
Sulphate (as S)	%	113			70-130	Pass	
Sulphate (as SO4)	%	113			70-130	Pass	
Thiosulphate (as S)	%	102			70-130	Pass	
Total Dissolved Solids	%	92			70-130	Pass	
Total Organic Carbon	%	109			70-130	Pass	
<b>LCS - % Recovery</b>							
<b>Heavy Metals</b>							
Aluminium	%	104			80-120	Pass	
Aluminium (filtered)	%	104			80-120	Pass	
Arsenic	%	102			80-120	Pass	
Arsenic (filtered)	%	102			80-120	Pass	
Cadmium	%	102			80-120	Pass	
Cadmium (filtered)	%	102			80-120	Pass	
Chromium	%	103			80-120	Pass	
Chromium (filtered)	%	103			80-120	Pass	
Copper	%	99			80-120	Pass	
Copper (filtered)	%	99			80-120	Pass	
Iron	%	100			80-120	Pass	
Iron (filtered)	%	99			80-120	Pass	
Lead	%	102			80-120	Pass	
Lead (filtered)	%	102			80-120	Pass	
Manganese	%	102			80-120	Pass	
Manganese (filtered)	%	102			80-120	Pass	
Mercury	%	100			75-125	Pass	
Mercury (filtered)	%	100			70-130	Pass	
Nickel	%	99			80-120	Pass	
Nickel (filtered)	%	99			80-120	Pass	
Selenium	%	103			80-120	Pass	
Selenium (filtered)	%	103			80-120	Pass	

Test	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code		
Zinc	%	103	80-120	Pass			
Zinc (filtered)	%	103	80-120	Pass			
<b>LCS - % Recovery</b>							
<b>Alkali Metals</b>							
Calcium	%	108	70-130	Pass			
Magnesium	%	110	70-130	Pass			
Potassium	%	93	70-130	Pass			
Sodium	%	106	70-130	Pass			
Test	Lab Sample ID	QA Source	Units	Result 1	Acceptance Limits	Pass Limits	Qualifying Code
<b>Spike - % Recovery</b>							
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1			
TRH C10-C14	M17-JI20075	NCP	%	109	70-130	Pass	
<b>Spike - % Recovery</b>							
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1			
TRH >C10-C16	M17-JI20075	NCP	%	104	70-130	Pass	
<b>Spike - % Recovery</b>							
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1			
Acenaphthene	M17-JI17508	NCP	%	75	70-130	Pass	
Acenaphthylene	M17-JI17508	NCP	%	80	70-130	Pass	
Anthracene	M17-JI17508	NCP	%	80	70-130	Pass	
Benz(a)anthracene	M17-JI17508	NCP	%	88	70-130	Pass	
Benzo(a)pyrene	M17-JI17508	NCP	%	78	70-130	Pass	
Benzo(b&j)fluoranthene	M17-JI17508	NCP	%	95	70-130	Pass	
Benzo(g,h,i)perylene	M17-JI17508	NCP	%	86	70-130	Pass	
Benzo(k)fluoranthene	M17-JI17508	NCP	%	124	70-130	Pass	
Chrysene	M17-JI17508	NCP	%	98	70-130	Pass	
Dibenz(a,h)anthracene	M17-JI17508	NCP	%	78	70-130	Pass	
Fluoranthene	M17-JI17508	NCP	%	101	70-130	Pass	
Fluorene	M17-JI17508	NCP	%	81	70-130	Pass	
Indeno(1,2,3-cd)pyrene	M17-JI17508	NCP	%	78	70-130	Pass	
Naphthalene	M17-JI17508	NCP	%	76	70-130	Pass	
Phenanthrene	M17-JI17508	NCP	%	80	70-130	Pass	
Pyrene	M17-JI17508	NCP	%	97	70-130	Pass	
<b>Spike - % Recovery</b>							
				Result 1			
Ammonia (as N)	M17-JI18935	NCP	%	93	70-130	Pass	
Chloride	M17-JI18937	NCP	%	101	70-130	Pass	
Nitrate & Nitrite (as N)	M17-JI18935	NCP	%	91	70-130	Pass	
Nitrate (as N)	M17-JI18935	NCP	%	91	70-130	Pass	
Nitrite (as N)	M17-JI18935	NCP	%	101	70-130	Pass	
Sulphate (as S)	M17-JI17512	NCP	%	104	70-130	Pass	
Sulphate (as SO4)	M17-JI17512	NCP	%	104	70-130	Pass	
<b>Spike - % Recovery</b>							
<b>Heavy Metals</b>				Result 1			
Arsenic	S17-JI18631	NCP	%	106	75-125	Pass	
Cadmium	S17-JI18631	NCP	%	102	75-125	Pass	
Chromium	S17-JI18631	NCP	%	103	75-125	Pass	
Copper	S17-JI18631	NCP	%	98	75-125	Pass	
Iron (filtered)	M17-JI20060	NCP	%	93	70-130	Pass	
Lead	S17-JI18631	NCP	%	100	75-125	Pass	
Manganese	S17-JI18631	NCP	%	76	75-125	Pass	
Manganese (filtered)	M17-JI18934	NCP	%	97	70-130	Pass	
Mercury	S17-JI18631	NCP	%	100	70-130	Pass	
Mercury (filtered)	M17-JI19956	NCP	%	96	70-130	Pass	



Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Nickel	S17-JI18631	NCP	%	98			75-125	Pass	
Selenium	S17-JI18631	NCP	%	101			75-125	Pass	
Zinc	S17-JI18631	NCP	%	99			75-125	Pass	
<b>Spike - % Recovery</b>									
<b>Alkali Metals</b>				Result 1					
Calcium	M17-JI19924	NCP	%	121			70-130	Pass	
Magnesium	M17-JI19924	NCP	%	121			70-130	Pass	
Potassium	M17-JI19924	NCP	%	100			70-130	Pass	
<b>Spike - % Recovery</b>									
<b>Heavy Metals</b>				Result 1					
Aluminium	S17-JI18631	NCP	%	79			75-125	Pass	
Aluminium (filtered)	M17-JI19263	CP	%	95			75-125	Pass	
Arsenic (filtered)	M17-JI19263	CP	%	99			70-130	Pass	
Cadmium (filtered)	M17-JI19263	CP	%	84			70-130	Pass	
Chromium (filtered)	M17-JI19263	CP	%	91			70-130	Pass	
Copper (filtered)	M17-JI19263	CP	%	83			70-130	Pass	
Iron	M17-JI19923	NCP	%	104			75-125	Pass	
Lead (filtered)	M17-JI19263	CP	%	84			70-130	Pass	
Nickel (filtered)	M17-JI19263	CP	%	86			70-130	Pass	
Selenium (filtered)	M17-JI19263	CP	%	98			70-130	Pass	
Zinc (filtered)	M17-JI19263	CP	%	87			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons - 1999 NEPM Fractions</b>				Result 1	Result 2	RPD			
TRH C6-C9	M17-JI20077	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	M17-JI19908	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M17-JI19908	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M17-JI19908	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
<b>Duplicate</b>									
<b>BTEX</b>				Result 1	Result 2	RPD			
Benzene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	M17-JI20077	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	M17-JI20077	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
<b>Duplicate</b>									
<b>Total Recoverable Hydrocarbons - 2013 NEPM Fractions</b>				Result 1	Result 2	RPD			
Naphthalene	M17-JI20077	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	M17-JI20077	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	M17-JI19908	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	M17-JI19908	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	M17-JI19908	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
<b>Duplicate</b>									
<b>Volatile Organics</b>				Result 1	Result 2	RPD			
1.1-Dichloroethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1-Dichloroethene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1-Trichloroethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2-Trichloroethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dibromoethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichlorobenzene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloroethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate								
Volatile Organics				Result 1	Result 2	RPD		
1.2-Dichloropropane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
1.2.3-Trichloropropane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
1.2.4-Trimethylbenzene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
1.3-Dichlorobenzene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
1.3-Dichloropropane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
1.3.5-Trimethylbenzene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
1.4-Dichlorobenzene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
2-Butanone (MEK)	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
2-Propanone (Acetone)	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
4-Chlorotoluene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
4-Methyl-2-pentanone (MIBK)	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Allyl chloride	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Bromobenzene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Bromochloromethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Bromodichloromethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Bromoform	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Bromomethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Carbon disulfide	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Carbon Tetrachloride	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chlorobenzene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chloroethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chloroform	M17-JI20077	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Chloromethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
cis-1.2-Dichloroethene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
cis-1.3-Dichloropropene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibromochloromethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibromomethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dichlorodifluoromethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Iodomethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Isopropyl benzene (Cumene)	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Methylene Chloride	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Styrene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Tetrachloroethene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
trans-1.2-Dichloroethene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
trans-1.3-Dichloropropene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Trichloroethene	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Trichlorofluoromethane	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Vinyl chloride	M17-JI20077	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Acenaphthylene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Anthracene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benz(a)anthracene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(a)pyrene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(b&j)fluoranthene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(g,h,i)perylene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(k)fluoranthene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chrysene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibenz(a,h)anthracene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluoranthene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluorene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Indeno(1.2.3-cd)pyrene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Naphthalene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass



<b>Duplicate</b>								
<b>Polycyclic Aromatic Hydrocarbons</b>				Result 1	Result 2	RPD		
Phenanthrene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	M17-JI19908	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
<b>Duplicate</b>								
				Result 1	Result 2	RPD		
Ammonia (as N)	M17-JI18935	NCP	mg/L	0.29	0.28	4.0	30%	Pass
Chloride	M17-JI17511	NCP	mg/L	380	380	<1	30%	Pass
Fluoride	M17-JI19924	NCP	mg/L	0.8	0.8	5.8	30%	Pass
Nitrate & Nitrite (as N)	M17-JI18935	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Nitrate (as N)	M17-JI18935	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Nitrite (as N)	M17-JI18935	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
pH	M17-JI18935	NCP	pH Units	6.5	6.6	pass	30%	Pass
Phosphate total (as P)	M17-JI18930	NCP	mg/L	0.22	0.22	3.0	30%	Pass
Sulphate (as S)	M17-JI18936	NCP	mg/L	< 5	< 5	<1	30%	Pass
Sulphate (as SO4)	M17-JI18936	NCP	mg/L	6.6	6.2	5.9	30%	Pass
Sulphite (as S)	M17-JI25277	NCP	mg/L	< 10	< 10	<1	30%	Pass
Thiosulphate (as S)	M17-JI25277	NCP	mg/L	< 20	< 20	<1	30%	Pass
Total Dissolved Solids	M17-JI19262	CP	mg/L	1100	1100	2.0	30%	Pass
Total Organic Carbon	M17-JI17554	NCP	mg/L	240	250	5.0	30%	Pass
<b>Duplicate</b>								
<b>Alkalinity (speciated)</b>				Result 1	Result 2	RPD		
Bicarbonate Alkalinity (as CaCO3)	M17-JI18935	NCP	mg/L	51	45	13	30%	Pass
<b>Duplicate</b>								
<b>Heavy Metals</b>				Result 1	Result 2	RPD		
Arsenic	S17-JI18631	NCP	mg/L	0.004	0.004	3.0	30%	Pass
Cadmium	S17-JI18631	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium	S17-JI18631	NCP	mg/L	0.001	0.002	29	30%	Pass
Copper	S17-JI18631	NCP	mg/L	0.009	0.008	11	30%	Pass
Lead	S17-JI18631	NCP	mg/L	0.005	0.004	12	30%	Pass
Manganese	S17-JI18631	NCP	mg/L	0.37	0.36	4.0	30%	Pass
Mercury	S17-JI18631	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel	S17-JI18631	NCP	mg/L	0.002	0.002	5.0	30%	Pass
Selenium	S17-JI18631	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Zinc	S17-JI18631	NCP	mg/L	0.065	0.064	2.0	30%	Pass
<b>Duplicate</b>								
<b>Alkali Metals</b>				Result 1	Result 2	RPD		
Calcium	B17-JI16715	NCP	mg/L	6.1	7.4	19	30%	Pass
Magnesium	B17-JI16715	NCP	mg/L	5.0	5.3	5.0	30%	Pass
Potassium	B17-JI16715	NCP	mg/L	0.6	0.5	13	30%	Pass
Sodium	B17-JI16715	NCP	mg/L	3.4	3.4	<1	30%	Pass
<b>Duplicate</b>								
<b>Heavy Metals</b>				Result 1	Result 2	RPD		
Aluminium	S17-JI18631	NCP	mg/L	0.36	0.36	<1	30%	Pass
Aluminium (filtered)	M17-JI19263	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Arsenic (filtered)	M17-JI19263	CP	mg/L	0.005	0.004	3.0	30%	Pass
Cadmium (filtered)	M17-JI19263	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium (filtered)	M17-JI19263	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	M17-JI19263	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Iron	M17-JI18934	NCP	mg/L	1.3	1.4	6.0	30%	Pass
Iron (filtered)	M17-JI19263	CP	mg/L	1.4	1.4	3.0	30%	Pass
Lead (filtered)	M17-JI19263	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Manganese (filtered)	M17-JI19263	CP	mg/L	0.24	0.24	<1	30%	Pass
Mercury (filtered)	M17-JI19263	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel (filtered)	M17-JI19263	CP	mg/L	0.018	0.020	8.0	30%	Pass
Selenium (filtered)	M17-JI19263	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Zinc (filtered)	M17-JI19263	CP	mg/L	0.007	0.008	17	30%	Pass

## Comments

### Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

### Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

### Authorised By

Natalie Krasselt	Analytical Services Manager
Alex Petridis	Senior Analyst-Metal (VIC)
Alex Petridis	Senior Analyst-Organic (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)



### Glenn Jackson

#### National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

\* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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## CERTIFICATE OF ANALYSIS

**Work Order** : **EM1709029**  
**Client** : **AECOM Australia Pty Ltd**  
**Contact** : **MS AVERYLL COYNE**  
**Address** : **COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET  
MELBOURNE VIC, AUSTRALIA 3004**  
**Telephone** : **+61 03 9653 1234**  
**Project** : **60537182**  
**Order number** : **60537182 Task 3.2**  
**C-O-C number** : **----**  
**Sampler** : **BH, BP, JM**  
**Site** : **----**  
**Quote number** : **ME/199/16**  
**No. of samples received** : **12**  
**No. of samples analysed** : **12**

**Page** : 1 of 21  
**Laboratory** : Environmental Division Melbourne  
**Contact** : Carol Walsh  
**Address** : 4 Westall Rd Springvale VIC Australia 3171  
**Telephone** : +61-3-8549 9608  
**Date Samples Received** : 11-Jul-2017 10:30  
**Date Analysis Commenced** : 12-Jul-2017  
**Issue Date** : 17-Jul-2017 12:46



Accreditation No. 825  
 Accredited for compliance with  
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

**Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.**

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Herman Lin	Laboratory Manager	Melbourne Inorganics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC



## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
LOR = Limit of reporting  
^ = This result is computed from individual analyte detections at or above the level of reporting  
ø = ALS is not NATA accredited for these tests.  
~ = Indicates an estimated value.

- It is recognised that Nitrite +Nitrate as N is less than Nitrite as N for sample #2. However, the difference is within experimental variation of the methods.
- It is recognised that total metals is less than dissolved metals for EM1709029. However, the difference is within experimental variation of the methods.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- EP074-WF: Particular sample EM1709029\_10 has LOR raised for Acetone due to laboratory background.
- ED045G: The presence of thiocyanate can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- EG035T: EM1709020 #2 Poor matrix spike recovery for mercury due to sample heterogeneity. Confirmed by re-extraction and re-analysis.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW01_10/07/17	GW07_10/07/17	QC200_10/07/17	QC201_10/07/17	GW31_10/07/17
Client sampling date / time				10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709029-001	EM1709029-002	EM1709029-003	EM1709029-004	EM1709029-005	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.68	7.28	----	----	6.97	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	2910	1380	----	----	6920	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	1600	1080	----	----	546	
Total Alkalinity as CaCO3	----	1	mg/L	1600	1080	----	----	546	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	182	108	----	----	1340	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	241	140	----	----	1930	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	866	205	----	----	3010	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	94	286	----	----	787	
Magnesium	7439-95-4	1	mg/L	119	53	----	----	210	
Sodium	7440-23-5	1	mg/L	776	189	----	----	1480	
Potassium	7440-09-7	1	mg/L	157	38	----	----	53	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	<0.01	0.02	<0.01	<0.01	<0.01	
Arsenic	7440-38-2	0.001	mg/L	0.002	0.010	<0.001	<0.001	0.014	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.003	0.002	<0.001	<0.001	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	0.001	<0.001	<0.001	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Manganese	7439-96-5	0.001	mg/L	0.120	0.150	----	----	0.353	
Nickel	7440-02-0	0.001	mg/L	0.039	0.011	<0.001	<0.001	0.006	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Zinc	7440-66-6	0.005	mg/L	<0.005	0.008	<0.005	<0.005	0.030	
Iron	7439-89-6	0.05	mg/L	3.53	6.89	<0.05	<0.05	27.4	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.04	4.02	<0.01	<0.01	20.0	
Arsenic	7440-38-2	0.001	mg/L	0.002	0.031	<0.001	<0.001	0.062	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW01_10/07/17	GW07_10/07/17	QC200_10/07/17	QC201_10/07/17	GW31_10/07/17
Client sampling date / time				10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709029-001	EM1709029-002	EM1709029-003	EM1709029-004	EM1709029-005	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.004	0.014	<0.001	<0.001	0.046	
Copper	7440-50-8	0.001	mg/L	0.006	0.013	<0.001	<0.001	0.020	
Nickel	7440-02-0	0.001	mg/L	0.044	0.025	<0.001	<0.001	0.034	
Lead	7439-92-1	0.001	mg/L	0.006	0.054	<0.001	<0.001	0.066	
Zinc	7440-66-6	0.005	mg/L	0.038	0.041	<0.005	<0.005	0.083	
Manganese	7439-96-5	0.001	mg/L	0.113	0.159	----	----	0.507	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	3.94	18.9	0.05	<0.05	63.4	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.4	0.4	----	----	0.3	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	68.8	32.0	----	----	0.32	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.02	----	----	<0.01	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	0.01	<0.01	----	----	0.48	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	0.01	0.01	----	----	0.48	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.30	<0.01	----	----	<0.01	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	60.2	29.6	----	----	124	
Total Cations	----	0.01	meq/L	52.2	27.8	----	----	122	
Ionic Balance	----	0.01	%	7.05	3.10	----	----	0.58	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	40	21	----	----	15	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	<1	----	----	<1	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW01_10/07/17	GW07_10/07/17	QC200_10/07/17	QC201_10/07/17	GW31_10/07/17
Client sampling date / time				10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709029-001	EM1709029-002	EM1709029-003	EM1709029-004	EM1709029-005	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	<1	----	----	<1	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	----	----	<1	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	----	----	<1	
Styrene	100-42-5	1	µg/L	<1	<1	----	----	<1	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	----	----	<1	
Isopropylbenzene	98-82-8	1	µg/L	<1	<1	----	----	<1	
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	----	----	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	----	----	<1	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	----	----	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	----	----	<1	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	----	----	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	----	----	<1	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	----	----	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	----	----	<10	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	----	----	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	----	----	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	----	----	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	----	----	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	<1	----	----	<1	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	----	----	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	----	----	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	----	----	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	----	----	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	----	----	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	----	----	<10	
Chloromethane	74-87-3	10	µg/L	<10	<10	----	----	<10	
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	----	----	<10.0	
Bromomethane	74-83-9	10	µg/L	<10	<10	----	----	<10	
Chloroethane	75-00-3	10	µg/L	<10	<10	----	----	<10	
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	----	----	<10	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW01_10/07/17	GW07_10/07/17	QC200_10/07/17	QC201_10/07/17	GW31_10/07/17
Client sampling date / time					10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709029-001	EM1709029-002	EM1709029-003	EM1709029-004	EM1709029-005	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	----	----	<1	
Iodomethane	74-88-4	1	µg/L	<1	<1	----	----	<1	
Methylene chloride	75-09-2	4	µg/L	<4	<4	----	----	<4	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	----	----	<1	
1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	----	----	<1	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	9	----	----	<1	
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	----	----	<1	
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	----	----	<1	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	----	----	<1	
1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	----	----	<1	
Trichloroethene	79-01-6	1	µg/L	<1	<1	----	----	<1	
Dibromomethane	74-95-3	1	µg/L	<1	<1	----	----	<1	
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	----	----	<1	
1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	----	----	<1	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	----	----	<1	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	----	----	<1	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	----	----	<1	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	----	----	<1	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	----	----	<1	
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	----	----	<1	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	----	----	<1	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	----	----	<1	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	----	----	<1.0	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	4	<1	----	----	<1	
Bromobenzene	108-86-1	1	µg/L	<1	<1	----	----	<1	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	----	----	<1	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	----	----	<1	
1,3-Dichlorobenzene	541-73-1	1	µg/L	1	<1	----	----	<1	
1,4-Dichlorobenzene	106-46-7	1	µg/L	1.3	<1.0	----	----	<1.0	
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	----	----	<1	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	----	----	<1	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	----	----	<1	
<b>EP074G: Trihalomethanes</b>									





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW01_10/07/17	GW07_10/07/17	QC200_10/07/17	QC201_10/07/17	GW31_10/07/17
Client sampling date / time				10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709029-001	EM1709029-002	EM1709029-003	EM1709029-004	EM1709029-005	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	<1	<1	----	----	<1	
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	----	----	<1	
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	----	----	<1	
Bromoform	75-25-2	1	µg/L	<1	<1	----	----	<1	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	<5	----	----	<5	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	----	----	<1.0	
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	----	----	<1.0	
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	----	----	<1.0	
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	----	----	<1.0	
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	----	----	<1.0	
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	----	----	<1.0	
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	----	----	<1.0	
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	----	----	<1.0	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	----	----	<1.0	
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	----	----	<1.0	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	----	----	<1.0	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	----	----	<1.0	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	----	----	<0.5	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	----	----	<1.0	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	----	----	<1.0	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	----	----	<1.0	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	----	----	<0.5	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	----	----	<0.5	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	80	<50	<50	<50	<50	
C15 - C28 Fraction	----	100	µg/L	280	<100	<100	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	360	<50	<50	<50	<50	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW01_10/07/17	GW07_10/07/17	QC200_10/07/17	QC201_10/07/17	GW31_10/07/17
Client sampling date / time				10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709029-001	EM1709029-002	EM1709029-003	EM1709029-004	EM1709029-005	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	120	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	240	<100	<100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	360	<100	<100	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	120	<100	<100	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	----	----	0.05	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.03	<0.02	----	----	<0.02	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.04	0.08	----	----	<0.01	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.1	2.0	----	----	<0.1	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.05	0.02	----	----	<0.02	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	----	----	<0.02	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW01_10/07/17	GW07_10/07/17	QC200_10/07/17	QC201_10/07/17	GW31_10/07/17
Client sampling date / time				10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709029-001	EM1709029-002	EM1709029-003	EM1709029-004	EM1709029-005	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.08	0.10	----	----	<0.01	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	----	----	<0.05	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	----	----	<0.05	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	----	----	<0.05	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	----	----	<0.05	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	----	----	<0.05	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	----	----	<0.02	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	----	----	<0.05	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	----	----	<0.05	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	----	----	<0.05	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW01_10/07/17	GW07_10/07/17	QC200_10/07/17	QC201_10/07/17	GW31_10/07/17
Client sampling date / time				10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709029-001	EM1709029-002	EM1709029-003	EM1709029-004	EM1709029-005	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	----	----	<0.05	
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	0.30	2.20	----	----	0.05	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.07	0.08	----	----	<0.01	
Sum of PFAS (WA DER List)	----	0.01	µg/L	0.30	2.20	----	----	0.05	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	95.4	93.0	----	----	96.9	
Toluene-D8	2037-26-5	1	%	101	98.8	----	----	99.2	
4-Bromofluorobenzene	460-00-4	1	%	91.6	105	----	----	95.1	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	25.2	36.0	----	----	41.5	
2-Chlorophenol-D4	93951-73-6	1	%	62.2	82.5	----	----	86.2	
2,4,6-Tribromophenol	118-79-6	1	%	59.9	75.2	----	----	76.0	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	53.2	71.8	----	----	75.3	
Anthracene-d10	1719-06-8	1	%	62.4	83.2	----	----	84.4	
4-Terphenyl-d14	1718-51-0	1	%	50.3	83.7	----	----	84.0	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	95.5	93.6	101	103	97.0	
Toluene-D8	2037-26-5	2	%	92.3	90.8	79.2	101	90.9	
4-Bromofluorobenzene	460-00-4	2	%	89.8	100	92.7	108	92.9	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	96.2	96.8	----	----	99.7	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW34_10/07/17	QC301_10/07/17	QC302_10/07/17	GW52_10/07/17	GW56_10/07/17
Client sampling date / time				10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709029-006	EM1709029-007	EM1709029-008	EM1709029-009	EM1709029-010	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.54	----	----	7.25	7.41	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	1960	----	----	1050	5530	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	565	----	----	397	1250	
Total Alkalinity as CaCO3	----	1	mg/L	565	----	----	397	1250	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	187	----	----	181	1250	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	277	----	----	320	1810	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	812	----	----	198	1540	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	92	----	----	85	369	
Magnesium	7439-95-4	1	mg/L	92	----	----	32	207	
Sodium	7440-23-5	1	mg/L	548	----	----	265	1370	
Potassium	7440-09-7	1	mg/L	46	----	----	11	171	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	----	0.30	<0.01	
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	0.008	0.003	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.001	<0.001	----	0.008	0.002	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	----	<0.001	0.009	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	<0.001	<0.001	
Manganese	7439-96-5	0.001	mg/L	0.088	----	----	0.017	0.460	
Nickel	7440-02-0	0.001	mg/L	0.002	<0.001	----	0.022	0.074	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	----	<0.01	<0.01	
Zinc	7440-66-6	0.005	mg/L	0.017	<0.005	----	0.014	0.045	
Iron	7439-89-6	0.05	mg/L	0.05	<0.05	----	1.56	0.43	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	4.46	<0.01	----	1.76	27.5	
Arsenic	7440-38-2	0.001	mg/L	0.033	<0.001	----	0.010	0.061	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW34_10/07/17	QC301_10/07/17	QC302_10/07/17	GW52_10/07/17	GW56_10/07/17
Client sampling date / time				10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709029-006	EM1709029-007	EM1709029-008	EM1709029-009	EM1709029-010	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	<0.0001	0.0002	
Chromium	7440-47-3	0.001	mg/L	0.013	<0.001	----	0.014	0.079	
Copper	7440-50-8	0.001	mg/L	0.004	<0.001	----	<0.001	0.059	
Nickel	7440-02-0	0.001	mg/L	0.006	<0.001	----	0.022	0.154	
Lead	7439-92-1	0.001	mg/L	0.006	<0.001	----	0.001	0.181	
Zinc	7440-66-6	0.005	mg/L	0.991	<0.005	----	0.012	0.191	
Manganese	7439-96-5	0.001	mg/L	0.128	----	----	0.018	0.657	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	----	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	9.71	<0.05	----	2.62	50.7	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.6	----	----	0.1	1.1	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	8.20	----	----	0.97	1.48	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	----	----	<0.01	0.05	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	0.01	----	----	<0.01	44.8	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	0.01	----	----	<0.01	44.9	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.99	----	----	<0.01	<0.01	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	38.1	----	----	17.3	94.4	
Total Cations	----	0.01	meq/L	37.2	----	----	18.7	99.4	
Ionic Balance	----	0.01	%	1.21	----	----	3.88	2.56	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	10	----	----	34	57	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	----	----	4	<1	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW34_10/07/17	QC301_10/07/17	QC302_10/07/17	GW52_10/07/17	GW56_10/07/17
Client sampling date / time				10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709029-006	EM1709029-007	EM1709029-008	EM1709029-009	EM1709029-010	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	----	----	<1	<1	
Ethylbenzene	100-41-4	1	µg/L	<1	----	----	<1	<1	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	----	----	<1	<1	
Styrene	100-42-5	1	µg/L	<1	----	----	<1	<1	
ortho-Xylene	95-47-6	1	µg/L	<1	----	----	<1	<1	
Isopropylbenzene	98-82-8	1	µg/L	<1	----	----	<1	<1	
n-Propylbenzene	103-65-1	1	µg/L	<1	----	----	<1	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	----	----	<1	<1	
sec-Butylbenzene	135-98-8	1	µg/L	<1	----	----	<1	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	----	----	<1	<1	
tert-Butylbenzene	98-06-6	1	µg/L	<1	----	----	<1	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	----	----	<1	<1	
n-Butylbenzene	104-51-8	1	µg/L	<1	----	----	<1	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	----	----	<10	<20	
Vinyl Acetate	108-05-4	10	µg/L	<10	----	----	<10	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	----	----	<10	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	----	----	<10	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	----	----	<10	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	3	----	----	<1	<1	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	----	----	<1	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	----	----	<1	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	----	----	<2	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	----	----	<2	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	----	----	<1	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	----	----	<10	<10	
Chloromethane	74-87-3	10	µg/L	<10	----	----	<10	<10	
Vinyl chloride	75-01-4	10	µg/L	<10.0	----	----	<10.0	<10.0	
Bromomethane	74-83-9	10	µg/L	<10	----	----	<10	<10	
Chloroethane	75-00-3	10	µg/L	<10	----	----	<10	<10	
Trichlorofluoromethane	75-69-4	10	µg/L	<10	----	----	<10	<10	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW34_10/07/17	QC301_10/07/17	QC302_10/07/17	GW52_10/07/17	GW56_10/07/17
Client sampling date / time				10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709029-006	EM1709029-007	EM1709029-008	EM1709029-009	EM1709029-010	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	----	----	<1	<1	
Iodomethane	74-88-4	1	µg/L	<1	----	----	<1	<1	
Methylene chloride	75-09-2	4	µg/L	<4	----	----	<4	<4	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	----	----	<1	<1	
1,1-Dichloroethane	75-34-3	1	µg/L	<1	----	----	2	<1	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	----	----	16	<1	
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	----	----	<1	<1	
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	----	----	<1	<1	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	----	----	<1	<1	
1,2-Dichloroethane	107-06-2	1	µg/L	<1	----	----	<1	<1	
Trichloroethene	79-01-6	1	µg/L	<1	----	----	<1	<1	
Dibromomethane	74-95-3	1	µg/L	<1	----	----	<1	<1	
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	----	----	<1	<1	
1,3-Dichloropropane	142-28-9	1	µg/L	<1	----	----	<1	<1	
Tetrachloroethene	127-18-4	1	µg/L	<1	----	----	<1	<1	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	----	----	<1	<1	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	----	----	<1	<1	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	----	----	<1	<1	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	----	----	<1	<1	
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	----	----	<1	<1	
Pentachloroethane	76-01-7	1	µg/L	<1	----	----	<1	<1	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	----	----	<1	<1	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	----	----	<1.0	<1.0	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	----	----	<1	<1	
Bromobenzene	108-86-1	1	µg/L	<1	----	----	<1	<1	
2-Chlorotoluene	95-49-8	1	µg/L	<1	----	----	<1	<1	
4-Chlorotoluene	106-43-4	1	µg/L	<1	----	----	<1	<1	
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	----	----	<1	<1	
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	----	----	<1.0	<1.0	
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	----	----	<1	<1	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	----	----	<1	<1	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	----	----	<1	<1	
<b>EP074G: Trihalomethanes</b>									





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW34_10/07/17	QC301_10/07/17	QC302_10/07/17	GW52_10/07/17	GW56_10/07/17
Client sampling date / time				10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709029-006	EM1709029-007	EM1709029-008	EM1709029-009	EM1709029-010	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	<1	----	----	<1	<1	
Bromodichloromethane	75-27-4	1	µg/L	<1	----	----	<1	<1	
Dibromochloromethane	124-48-1	1	µg/L	<1	----	----	<1	<1	
Bromoform	75-25-2	1	µg/L	<1	----	----	<1	<1	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	----	----	<5	<5	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	----	----	<1.0	<1.0	
Acenaphthylene	208-96-8	1	µg/L	<1.0	----	----	<1.0	<1.0	
Acenaphthene	83-32-9	1	µg/L	<1.0	----	----	<1.0	<1.0	
Fluorene	86-73-7	1	µg/L	<1.0	----	----	<1.0	<1.0	
Phenanthrene	85-01-8	1	µg/L	<1.0	----	----	<1.0	<1.0	
Anthracene	120-12-7	1	µg/L	<1.0	----	----	<1.0	<1.0	
Fluoranthene	206-44-0	1	µg/L	<1.0	----	----	<1.0	<1.0	
Pyrene	129-00-0	1	µg/L	<1.0	----	----	<1.0	<1.0	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	----	----	<1.0	<1.0	
Chrysene	218-01-9	1	µg/L	<1.0	----	----	<1.0	<1.0	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	----	----	<1.0	<1.0	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	----	----	<1.0	<1.0	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	<0.5	<0.5	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	----	----	<1.0	<1.0	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	----	----	<1.0	<1.0	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	----	----	<1.0	<1.0	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	<0.5	<0.5	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	----	----	<0.5	<0.5	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<b>90</b>	<20	
C10 - C14 Fraction	----	50	µg/L	<50	<50	----	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	<100	----	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	----	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	----	<50	<50	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<b>70</b>	<20	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW34_10/07/17	QC301_10/07/17	QC302_10/07/17	GW52_10/07/17	GW56_10/07/17
Client sampling date / time				10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709029-006	EM1709029-007	EM1709029-008	EM1709029-009	EM1709029-010	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	70	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	----	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	----	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	----	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	----	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	----	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	4	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	4	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	----	----	----	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	----	----	----	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	----	----	----	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	----	----	----	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.06	----	----	----	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	----	----	----	----	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.1	----	----	----	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.12	----	----	----	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.09	----	----	----	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.02	----	----	----	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW34_10/07/17	QC301_10/07/17	QC302_10/07/17	GW52_10/07/17	GW56_10/07/17
Client sampling date / time				10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709029-006	EM1709029-007	EM1709029-008	EM1709029-009	EM1709029-010	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.03	----	----	----	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	----	----	----	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	----	----	----	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	----	----	----	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	----	----	----	----	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	----	----	----	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	----	----	----	----	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	----	----	----	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	----	----	----	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	----	----	----	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	----	----	----	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	----	----	----	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	----	----	----	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	----	----	----	----	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	----	----	----	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	0.07	----	----	----	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	----	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW34_10/07/17	QC301_10/07/17	QC302_10/07/17	GW52_10/07/17	GW56_10/07/17
Client sampling date / time				10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	10-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709029-006	EM1709029-007	EM1709029-008	EM1709029-009	EM1709029-010	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	----	----	----	----	
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	0.49	----	----	----	----	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.06	----	----	----	----	
Sum of PFAS (WA DER List)	----	0.01	µg/L	0.49	----	----	----	----	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	98.7	----	----	99.6	105	
Toluene-D8	2037-26-5	1	%	103	----	----	112	112	
4-Bromofluorobenzene	460-00-4	1	%	91.5	----	----	99.8	101	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	27.5	----	----	35.9	35.9	
2-Chlorophenol-D4	93951-73-6	1	%	55.0	----	----	76.2	76.2	
2,4,6-Tribromophenol	118-79-6	1	%	67.8	----	----	66.3	66.3	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	54.6	----	----	83.0	83.0	
Anthracene-d10	1719-06-8	1	%	72.3	----	----	63.8	63.8	
4-Terphenyl-d14	1718-51-0	1	%	69.0	----	----	64.3	64.3	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	99.8	106	108	99.4	103	
Toluene-D8	2037-26-5	2	%	94.9	85.9	87.6	103	106	
4-Bromofluorobenzene	460-00-4	2	%	90.7	102	99.6	98.1	103	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	97.4	----	----	----	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC101_10/07/17	QC303_10/07/17	----	----	----
Client sampling date / time				10-Jul-2017 00:00	10-Jul-2017 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	EM1709029-011	EM1709029-012	-----	-----	-----	
				Result	Result	----	----	----	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	<0.01	----	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	----	----	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	----	----	----	----	----
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	<0.01	----	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	----	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	----	----	----	----	----
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----	----
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	----	----	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	----	----	----	----



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC101_10/07/17	QC303_10/07/17	----	----	----
Client sampling date / time				10-Jul-2017 00:00	10-Jul-2017 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	EM1709029-011	EM1709029-012	-----	-----	-----	
				Result	Result	----	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	----	----	----	
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	----	----	
>C16 - C34 Fraction	----	100	µg/L	<100	----	----	----	----	
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	----	----	----	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	----	----	----	
Toluene	108-88-3	2	µg/L	<2	<2	----	----	----	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	----	----	----	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	----	----	----	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	----	----	----	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	----	----	----	
^ Sum of BTEX	----	1	µg/L	<1	<1	----	----	----	
Naphthalene	91-20-3	5	µg/L	<5	<5	----	----	----	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	103	106	----	----	----	
Toluene-D8	2037-26-5	2	%	81.4	88.0	----	----	----	
4-Bromofluorobenzene	460-00-4	2	%	92.5	98.3	----	----	----	





## Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	72	120
Toluene-D8	2037-26-5	70	130
4-Bromofluorobenzene	460-00-4	70	128
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	10	46
2-Chlorophenol-D4	93951-73-6	23	104
2,4,6-Tribromophenol	118-79-6	28	130
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129
<b>EP231S: PFAS Surrogate</b>			
13C4-PFOS	----	60	130

## QUALITY CONTROL REPORT

<b>Work Order</b>	<b>: EM1709029</b>	<b>Page</b>	: 1 of 19
<b>Client</b>	<b>: AECOM Australia Pty Ltd</b>	<b>Laboratory</b>	: Environmental Division Melbourne
<b>Contact</b>	<b>: MS AVERYLL COYNE</b>	<b>Contact</b>	: Carol Walsh
<b>Address</b>	<b>: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004</b>	<b>Address</b>	: 4 Westall Rd Springvale VIC Australia 3171
<b>Telephone</b>	<b>: +61 03 9653 1234</b>	<b>Telephone</b>	: +61-3-8549 9608
<b>Project</b>	<b>: 60537182</b>	<b>Date Samples Received</b>	: 11-Jul-2017
<b>Order number</b>	<b>: 60537182 Task 3.2</b>	<b>Date Analysis Commenced</b>	: 12-Jul-2017
<b>C-O-C number</b>	<b>: ----</b>	<b>Issue Date</b>	: 17-Jul-2017
<b>Sampler</b>	<b>: BH, BP, JM</b>		
<b>Site</b>	<b>: ----</b>		
<b>Quote number</b>	<b>: ME/199/16</b>		
<b>No. of samples received</b>	<b>: 12</b>		
<b>No. of samples analysed</b>	<b>: 12</b>		



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Herman Lin	Laboratory Manager	Melbourne Inorganics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC





## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :  
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot  
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
 LOR = Limit of reporting  
 RPD = Relative Percentage Difference  
 # = Indicates failed QC

## Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA005P: pH by PC Titrator (QC Lot: 991427)</b>									
EM1709031-003	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.98	7.60	4.88	0% - 20%
EM1709027-014	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.66	7.55	1.45	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 991369)</b>									
EM1709027-012	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	42700	38700	9.82	0% - 20%
EM1709028-006	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	834	838	0.478	0% - 20%
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 991426)</b>									
EM1709027-007	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO <sub>3</sub>	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO <sub>3</sub>	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO <sub>3</sub>	71-52-3	1	mg/L	420	421	0.305	0% - 20%
		ED037-P: Total Alkalinity as CaCO <sub>3</sub>	----	1	mg/L	420	421	0.305	0% - 20%
EM1709027-014	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO <sub>3</sub>	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO <sub>3</sub>	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO <sub>3</sub>	71-52-3	1	mg/L	533	534	0.317	0% - 20%
		ED037-P: Total Alkalinity as CaCO <sub>3</sub>	----	1	mg/L	533	534	0.317	0% - 20%
<b>ED041G: Sulfate (Turbidimetric) as SO<sub>4</sub> 2- by DA (QC Lot: 991501)</b>									
EM1709029-001	GW01_10/07/17	ED041G: Sulfate as SO <sub>4</sub> - Turbidimetric	14808-79-8	1	mg/L	182	187	2.77	0% - 20%
EM1709003-004	Anonymous	ED041G: Sulfate as SO <sub>4</sub> - Turbidimetric	14808-79-8	1	mg/L	520	515	0.998	0% - 20%
<b>ED043: Total Oxidised Sulfur as SO<sub>4</sub> 2- (QC Lot: 994189)</b>									
EM1709029-001	GW01_10/07/17	ED043: Total Oxidised Sulfur as SO <sub>4</sub> 2-	----	1	mg/L	241	233	3.52	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 991503)</b>									
EM1709025-002	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	10600	10500	0.845	0% - 20%
EM1709003-004	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	4540	4570	0.721	0% - 20%
<b>ED093F: Dissolved Major Cations (QC Lot: 991492)</b>									
EM1709020-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	471	459	2.56	0% - 20%



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>ED093F: Dissolved Major Cations (QC Lot: 991492) - continued</b>									
EM1709020-001	Anonymous	ED093F: Magnesium	7439-95-4	1	mg/L	1080	1060	2.07	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	9330	9180	1.63	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	253	248	2.06	0% - 20%
EM1709025-003	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	307	307	0.00	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	132	131	1.30	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	1740	1730	0.442	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	36	35	4.40	0% - 20%
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 991489)</b>									
EM1708932-005	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.002	0.003	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.02	0.02	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit
EM1709026-004	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.004	114	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.186	0.194	4.24	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.007	0.009	26.7	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	7.80	8.37	6.95	0% - 20%
<b>EG020T: Total Metals by ICP-MS (QC Lot: 991499)</b>									
EM1709028-004	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.014	0.015	0.00	0% - 50%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.013	0.013	0.00	0% - 50%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.006	0.007	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.15	0.15	0.00	0% - 50%





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020T: Total Metals by ICP-MS (QC Lot: 991499) - continued</b>									
EM1709028-004	Anonymous	EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit
EM1709029-007	QC301_10/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 991490)</b>									
EM1709029-002	GW07_10/07/17	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709000-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0002	<0.0002	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 991834)</b>									
EM1709020-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709028-004	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 991835)</b>									
EM1709029-010	GW56_10/07/17	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EK040P: Fluoride by PC Titrator (QC Lot: 991425)</b>									
EM1709027-007	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.4	0.4	0.00	No Limit
EM1709027-014	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.2	0.2	0.00	No Limit
<b>EK040P: Fluoride by PC Titrator (QC Lot: 991429)</b>									
EM1709031-003	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.6	0.6	0.00	No Limit
<b>EK055G: Ammonia as N by Discrete Analyser (QC Lot: 991563)</b>									
EM1709025-004	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.04	0.06	48.6	No Limit
EM1709003-004	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.04	0.04	0.00	No Limit
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 991504)</b>									
EM1709025-002	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.01	<0.01	0.00	No Limit
EM1709029-001	GW01_10/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.04	123	No Limit
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 991565)</b>									
EM1709025-003	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.32	0.34	5.79	0% - 20%
EM1709028-006	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.04	0.04	0.00	No Limit
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 991502)</b>									
EM1709029-001	GW01_10/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.30	0.30	0.00	0% - 20%
EM1709003-004	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.26	0.25	4.75	0% - 20%



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EP005: Total Organic Carbon (TOC) (QC Lot: 994493)</b>										
EM1708862-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	4	4	0.00	No Limit	
EM1708862-010	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	5	5	0.00	No Limit	
<b>EP005: Total Organic Carbon (TOC) (QC Lot: 994494)</b>										
EM1709029-006	GW34_10/07/17	EP005: Total Organic Carbon	----	1	mg/L	10	9	0.00	No Limit	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 991191)</b>										
EM1709029-001	GW01_10/07/17	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit			
<b>EP074B: Oxygenated Compounds (QC Lot: 991191)</b>										
EM1709029-001	GW01_10/07/17	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit	
<b>EP074C: Sulfonated Compounds (QC Lot: 991191)</b>										
EM1709029-001	GW01_10/07/17	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit	
<b>EP074D: Fumigants (QC Lot: 991191)</b>										
EM1709029-001	GW01_10/07/17	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit	
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit	
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 991191)</b>										
EM1709029-001	GW01_10/07/17	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit	
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit	
		EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit	





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 991191) - continued</b>									
EM1709029-001	GW01_10/07/17	EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit		
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit		
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 991191)</b>									
EM1709029-001	GW01_10/07/17	EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	1.3	1.2	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	4	4	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	1	1	0.00	No Limit
		EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 991191)</b>									
EM1709029-001	GW01_10/07/17	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074H: Naphthalene (QC Lot: 991191)</b>									
EM1709029-001	GW01_10/07/17	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 991394)</b>									
EM1709029-006	GW34_10/07/17	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.00	No Limit
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.00	No Limit		
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.00	No Limit		
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 991188)</b>									
EM1709006-034	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1709028-004	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 991190)</b>									
EM1709029-001	GW01_10/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 991393)</b>									
EM1709029-006	GW34_10/07/17	EP071: C15 - C28 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	µg/L	<50	<50	0.00	No Limit
		EP071: C29 - C36 Fraction	----	50	µg/L	<50	<50	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 991188)</b>									
EM1709006-034	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM1709028-004	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 991190)</b>									
EM1709029-001	GW01_10/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 991393)</b>									
EM1709029-006	GW34_10/07/17	EP071: >C10 - C16 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: >C16 - C34 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
<b>EP080: BTEXN (QC Lot: 991188)</b>									
EM1709006-034	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EP080: BTEXN (QC Lot: 991188) - continued</b>										
EM1709006-034	Anonymous	EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
EM1709028-004	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
<b>EP080: BTEXN (QC Lot: 991190)</b>										
EM1709029-001	GW01_10/07/17	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 994053)</b>										
EM1709028-004	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.09	0.08	0.00	No Limit	
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.84	0.82	2.64	0% - 20%	
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.29	0.28	0.00	0% - 50%	
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.51	0.50	2.36	0% - 20%	
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 994053)</b>										
EM1709028-004	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.43	0.42	0.00	0% - 20%	
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	2.02	1.98	1.90	0% - 20%	
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	5.36	5.30	1.05	0% - 20%	
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.84	0.82	2.90	0% - 20%	
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	0.25	0.23	10.5	0% - 50%	
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit	
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	1.0	0.9	0.00	No Limit	



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 994053)</b>									
EM1709028-004	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 994053)</b>									
EM1709028-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	0.14	0.14	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231P: PFAS Sums (QC Lot: 994053)</b>									
EM1709028-004	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	11.8	11.5	2.58	0% - 20%





## Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 991369)</b>									
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	101	95	105	
				<10	293 mg/L	105	95	105	
<b>ED037P: Alkalinity by PC Titrator (QCLot: 991426)</b>									
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	95.5	88	109	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 991501)</b>									
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	108	92	115	
				<1	100 mg/L	103	92	115	
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 994189)</b>									
ED043: Total Oxidised Sulfur as SO4 2-	----	----	mg/L	----	500 mg/L	117	82	122	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 991503)</b>									
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	112	88	118	
				<1	1000 mg/L	100	88	118	
<b>ED093F: Dissolved Major Cations (QCLot: 991492)</b>									
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	102	93	110	
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	103	91	110	
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	107	90	109	
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	106	89	109	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 991489)</b>									
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	99.2	93	105	
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	99.2	91	107	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	95.1	84	104	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	94.8	83	103	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	92.2	82	103	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	95.8	83	105	
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	96.1	83	105	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	93.2	82	106	
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	94.7	82	109	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	93.7	85	109	
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	99.0	94	106	
<b>EG020T: Total Metals by ICP-MS (QCLot: 991499)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	104	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	107	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	107	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	97.7	87	109	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EG020T: Total Metals by ICP-MS (QCLot: 991499) - continued</b>									
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	102	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	102	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	101	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	104	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	107	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	103	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	102	80	120	
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 991490)</b>									
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	99.7	81	114	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 991834)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	96.5	81	114	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 991835)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	95.9	81	114	
<b>EK040P: Fluoride by PC Titrator (QCLot: 991425)</b>									
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	109	85	112	
<b>EK040P: Fluoride by PC Titrator (QCLot: 991429)</b>									
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	97.6	85	112	
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 991563)</b>									
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	102	80	115	
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 991504)</b>									
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	95.0	94	107	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 991565)</b>									
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	101	89	114	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 991502)</b>									
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	104	94	108	
<b>EP005: Total Organic Carbon (TOC) (QCLot: 994493)</b>									
EP005: Total Organic Carbon	----	1	mg/L	<1	100 mg/L	95.0	81	109	
<b>EP005: Total Organic Carbon (TOC) (QCLot: 994494)</b>									
EP005: Total Organic Carbon	----	1	mg/L	<1	100 mg/L	94.6	81	109	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 991191)</b>									
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	100	81	119	
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	106	84	117	
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	97.3	83	114	
EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	40 µg/L	97.9	81	116	
	106-42-3								
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	95.5	82	118	
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	98.9	85	115	





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 991191) - continued</b>									
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	106	81	113	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	93.8	76	111	
EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	95.7	79	109	
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	95.0	77	111	
EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	92.9	79	108	
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	95.5	80	110	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	93.4	75	111	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	90.3	68	111	
<b>EP074B: Oxygenated Compounds (QCLot: 991191)</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	105	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	99.6	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	99.4	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	104	73	128	
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	109	75	129	
<b>EP074C: Sulfonated Compounds (QCLot: 991191)</b>									
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	88.1	64	119	
<b>EP074D: Fumigants (QCLot: 991191)</b>									
EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	92.7	74	117	
EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	98.9	83	118	
EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	87.2	74	109	
EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	84.8	70	109	
EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	97.2	81	116	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 991191)</b>									
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	102	61	137	
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	118	66	137	
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	104	67	135	
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	98.5	52	128	
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	107	76	125	
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	101	74	123	
EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	95.0	75	120	
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	64.1	37	120	
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	20 µg/L	126	72	159	
EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	95.0	78	117	
EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	97.8	81	118	
EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	98.1	83	118	
EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	94.5	76	115	
EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	96.5	75	117	
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	88.0	72	111	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 991191) - continued</b>									
EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	99.5	81	120	
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	98.4	78	116	
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	95.6	79	116	
EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	103	85	119	
EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	109	85	119	
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	96.2	76	120	
EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	90.3	78	110	
EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	95.9	64	118	
EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	81.6	51	113	
EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	105	85	121	
EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	106	84	118	
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	85.2	64	109	
EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	91.1	65	115	
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	95.1	70	121	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 991191)</b>									
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	98.2	85	115	
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	95.3	82	116	
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	96.1	81	112	
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	93.1	80	110	
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	90.3	80	110	
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	94.4	80	112	
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	96.8	84	111	
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	87.5	70	114	
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	94.5	78	116	
<b>EP074G: Trihalomethanes (QCLot: 991191)</b>									
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	98.2	82	118	
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	89.2	75	112	
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	87.7	73	108	
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	86.2	68	107	
<b>EP074H: Naphthalene (QCLot: 991191)</b>									
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	101	80	116	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 991394)</b>									
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	83.4	39	110	
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	77.0	40	124	
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	86.2	47	117	
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	84.2	51	118	
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	89.5	53	119	
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	66.6	51	113	





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 991394) - continued</b>									
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	85.0	59	123	
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	83.8	58	123	
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	75.8	52	126	
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	82.8	55	123	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	92.3	52	131	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	95.5	57	126	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	92.9	56	126	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	80.7	53	123	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	79.2	53	125	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	83.5	53	125	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 991188)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	98.7	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 991190)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	101	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 991393)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	72.8	53	123	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	72.1	57	133	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	65.4	55	141	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 991188)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	96.2	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 991190)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	99.4	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 991393)</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	71.4	54	122	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	67.4	56	132	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	71.0	51	137	
<b>EP080: BTEXN (QCLot: 991188)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	101	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	108	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	102	72	124	
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	106	72	130	
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	108	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	121	71	129	
<b>EP080: BTEXN (QCLot: 991190)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	101	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	108	76	124	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP080: BTEXN (QCLot: 991190) - continued</b>									
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	99.0	72	124	
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	104	72	130	
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	104	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	101	71	129	
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 994053)</b>									
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.5 µg/L	92.6	70	130	
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.5 µg/L	91.4	70	130	
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.5 µg/L	91.0	70	130	
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.5 µg/L	101	70	130	
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.5 µg/L	107	70	130	
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	112	70	130	
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 994053)</b>									
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	2.5 µg/L	86.9	70	130	
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	92.6	70	130	
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	92.6	70	130	
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	96.4	70	130	
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	110	70	130	
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	120	70	130	
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	117	70	130	
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	101	70	130	
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	113	70	130	
EP231X: Perfluorotridecanoic acid (PFTriDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	74.4	70	130	
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	84.2	70	150	
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 994053)</b>									
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	121	70	130	
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	128	70	150	
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	116	70	150	
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	1.25 µg/L	126	70	150	
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	87.7	70	150	
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	129	70	130	
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	109	70	130	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 994053)</b>									
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.5 µg/L	83.6	70	130	
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.5 µg/L	118	70	130	





Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 994053) - continued</b>								
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.5 µg/L	125	70	130
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.5 µg/L	111	70	130

### Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery(%)	Recovery Limits (%)	
					MS	Low	High
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 991501)</b>							
EM1709017-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70	130
<b>ED045G: Chloride by Discrete Analyser (QCLot: 991503)</b>							
EM1709017-001	Anonymous	ED045G: Chloride	16887-00-6	400 mg/L	# Not Determined	70	130
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 991489)</b>							
EM1708932-005	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	107	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	110	81	133
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	110	71	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	100	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	102	75	133
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	106	64	134
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	102	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	101	75	131
<b>EG020T: Total Metals by ICP-MS (QCLot: 991499)</b>							
EM1709028-004	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	99.1	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	95.1	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	92.0	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	97.1	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	96.8	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	91.7	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	95.8	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	95.7	74	116
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 991490)</b>							
EM1709025-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	94.8	70	120
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 991834)</b>							



Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 991834) - continued</b>							
EM1709020-002	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	# 51.1	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 991835)</b>							
EM1709029-011	QC101_10/07/17	EG035T: Mercury	7439-97-6	0.01 mg/L	99.1	70	130
<b>EK040P: Fluoride by PC Titrator (QCLot: 991425)</b>							
EM1709027-008	Anonymous	EK040P: Fluoride	16984-48-8	5 mg/L	75.6	70	130
<b>EK040P: Fluoride by PC Titrator (QCLot: 991429)</b>							
EM1709031-001	Anonymous	EK040P: Fluoride	16984-48-8	5 mg/L	111	70	130
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 991563)</b>							
EM1709009-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	116	70	130
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 991504)</b>							
EM1709025-003	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	93.6	80	114
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 991565)</b>							
EM1709025-004	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	110	70	130
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 991502)</b>							
EM1709025-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	106	79	123
<b>EP005: Total Organic Carbon (TOC) (QCLot: 994493)</b>							
EM1708862-002	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	89.2	80	114
<b>EP005: Total Organic Carbon (TOC) (QCLot: 994494)</b>							
EM1709029-009	GW52_10/07/17	EP005: Total Organic Carbon	----	100 mg/L	87.6	80	114
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 991191)</b>							
EM1709029-002	GW07_10/07/17	EP074-WF: Benzene	71-43-2	20 µg/L	105	76	128
		EP074-WF: Toluene	108-88-3	20 µg/L	113	72	132
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 991191)</b>							
EM1709029-002	GW07_10/07/17	EP074-WF: 1,1-Dichloroethene	75-35-4	20 µg/L	110	63	129
		EP074-WF: Trichloroethene	79-01-6	20 µg/L	96.6	64	126
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 991191)</b>							
EM1709029-002	GW07_10/07/17	EP074-WF: Chlorobenzene	108-90-7	20 µg/L	103	81	119
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 991188)</b>							
EM1709012-004	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	88.6	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 991190)</b>							
EM1709029-002	GW07_10/07/17	EP080: C6 - C9 Fraction	----	280 µg/L	83.4	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 991393)</b>							
EM1709028-006	Anonymous	EP071: C10 - C14 Fraction	----	3368 µg/L	85.3	50	130





Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 991393) - continued</b>							
EM1709028-006	Anonymous	EP071: C15 - C28 Fraction	----	14735 µg/L	83.7	54	136
		EP071: C29 - C36 Fraction	----	7856 µg/L	76.1	50	142
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 991188)</b>							
EM1709012-004	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	85.5	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 991190)</b>							
EM1709029-002	GW07_10/07/17	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	80.2	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 991393)</b>							
EM1709028-006	Anonymous	EP071: >C10 - C16 Fraction	----	5225 µg/L	83.0	50	128
		EP071: >C16 - C34 Fraction	----	19994 µg/L	78.3	50	150
		EP071: >C34 - C40 Fraction	----	1449 µg/L	82.2	51	159
<b>EP080: BTEXN (QCLot: 991188)</b>							
EM1709012-004	Anonymous	EP080: Benzene	71-43-2	20 µg/L	106	68	130
		EP080: Toluene	108-88-3	20 µg/L	102	72	132
<b>EP080: BTEXN (QCLot: 991190)</b>							
EM1709029-002	GW07_10/07/17	EP080: Benzene	71-43-2	20 µg/L	105	68	130
		EP080: Toluene	108-88-3	20 µg/L	104	72	132
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 994053)</b>							
EM1709028-004	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.5 µg/L	112	50	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.5 µg/L	114	50	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.5 µg/L	111	50	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.5 µg/L	109	50	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	101	50	130
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.5 µg/L	96.8	50	130
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 994053)</b>							
EM1709028-004	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	112	50	130
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	# Not Determined	50	130
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	# Not Determined	50	130
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	97.0	50	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	120	50	130
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	106	50	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	92.4	50	130
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	110	50	130
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	112	50	130
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	120	50	130
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	113	50	150



Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 994053)</b>							
EM1709028-004	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	101	50	130
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	108	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	114	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	1.25 µg/L	90.7	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	107	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	82.0	50	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	84.2	50	130
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 994053)</b>							
EM1709028-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.5 µg/L	102	50	130
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.5 µg/L	119	50	130
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.5 µg/L	90.0	50	130
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.5 µg/L	96.8	50	130



## QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM1709029	Page	: 1 of 14
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: MS AVERYLL COYNE	Telephone	: +61-3-8549 9608
Project	: 60537182	Date Samples Received	: 11-Jul-2017
Site	: ----	Issue Date	: 17-Jul-2017
Sampler	: BH, BP, JM	No. of samples received	: 12
Order number	: 60537182 Task 3.2	No. of samples analysed	: 12

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

### Summary of Outliers

#### Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

#### Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

#### Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



### Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
<b>Matrix Spike (MS) Recoveries</b>							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	EM1709017--001	Anonymous	Sulfate as SO4 - Turbidimetric	14808-79-8	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
ED045G: Chloride by Discrete Analyser	EM1709017--001	Anonymous	Chloride	16887-00-6	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EG035T: Total Recoverable Mercury by FIMS	EM1709020--002	Anonymous	Mercury	7439-97-6	51.1 %	70-130%	Recovery less than lower data quality objective
EP231B: Perfluoroalkyl Carboxylic Acids	EM1709028--004	Anonymous	Perfluoropentanoic acid (PFPeA)	2706-90-3	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EP231B: Perfluoroalkyl Carboxylic Acids	EM1709028--004	Anonymous	Perfluorohexanoic acid (PFHxA)	307-24-4	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.

### Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method	Extraction / Preparation			Analysis			
	Container / Client Sample ID(s)	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EA005P: pH by PC Titrator</b>							
<b>Clear Plastic Bottle - Natural</b>							
GW01_10/07/17, GW31_10/07/17, GW52_10/07/17,	GW07_10/07/17, GW34_10/07/17, GW56_10/07/17	----	----	----	12-Jul-2017	10-Jul-2017	2

### Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
<b>Laboratory Duplicates (DUP)</b>					
TRH - Semivolatile Fraction	1	17	5.88	10.00	NEPM 2013 B3 & ALS QC Standard
<b>Method Blanks (MB)</b>					
Total Oxidised Sulfur as SO4 2-	0	6	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>					
PAH/Phenols (GC/MS - SIM)	0	6	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	0	6	0.00	5.00	NEPM 2013 B3 & ALS QC Standard





## Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EA005P: pH by PC Titrator</b>							
<b>Clear Plastic Bottle - Natural (EA005-P)</b> GW01_10/07/17, GW31_10/07/17, GW52_10/07/17, GW07_10/07/17, GW34_10/07/17, GW56_10/07/17	10-Jul-2017	---	---	---	12-Jul-2017	10-Jul-2017	*
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>							
<b>Clear Plastic Bottle - Natural (EA015H)</b> GW01_10/07/17, GW31_10/07/17, GW52_10/07/17, GW07_10/07/17, GW34_10/07/17, GW56_10/07/17	10-Jul-2017	---	---	---	12-Jul-2017	17-Jul-2017	✓
<b>ED037P: Alkalinity by PC Titrator</b>							
<b>Clear Plastic Bottle - Natural (ED037-P)</b> GW01_10/07/17, GW31_10/07/17, GW52_10/07/17, GW07_10/07/17, GW34_10/07/17, GW56_10/07/17	10-Jul-2017	---	---	---	12-Jul-2017	24-Jul-2017	✓
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>							
<b>Clear Plastic Bottle - Natural (ED041G)</b> GW01_10/07/17, GW31_10/07/17, GW52_10/07/17, GW07_10/07/17, GW34_10/07/17, GW56_10/07/17	10-Jul-2017	---	---	---	12-Jul-2017	07-Aug-2017	✓
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>							
<b>Clear Plastic Bottle - Natural (ED043)</b> GW01_10/07/17, GW31_10/07/17, GW52_10/07/17, GW07_10/07/17, GW34_10/07/17, GW56_10/07/17	10-Jul-2017	13-Jul-2017	07-Aug-2017	✓	14-Jul-2017	07-Aug-2017	✓
<b>ED045G: Chloride by Discrete Analyser</b>							
<b>Clear Plastic Bottle - Natural (ED045G)</b> GW01_10/07/17, GW31_10/07/17, GW52_10/07/17, GW07_10/07/17, GW34_10/07/17, GW56_10/07/17	10-Jul-2017	---	---	---	12-Jul-2017	07-Aug-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>ED093F: Dissolved Major Cations</b>								
<b>Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)</b> GW01_10/07/17, GW31_10/07/17, GW52_10/07/17,	GW07_10/07/17, GW34_10/07/17, GW56_10/07/17	10-Jul-2017	----	----	----	13-Jul-2017	07-Aug-2017	✓
<b>EG020F: Dissolved Metals by ICP-MS</b>								
<b>Clear Plastic Bottle - Filtered; Lab-acidified (EG020A-F)</b> QC200_10/07/17, QC301_10/07/17	QC201_10/07/17,	10-Jul-2017	----	----	----	12-Jul-2017	06-Jan-2018	✓
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)</b> GW01_10/07/17, GW31_10/07/17, GW52_10/07/17, QC101_10/07/17	GW07_10/07/17, GW34_10/07/17, GW56_10/07/17,	10-Jul-2017	----	----	----	12-Jul-2017	06-Jan-2018	✓
<b>EG020T: Total Metals by ICP-MS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)</b> GW01_10/07/17, QC200_10/07/17, GW31_10/07/17, QC301_10/07/17, GW56_10/07/17,	GW07_10/07/17, QC201_10/07/17, GW34_10/07/17, GW52_10/07/17, QC101_10/07/17	10-Jul-2017	12-Jul-2017	06-Jan-2018	✓	12-Jul-2017	06-Jan-2018	✓
<b>EG035F: Dissolved Mercury by FIMS</b>								
<b>Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)</b> QC200_10/07/17, QC301_10/07/17	QC201_10/07/17,	10-Jul-2017	----	----	----	12-Jul-2017	07-Aug-2017	✓
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)</b> GW01_10/07/17, GW31_10/07/17, GW52_10/07/17, QC101_10/07/17	GW07_10/07/17, GW34_10/07/17, GW56_10/07/17,	10-Jul-2017	----	----	----	12-Jul-2017	07-Aug-2017	✓
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)</b> GW01_10/07/17, QC200_10/07/17, GW31_10/07/17, QC301_10/07/17, GW56_10/07/17,	GW07_10/07/17, QC201_10/07/17, GW34_10/07/17, GW52_10/07/17, QC101_10/07/17	10-Jul-2017	----	----	----	12-Jul-2017	07-Aug-2017	✓
<b>EK040P: Fluoride by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural (EK040P)</b> GW01_10/07/17, GW31_10/07/17, GW52_10/07/17,	GW07_10/07/17, GW34_10/07/17, GW56_10/07/17	10-Jul-2017	----	----	----	12-Jul-2017	07-Aug-2017	✓





Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EK055G: Ammonia as N by Discrete Analyser</b>								
Clear Plastic Bottle - Sulfuric Acid (EK055G) GW01_10/07/17, GW31_10/07/17, GW52_10/07/17,	GW07_10/07/17, GW34_10/07/17, GW56_10/07/17	10-Jul-2017	----	----	----	12-Jul-2017	07-Aug-2017	✓
<b>EK057G: Nitrite as N by Discrete Analyser</b>								
Clear Plastic Bottle - Natural (EK057G) GW01_10/07/17, GW31_10/07/17, GW52_10/07/17,	GW07_10/07/17, GW34_10/07/17, GW56_10/07/17	10-Jul-2017	----	----	----	12-Jul-2017	12-Jul-2017	✓
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>								
Clear Plastic Bottle - Sulfuric Acid (EK059G) GW01_10/07/17, GW31_10/07/17, GW52_10/07/17,	GW07_10/07/17, GW34_10/07/17, GW56_10/07/17	10-Jul-2017	----	----	----	12-Jul-2017	07-Aug-2017	✓
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>								
Clear Plastic Bottle - Natural (EK071G) GW01_10/07/17, GW31_10/07/17, GW52_10/07/17,	GW07_10/07/17, GW34_10/07/17, GW56_10/07/17	10-Jul-2017	----	----	----	12-Jul-2017	12-Jul-2017	✓
<b>EP005: Total Organic Carbon (TOC)</b>								
Amber VOC Vial - Sulfuric Acid (EP005) GW01_10/07/17, GW31_10/07/17, GW52_10/07/17,	GW07_10/07/17, GW34_10/07/17, GW56_10/07/17	10-Jul-2017	----	----	----	13-Jul-2017	07-Aug-2017	✓
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW01_10/07/17, GW31_10/07/17, GW52_10/07/17,	GW07_10/07/17, GW34_10/07/17, GW56_10/07/17	10-Jul-2017	12-Jul-2017	24-Jul-2017	✓	12-Jul-2017	24-Jul-2017	✓
<b>EP074B: Oxygenated Compounds</b>								
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW01_10/07/17, GW31_10/07/17, GW52_10/07/17,	GW07_10/07/17, GW34_10/07/17, GW56_10/07/17	10-Jul-2017	12-Jul-2017	24-Jul-2017	✓	12-Jul-2017	24-Jul-2017	✓
<b>EP074C: Sulfonated Compounds</b>								
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW01_10/07/17, GW31_10/07/17, GW52_10/07/17,	GW07_10/07/17, GW34_10/07/17, GW56_10/07/17	10-Jul-2017	12-Jul-2017	24-Jul-2017	✓	12-Jul-2017	24-Jul-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP074D: Fumigants</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW01_10/07/17, GW31_10/07/17, GW52_10/07/17,	GW07_10/07/17, GW34_10/07/17, GW56_10/07/17	10-Jul-2017	12-Jul-2017	24-Jul-2017	✓	12-Jul-2017	24-Jul-2017	✓
<b>EP074E: Halogenated Aliphatic Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW01_10/07/17, GW31_10/07/17, GW52_10/07/17,	GW07_10/07/17, GW34_10/07/17, GW56_10/07/17	10-Jul-2017	12-Jul-2017	24-Jul-2017	✓	12-Jul-2017	24-Jul-2017	✓
<b>EP074F: Halogenated Aromatic Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW01_10/07/17, GW31_10/07/17, GW52_10/07/17,	GW07_10/07/17, GW34_10/07/17, GW56_10/07/17	10-Jul-2017	12-Jul-2017	24-Jul-2017	✓	12-Jul-2017	24-Jul-2017	✓
<b>EP074G: Trihalomethanes</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW01_10/07/17, GW31_10/07/17, GW52_10/07/17,	GW07_10/07/17, GW34_10/07/17, GW56_10/07/17	10-Jul-2017	12-Jul-2017	24-Jul-2017	✓	12-Jul-2017	24-Jul-2017	✓
<b>EP074H: Naphthalene</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW01_10/07/17, GW31_10/07/17, GW52_10/07/17,	GW07_10/07/17, GW34_10/07/17, GW56_10/07/17	10-Jul-2017	12-Jul-2017	24-Jul-2017	✓	12-Jul-2017	24-Jul-2017	✓
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
<b>Amber Glass Bottle - Unpreserved (EP075(SIM))</b> GW01_10/07/17, GW31_10/07/17, GW52_10/07/17,	GW07_10/07/17, GW34_10/07/17, GW56_10/07/17	10-Jul-2017	12-Jul-2017	17-Jul-2017	✓	13-Jul-2017	21-Aug-2017	✓





Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
<b>Amber Glass Bottle - Unpreserved (EP071)</b>								
GW01_10/07/17, QC200_10/07/17, GW31_10/07/17, QC301_10/07/17, GW56_10/07/17,	GW07_10/07/17, QC201_10/07/17, GW34_10/07/17, GW52_10/07/17, QC101_10/07/17	10-Jul-2017	12-Jul-2017	17-Jul-2017	✓	13-Jul-2017	21-Aug-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b>								
GW01_10/07/17, QC200_10/07/17, GW31_10/07/17, QC301_10/07/17, GW52_10/07/17, QC101_10/07/17,	GW07_10/07/17, QC201_10/07/17, GW34_10/07/17, QC302_10/07/17, GW56_10/07/17, QC303_10/07/17	10-Jul-2017	12-Jul-2017	24-Jul-2017	✓	12-Jul-2017	24-Jul-2017	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>								
<b>Amber Glass Bottle - Unpreserved (EP071)</b>								
GW01_10/07/17, QC200_10/07/17, GW31_10/07/17, QC301_10/07/17, GW56_10/07/17,	GW07_10/07/17, QC201_10/07/17, GW34_10/07/17, GW52_10/07/17, QC101_10/07/17	10-Jul-2017	12-Jul-2017	17-Jul-2017	✓	13-Jul-2017	21-Aug-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b>								
GW01_10/07/17, QC200_10/07/17, GW31_10/07/17, QC301_10/07/17, GW52_10/07/17, QC101_10/07/17,	GW07_10/07/17, QC201_10/07/17, GW34_10/07/17, QC302_10/07/17, GW56_10/07/17, QC303_10/07/17	10-Jul-2017	12-Jul-2017	24-Jul-2017	✓	12-Jul-2017	24-Jul-2017	✓
<b>EP080: BTEXN</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b>								
GW01_10/07/17, QC200_10/07/17, GW31_10/07/17, QC301_10/07/17, GW52_10/07/17, QC101_10/07/17,	GW07_10/07/17, QC201_10/07/17, GW34_10/07/17, QC302_10/07/17, GW56_10/07/17, QC303_10/07/17	10-Jul-2017	12-Jul-2017	24-Jul-2017	✓	12-Jul-2017	24-Jul-2017	✓
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b>								
GW01_10/07/17, GW31_10/07/17,	GW07_10/07/17, GW34_10/07/17	10-Jul-2017	----	----	----	14-Jul-2017	06-Jan-2018	✓



Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW01_10/07/17, GW31_10/07/17,	GW07_10/07/17, GW34_10/07/17	10-Jul-2017	----	----	----	14-Jul-2017	06-Jan-2018	✓
<b>EP231C: Perfluoroalkyl Sulfonamides</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW01_10/07/17, GW31_10/07/17,	GW07_10/07/17, GW34_10/07/17	10-Jul-2017	----	----	----	14-Jul-2017	06-Jan-2018	✓
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW01_10/07/17, GW31_10/07/17,	GW07_10/07/17, GW34_10/07/17	10-Jul-2017	----	----	----	14-Jul-2017	06-Jan-2018	✓
<b>EP231P: PFAS Sums</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW01_10/07/17, GW31_10/07/17,	GW07_10/07/17, GW34_10/07/17	10-Jul-2017	----	----	----	14-Jul-2017	06-Jan-2018	✓





## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Laboratory Duplicates (DUP)</b>							
Alkalinity by PC Titrator	ED037-P	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	17	11.76	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	3	30	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	18	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	14	14.29	10.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	6	16.67	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	10	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
pH by PC Titrator	EA005-P	2	19	10.53	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	14	14.29	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	19	10.53	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	22	13.64	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	13	15.38	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	3	24	12.50	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	1	6	16.67	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	17	5.88	10.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	26	11.54	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	1	6	16.67	10.00	✔	NEPM 2013 B3 & ALS QC Standard
<b>Laboratory Control Samples (LCS)</b>							
Alkalinity by PC Titrator	ED037-P	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	17	11.76	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	2	30	6.67	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	18	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	14	7.14	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	6	16.67	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	10	10.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	14	7.14	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard



Matrix: **WATER** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Control Samples (LCS) - Continued</b>							
Total Dissolved Solids (High Level)	EA015H	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	22	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	24	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
<b>Method Blanks (MB)</b>							
Ammonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	2	30	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	22	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	24	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	0	6	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>							
Ammonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	2	30	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	6	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard





Matrix: **WATER**

Evaluation: ✘ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Matrix Spikes (MS) - Continued</b>							
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	22	9.09	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	13	7.69	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	24	8.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	0	6	0.00	5.00	✘	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	17	5.88	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	26	7.69	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	1	6	16.67	5.00	✔	NEPM 2013 B3 & ALS QC Standard



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by PC Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of 'filterable' residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM (2013) Schedule B(3)
Alkalinity by PC Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM (2013) Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Oxidised Sulfur as SO4 2-	ED043	WATER	In house: The sample is treated with Peroxide to convert all Sulfur species to Sulfate. Sulfate in the sample can then be determined by ICPAES and reported as TOS as SO4 2-.
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm APHA 21st edition seal method 2 017-1-L april 2003
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM (2013) Schedule B(3)  Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM (2013) Schedule B(3)  Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM (2013) Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.





Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Fluoride by PC Titrator	EK040P	WATER	In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3)
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO <sub>2</sub> - B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO <sub>3</sub> - F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined separately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite and Nitrate as N (NO <sub>x</sub> ) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO <sub>3</sub> - F. Combined oxidised Nitrogen (NO <sub>2</sub> +NO <sub>3</sub> ) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with orthophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM (2013) Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Volatile Organic Compounds WF Detection Limits	EP074-WF	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)



<i>Analytical Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with methanol. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers.
<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Total Oxidisable Sulfur as SO4 2- Prep	ED043-PR	WATER	In house
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (2013) Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.





SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1709029

Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: MS AVERYLL COYNE	Contact	: Carol Walsh
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: averyll.coyne@aecom.com	E-mail	: carol.walsh@alsglobal.com
Telephone	: +61 03 9653 1234	Telephone	: +61-3-8549 9608
Facsimile	: +61 03 9654 7117	Facsimile	: +61-3-8549 9601
Project	: 60537182	Page	: 1 of 3
Order number	: 60537182	Quote number	: EM2016AECOMAU0012 (ME/199/16)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: BH, BP, JM		

Dates

Date Samples Received	: 11-Jul-2017 10:30	Issue Date	: 11-Jul-2017
Client Requested Due Date	: 18-Jul-2017	Scheduled Reporting Date	: <b>18-Jul-2017</b>

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 2	Temperature	: 2.8°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 12 / 12

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.
- **Analytical work for this work order will be conducted at ALS Springvale & ALS Sydney.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



## Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

### Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EG020F Dissolved Metals by ICPMS	WATER - EG020T Total Recoverable Metals by ICPMS (including	WATER - EK059G Nitrite plus Nitrate as N (NOx) by Discrete	WATER - EP231X PFAS - Full Suite (28 analytes)	WATER - Ionic Balance suite Ionic Balance suite	WATER - W-02T 8 metals (Total)	WATER - W-26 TRH/BTEXN/PAH/8 Metals
EM1709029-001	10-Jul-2017 00:00	GW01_10/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709029-002	10-Jul-2017 00:00	GW07_10/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709029-003	10-Jul-2017 00:00	QC200_10/07/17	✓	✓					
EM1709029-004	10-Jul-2017 00:00	QC201_10/07/17	✓	✓					
EM1709029-005	10-Jul-2017 00:00	GW31_10/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709029-006	10-Jul-2017 00:00	GW34_10/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709029-007	10-Jul-2017 00:00	QC301_10/07/17	✓	✓					
EM1709029-009	10-Jul-2017 00:00	GW52_10/07/17	✓	✓	✓		✓	✓	✓
EM1709029-010	10-Jul-2017 00:00	GW56_10/07/17	✓	✓	✓		✓	✓	✓
EM1709029-011	10-Jul-2017 00:00	QC101_10/07/17	✓	✓					

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - ED043 Total Oxidised Sulfur as SO4 2-	WATER - EP005 Total Organic Carbon (TOC)	WATER - EP074-WF Full VOCs with WF DL incl DCM & Acetone	WATER - W-02 8 Metals	WATER - W-05T TRH/BTEXN/8 Metals (Total)	WATER - W-18 TRH(C6 - C9)/BTEXN
EM1709029-001	10-Jul-2017 00:00	GW01_10/07/17	✓	✓	✓			
EM1709029-002	10-Jul-2017 00:00	GW07_10/07/17	✓	✓	✓			
EM1709029-003	10-Jul-2017 00:00	QC200_10/07/17				✓	✓	
EM1709029-004	10-Jul-2017 00:00	QC201_10/07/17				✓	✓	
EM1709029-005	10-Jul-2017 00:00	GW31_10/07/17	✓	✓	✓			
EM1709029-006	10-Jul-2017 00:00	GW34_10/07/17	✓	✓	✓			
EM1709029-007	10-Jul-2017 00:00	QC301_10/07/17				✓	✓	
EM1709029-008	10-Jul-2017 00:00	QC302_10/07/17						✓
EM1709029-009	10-Jul-2017 00:00	GW52_10/07/17	✓	✓	✓			
EM1709029-010	10-Jul-2017 00:00	GW56_10/07/17	✓	✓	✓			
EM1709029-011	10-Jul-2017 00:00	QC101_10/07/17				✓	✓	
EM1709029-012	10-Jul-2017 00:00	QC303_10/07/17						✓





ANZ  
FQM - Generic Chain of Custody Form

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: JM BP BH		Destination Laboratory											
PROJECT MANAGER (PM): Avaryll Coyne		SITE:		MOBILE: 0409536240		ALS											
PROJECT NUMBER & TASK CO 60537182		P.O. NO.:		EMAIL REPORT TO: Avaryll Coyne													
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED including BUTES (note - suite codes must be listed to attract suite prices)													
[REDACTED]		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:		pH, TDS, TOC	TRH (CL40)	PAH	Nitrogen oxides/sulphur oxides	VOC (ALSEP/4-NF) includes BTEX	Inorganic chemistry (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)	PFAS - 28 analytes	Dissolved metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)	Total Metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)	TRH (6-9)	BTEX	HOLD	Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.	
SAMPLE INFORMATION (note: S = Soil, W=Water)				CONTAINER INFORMATION													
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles											
1	GW01-10/07/17	W	10/07/17			12	X	X	X	X	X	X	X				
2	GW07-10/07/17					12	X	X	X	X	X	X	X				
3	QC200-10/07/17					5		X				X	X		X		
4	QC201-10/07/17					5	X	X	X	X	X	X	X				
5	GW31-10/07/17					12	X	X	X	X	X	X	X				
6	GW34-10/07/17					12	X	X	X	X	X	X	X				
7	QC301-10/07/17					5		X				X	X		X		
8	QC302-10/07/17					1								X	X		
9	GW52-10/07/17					10	X	X	X	X	X	X	X				
10	GW56-10/07/17					10	X	X	X	X	X	X	X				
11	QC101-10/07/17					5		X				X	X		X		BTEX ONLY
12	QC303-10/07/17					1								X	X		
RELINQUISHED BY:				RECEIVED BY:				RECEIVED BY:				METHOD OF SHIPMENT					
Name: Jacob MULLER		Date: 11/07/17		Name:		Date:		Name:		Date:		Con' Note No:					
Of: AECOM		Time:		Of:		Time:		Of:		Time:		Transport Co:					
<p>Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic</p> <p>V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;</p> <p>F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.</p> <p>Soil Container Codes: Jar = Unpreserved glass jar</p>																	

Environmental Division  
Melbourne  
Work Order Reference  
**EM1709029**



Telephone : +61-3-8549 9600

James (AM) 2 11/7 10:30 COC Page of



## CERTIFICATE OF ANALYSIS

**Work Order** : **EM1709106**  
**Client** : **AECOM Australia Pty Ltd**  
**Contact** : **MS AVERYLL COYNE**  
**Address** : **COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET  
MELBOURNE VIC, AUSTRALIA 3004**  
**Telephone** : **+61 03 9653 1234**  
**Project** : **60537182**  
**Order number** : **Task 3.2**  
**C-O-C number** : **----**  
**Sampler** : **BH, BP, JM**  
**Site** : **----**  
**Quote number** : **ME/199/16**  
**No. of samples received** : **28**  
**No. of samples analysed** : **26**

**Page** : 1 of 45  
**Laboratory** : Environmental Division Melbourne  
**Contact** : Carol Walsh  
**Address** : 4 Westall Rd Springvale VIC Australia 3171  
**Telephone** : +61-3-8549 9608  
**Date Samples Received** : 12-Jul-2017 09:50  
**Date Analysis Commenced** : 13-Jul-2017  
**Issue Date** : 19-Jul-2017 17:57



Accreditation No. 825  
 Accredited for compliance with  
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

**Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.**

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Chris Lemaitre	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	Senior Semivolatile Instrument Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC



## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
LOR = Limit of reporting  
^ = This result is computed from individual analyte detections at or above the level of reporting  
ø = ALS is not NATA accredited for these tests.  
~ = Indicates an estimated value.

- TDS by method EA-015 for EM1709106 #7,24 may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- EP074-WF: Minor VOC hits have been confirmed by re-analysis.
- EP074-WF: Minor Carbon disulfide hit confirmed by re-analysis.
- It is recognised that Nitrite +Nitrate as N is less than Nitrite as N for sample #3. However, the difference is within experimental variation of the methods.
- It is recognised that total metals are less than dissolved metals for samples #4 and #16. However, the difference is within experimental variation of the methods.
- ED041G: Samples EM1709106-002 and 010 have been diluted prior to analysis due to sample matrix and LORs have been raised accordingly.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- Ionic balances were calculated using: major anions - chloride, alkalinity, sulfate; and major cations - calcium, magnesium, potassium, sodium and iron for #24.
- ED045G: The presence of thiocyanate can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- EG020T: EM1709106-026 required dilution prior to Total Metal analysis. LOR values have been raised accordingly.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW38_11/07/17	GW33_11/07/17	GW36_11/07/17	GW37_11/07/17	GW28_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-001	EM1709106-002	EM1709106-003	EM1709106-004	EM1709106-005	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	8.12	6.70	6.88	7.65	7.94	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	3530	1600	797	739	1420	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	900	828	370	586	819	
Total Alkalinity as CaCO3	----	1	mg/L	900	828	370	586	819	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	971	<5	38	95	225	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	1690	12	57	132	415	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	860	539	169	21	160	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	9	205	70	25	61	
Magnesium	7439-95-4	1	mg/L	32	98	29	37	46	
Sodium	7440-23-5	1	mg/L	1260	224	128	204	444	
Potassium	7440-09-7	1	mg/L	25	29	20	31	33	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.02	0.02	0.04	0.01	0.02	
Arsenic	7440-38-2	0.001	mg/L	0.003	----	0.011	0.001	<0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	----	0.002	<0.001	0.002	
Copper	7440-50-8	0.001	mg/L	0.001	----	<0.001	<0.001	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	----	<0.001	<0.001	<0.001	
Manganese	7439-96-5	0.001	mg/L	0.059	0.566	0.417	0.314	0.166	
Nickel	7440-02-0	0.001	mg/L	0.017	----	0.020	0.012	0.016	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Zinc	7440-66-6	0.005	mg/L	0.108	----	0.171	0.235	0.008	
Iron	7439-89-6	0.05	mg/L	<0.05	27.4	10.4	<0.05	0.61	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	20.9	3.36	2.20	0.66	3.23	
Arsenic	7440-38-2	0.001	mg/L	0.011	----	0.018	0.004	0.002	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW38_11/07/17	GW33_11/07/17	GW36_11/07/17	GW37_11/07/17	GW28_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-001	EM1709106-002	EM1709106-003	EM1709106-004	EM1709106-005	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	0.0002	----	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.092	----	0.008	0.002	0.008	
Copper	7440-50-8	0.001	mg/L	0.035	----	0.007	0.002	0.003	
Nickel	7440-02-0	0.001	mg/L	0.128	----	0.021	0.011	0.020	
Lead	7439-92-1	0.001	mg/L	0.065	----	0.004	<0.001	0.002	
Zinc	7440-66-6	0.005	mg/L	0.248	----	0.223	0.202	0.026	
Manganese	7439-96-5	0.001	mg/L	0.537	0.622	0.441	0.319	0.188	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	38.2	38.3	17.6	0.89	2.93	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	<0.0001	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	1.7	0.2	0.9	1.0	1.5	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	0.02	7.86	2.83	0.48	8.20	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	0.01	<0.01	0.01	0.03	<0.01	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	2.17	0.02	<0.01	0.10	<0.01	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	2.18	0.02	<0.01	0.13	<0.01	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.37	0.03	<0.01	<0.01	0.85	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	62.4	31.7	13.0	14.3	25.6	
Total Cations	----	0.01	meq/L	58.5	28.8	12.0	14.0	27.0	
Ionic Balance	----	0.01	%	3.25	4.90	3.98	1.13	2.71	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	9	9	30	4	28	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW38_11/07/17	GW33_11/07/17	GW36_11/07/17	GW37_11/07/17	GW28_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-001	EM1709106-002	EM1709106-003	EM1709106-004	EM1709106-005	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	<1	<1	<1	<1	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	<1	<1	<1	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	<1	<1	<1	
Styrene	100-42-5	1	µg/L	<1	<1	<1	<1	<1	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	<1	<1	<1	
Isopropylbenzene	98-82-8	1	µg/L	<1	<1	<1	<1	<1	
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	<1	<1	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	<1	<1	<1	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	<1	<1	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	<1	<1	<1	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	<1	<1	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	<1	<1	<1	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	<10	<10	<10	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	<10	<10	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	<10	<10	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	<10	<10	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	<10	<10	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	1	<1	<1	1	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	<10	<10	<10	
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	<10	
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	<10.0	<10.0	<10.0	
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	<10	
Chloroethane	75-00-3	10	µg/L	<10	<10	<10	<10	<10	
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	<10	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW38_11/07/17	GW33_11/07/17	GW36_11/07/17	GW37_11/07/17	GW28_11/07/17
Client sampling date / time					11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709106-001	EM1709106-002	EM1709106-003	EM1709106-004	EM1709106-005	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	<1	
Iodomethane	74-88-4	1	µg/L	<1	<1	<1	<1	<1	
Methylene chloride	75-09-2	4	µg/L	<4	<4	----	<4	<4	
Methylene chloride	75-09-2	5	µg/L	----	----	<5	----	----	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	<1	<1	<1	
1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	<1	<1	<1	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	<1	<1	<1	
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	<1	
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	<1	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	<1	
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	<1	
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	<1	
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	<1	
1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	<1	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	<1	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	<1	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	<1	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	<1	<1	<1	
1,1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	<1	
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	<1	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	<1	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	<1	<1	<1	<1	
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	<1	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	<1	<1	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	<1	
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	<1	<1	<1	
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	<1	<1	<1	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	<1	<1	<1	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	<1	<1	<1	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW38_11/07/17	GW33_11/07/17	GW36_11/07/17	GW37_11/07/17	GW28_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-001	EM1709106-002	EM1709106-003	EM1709106-004	EM1709106-005	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes</b>									
Chloroform	67-66-3	1	µg/L	<1	<1	<1	<1	<1	
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	<1	<1	<1	
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	<1	
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW38_11/07/17	GW33_11/07/17	GW36_11/07/17	GW37_11/07/17	GW28_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-001	EM1709106-002	EM1709106-003	EM1709106-004	EM1709106-005	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	----	----	----	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	----	----	----	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	----	----	----	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	----	----	----	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	----	----	----	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	----	----	----	----	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	----	----	----	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	----	----	----	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	----	----	----	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	----	----	----	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW38_11/07/17	GW33_11/07/17	GW36_11/07/17	GW37_11/07/17	GW28_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-001	EM1709106-002	EM1709106-003	EM1709106-004	EM1709106-005	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	----	----	----	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	----	----	----	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	----	----	----	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	----	----	----	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	----	----	----	----	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	----	----	----	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	----	----	----	----	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	----	----	----	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	----	----	----	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	----	----	----	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	----	----	----	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	----	----	----	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	----	----	----	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	----	----	----	----	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	----	----	----	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	----	----	----	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	----	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW38_11/07/17	GW33_11/07/17	GW36_11/07/17	GW37_11/07/17	GW28_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-001	EM1709106-002	EM1709106-003	EM1709106-004	EM1709106-005	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	----	----	----	----	----
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	----	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----	----
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	99.1	96.1	99.2	92.3	94.5	
Toluene-D8	2037-26-5	1	%	98.8	95.9	99.0	91.8	94.1	
4-Bromofluorobenzene	460-00-4	1	%	99.9	92.3	99.5	94.5	94.3	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	35.6	34.5	34.5	27.6	26.0	
2-Chlorophenol-D4	93951-73-6	1	%	90.7	87.5	90.2	78.6	79.2	
2,4,6-Tribromophenol	118-79-6	1	%	73.3	80.3	83.3	67.6	66.0	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	75.8	77.8	78.9	68.7	64.6	
Anthracene-d10	1719-06-8	1	%	82.4	82.3	83.8	72.5	71.8	
4-Terphenyl-d14	1718-51-0	1	%	87.5	86.6	85.1	75.5	73.3	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	101	98.0	101	94.2	96.4	
Toluene-D8	2037-26-5	2	%	92.3	89.6	92.4	85.8	87.9	
4-Bromofluorobenzene	460-00-4	2	%	97.0	89.6	95.5	92.5	92.8	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	98.9	----	----	----	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW23_11/07/17	GW22_11/07/17	QC304_11/07/17	GW29_11/07/17	GW05_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-006	EM1709106-007	EM1709106-008	EM1709106-009	EM1709106-010	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	6.55	6.58	----	7.60	7.89	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	2190	782	----	878	1290	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	82	90	----	408	1070	
Total Alkalinity as CaCO3	----	1	mg/L	82	90	----	408	1070	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	682	200	----	227	<5	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	999	348	----	306	60	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	762	51	----	109	163	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	181	61	----	162	100	
Magnesium	7439-95-4	1	mg/L	76	23	----	28	117	
Sodium	7440-23-5	1	mg/L	459	52	----	96	238	
Potassium	7440-09-7	1	mg/L	26	7	----	8	56	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.03	0.10	----	<0.01	<0.01	
Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	----	0.001	0.007	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.003	0.007	----	<0.001	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	0.002	----	<0.001	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	0.002	----	<0.001	<0.001	
Manganese	7439-96-5	0.001	mg/L	0.434	0.110	----	0.017	0.369	
Nickel	7440-02-0	0.001	mg/L	0.008	0.005	----	0.035	0.009	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	----	<0.01	<0.01	
Zinc	7440-66-6	0.005	mg/L	0.372	0.088	----	0.012	0.006	
Iron	7439-89-6	0.05	mg/L	16.3	2.86	----	0.91	11.4	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	3.84	13.5	<0.01	2.81	21.9	
Arsenic	7440-38-2	0.001	mg/L	0.018	0.029	<0.001	0.017	0.040	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW23_11/07/17	GW22_11/07/17	QC304_11/07/17	GW29_11/07/17	GW05_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-006	EM1709106-007	EM1709106-008	EM1709106-009	EM1709106-010	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0001	<0.0001	<0.0001	0.0031	
Chromium	7440-47-3	0.001	mg/L	0.019	0.042	<0.001	0.012	0.079	
Copper	7440-50-8	0.001	mg/L	0.006	0.013	<0.001	0.005	1.63	
Nickel	7440-02-0	0.001	mg/L	0.013	0.013	<0.001	0.069	0.466	
Lead	7439-92-1	0.001	mg/L	0.011	0.113	<0.001	0.055	5.15	
Zinc	7440-66-6	0.005	mg/L	0.419	0.151	<0.005	0.061	2.44	
Manganese	7439-96-5	0.001	mg/L	0.472	0.117	----	0.042	0.717	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	34.1	19.5	<0.05	15.9	66.2	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.3	0.1	----	0.3	0.6	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	1.71	0.42	----	0.02	6.14	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	0.01	0.01	----	0.02	<0.01	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	0.02	----	0.24	<0.01	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	0.01	0.03	----	0.26	<0.01	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	----	<0.01	<0.01	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	37.3	7.40	----	16.0	26.0	
Total Cations	----	0.01	meq/L	35.9	7.38	----	14.8	26.4	
Ionic Balance	----	0.01	%	1.93	0.16	----	3.85	0.82	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	9	23	----	13	17	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	<1	----	----	<1	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW23_11/07/17	GW22_11/07/17	QC304_11/07/17	GW29_11/07/17	GW05_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-006	EM1709106-007	EM1709106-008	EM1709106-009	EM1709106-010	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	<1	----	----	<1	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	----	----	<1	
meta- & para-Xylene	108-38-3	106-42-3	1	µg/L	<1	<1	----	<1	
Styrene	100-42-5	1	µg/L	<1	<1	----	----	<1	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	----	----	<1	
Isopropylbenzene	98-82-8	1	µg/L	<1	<1	----	----	<1	
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	----	----	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	----	----	<1	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	----	----	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	----	----	<1	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	----	----	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	----	----	<1	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	----	----	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	----	----	<10	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	----	----	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	----	----	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	----	----	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	----	----	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	<1	----	----	<1	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	----	----	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	----	----	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	----	----	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	----	----	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	----	----	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	----	----	<10	
Chloromethane	74-87-3	10	µg/L	<10	<10	----	----	<10	
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	----	----	<10.0	
Bromomethane	74-83-9	10	µg/L	<10	<10	----	----	<10	
Chloroethane	75-00-3	10	µg/L	<10	<10	----	----	<10	
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	----	----	<10	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW23_11/07/17	GW22_11/07/17	QC304_11/07/17	GW29_11/07/17	GW05_11/07/17
Client sampling date / time					11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709106-006	EM1709106-007	EM1709106-008	EM1709106-009	EM1709106-010	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	----	----	<1	
Iodomethane	74-88-4	1	µg/L	<1	<1	----	----	<1	
Methylene chloride	75-09-2	4	µg/L	<4	<4	----	----	<4	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	----	----	<1	
1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	----	----	<1	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	2	<1	----	----	<1	
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	----	----	<1	
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	----	----	<1	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	----	----	<1	
1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	----	----	<1	
Trichloroethene	79-01-6	1	µg/L	<1	<1	----	----	<1	
Dibromomethane	74-95-3	1	µg/L	<1	<1	----	----	<1	
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	----	----	<1	
1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	----	----	<1	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	----	----	<1	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	----	----	<1	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	----	----	<1	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	----	----	<1	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	----	----	<1	
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	----	----	<1	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	----	----	<1	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	----	----	<1	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	----	----	<1.0	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	<1	----	----	<1	
Bromobenzene	108-86-1	1	µg/L	<1	<1	----	----	<1	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	----	----	<1	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	----	----	<1	
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	----	----	<1	
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	<1.0	----	----	<1.0	
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	----	----	<1	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	----	----	<1	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	----	----	<1	
<b>EP074G: Trihalomethanes</b>									







## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW23_11/07/17	GW22_11/07/17	QC304_11/07/17	GW29_11/07/17	GW05_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-006	EM1709106-007	EM1709106-008	EM1709106-009	EM1709106-010	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	97.4	94.6	----	----	93.2	
Toluene-D8	2037-26-5	1	%	99.2	96.1	----	----	93.8	
4-Bromofluorobenzene	460-00-4	1	%	100	96.7	----	----	96.6	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	30.3	34.7	----	35.9	30.5	
2-Chlorophenol-D4	93951-73-6	1	%	84.8	90.7	----	88.9	78.8	
2,4,6-Tribromophenol	118-79-6	1	%	80.8	80.1	----	80.1	79.7	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	78.5	80.9	----	80.9	72.6	
Anthracene-d10	1719-06-8	1	%	85.6	87.5	----	86.8	83.1	
4-Terphenyl-d14	1718-51-0	1	%	90.0	92.6	----	94.9	87.0	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	99.5	96.5	95.5	96.4	95.2	
Toluene-D8	2037-26-5	2	%	92.5	89.7	84.7	88.6	87.5	
4-Bromofluorobenzene	460-00-4	2	%	98.8	93.9	90.1	94.2	91.1	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW09_11/07/17	GW03_11/07/17	GW04_11/07/17	QC203_11/07/17	GW11_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-011	EM1709106-012	EM1709106-013	EM1709106-014	EM1709106-015	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.71	7.76	7.80	7.81	7.79	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	985	1410	814	916	629	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	391	912	601	603	272	
Total Alkalinity as CaCO3	----	1	mg/L	391	912	601	603	272	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	318	259	182	178	189	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	518	497	122	278	305	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	84	136	30	28	13	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	167	202	189	189	155	
Magnesium	7439-95-4	1	mg/L	32	113	49	48	11	
Sodium	7440-23-5	1	mg/L	117	173	54	54	26	
Potassium	7440-09-7	1	mg/L	24	47	13	13	9	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.03	<0.01	<0.01	<0.01	<0.01	
Arsenic	7440-38-2	0.001	mg/L	<0.001	0.007	0.002	0.002	0.005	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.001	0.002	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Manganese	7439-96-5	0.001	mg/L	0.269	0.645	0.162	0.160	0.130	
Nickel	7440-02-0	0.001	mg/L	0.010	0.012	0.022	0.021	0.012	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Zinc	7440-66-6	0.005	mg/L	<0.005	0.012	0.079	0.074	<0.005	
Iron	7439-89-6	0.05	mg/L	9.89	8.56	0.67	0.67	1.98	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.93	1.70	27.5	30.4	0.32	
Arsenic	7440-38-2	0.001	mg/L	0.002	0.010	0.071	0.080	0.008	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW09_11/07/17	GW03_11/07/17	GW04_11/07/17	QC203_11/07/17	GW11_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-011	EM1709106-012	EM1709106-013	EM1709106-014	EM1709106-015	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0002	0.0013	0.0016	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.003	0.004	0.069	0.075	0.002	
Copper	7440-50-8	0.001	mg/L	0.001	0.013	0.100	0.109	<0.001	
Nickel	7440-02-0	0.001	mg/L	0.011	0.016	0.075	0.083	0.012	
Lead	7439-92-1	0.001	mg/L	0.003	0.153	0.186	0.203	0.001	
Zinc	7440-66-6	0.005	mg/L	0.008	0.150	1.23	1.37	<0.005	
Manganese	7439-96-5	0.001	mg/L	0.300	0.700	1.38	1.52	0.135	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	16.1	11.7	69.8	78.1	3.32	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.3	0.5	0.4	0.4	0.2	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	5.13	0.78	0.02	0.03	0.37	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	0.35	<0.01	0.01	<0.01	0.01	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	0.35	<0.01	0.01	<0.01	0.01	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	16.8	27.4	16.6	16.5	9.74	
Total Cations	----	0.01	meq/L	16.7	28.1	16.1	16.1	10.0	
Ionic Balance	----	0.01	%	0.40	1.18	1.52	1.47	1.34	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	12	11	4	4	7	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW09_11/07/17	GW03_11/07/17	GW04_11/07/17	QC203_11/07/17	GW11_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-011	EM1709106-012	EM1709106-013	EM1709106-014	EM1709106-015	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	<1	<1	<1	<1	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	<1	<1	<1	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	<1	<1	<1	
Styrene	100-42-5	1	µg/L	<1	<1	<1	<1	<1	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	<1	<1	<1	
Isopropylbenzene	98-82-8	1	µg/L	<1	<1	<1	<1	<1	
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	<1	<1	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	<1	<1	<1	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	<1	<1	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	<1	<1	<1	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	<1	<1	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	<1	<1	<1	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	<10	<10	<10	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	<10	<10	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	<10	<10	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	<10	<10	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	<10	<10	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	<10	<10	<10	
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	<10	
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	<10.0	<10.0	<10.0	
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	<10	
Chloroethane	75-00-3	10	µg/L	<10	<10	<10	<10	<10	
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	<10	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW09_11/07/17	GW03_11/07/17	GW04_11/07/17	QC203_11/07/17	GW11_11/07/17
Client sampling date / time					11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709106-011	EM1709106-012	EM1709106-013	EM1709106-014	EM1709106-015	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	<1	
Iodomethane	74-88-4	1	µg/L	<1	<1	<1	<1	<1	
Methylene chloride	75-09-2	4	µg/L	<4	<4	<4	<4	<4	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	<1	<1	<1	
1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	<1	<1	<1	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	<1	<1	7	
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	<1	
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	<1	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	<1	
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	<1	
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	<1	
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	<1	
1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	<1	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	<1	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	<1	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	<1	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	<1	<1	<1	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	<1	
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	<1	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	<1	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	<1	<1	<1	<1	
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	<1	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	<1	<1	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	<1	
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	<1	<1	<1	
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	<1	<1	<1	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	<1	<1	<1	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074G: Trihalomethanes</b>									





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW09_11/07/17	GW03_11/07/17	GW04_11/07/17	QC203_11/07/17	GW11_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-011	EM1709106-012	EM1709106-013	EM1709106-014	EM1709106-015	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	<1	<1	<1	<1	<1	
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	<1	<1	<1	
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	<1	
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<b>260</b>	
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<b>260</b>	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW09_11/07/17	GW03_11/07/17	GW04_11/07/17	QC203_11/07/17	GW11_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-011	EM1709106-012	EM1709106-013	EM1709106-014	EM1709106-015	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	330	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	330	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	330	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	----	<0.02	----	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	----	<0.02	----	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	----	<0.02	----	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	----	<0.02	----	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	----	<0.01	----	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	----	<0.02	----	----	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	----	<0.1	----	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	----	<0.02	----	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	----	<0.02	----	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	----	<0.02	----	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW09_11/07/17	GW03_11/07/17	GW04_11/07/17	QC203_11/07/17	GW11_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-011	EM1709106-012	EM1709106-013	EM1709106-014	EM1709106-015	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	----	<0.01	----	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	----	<0.02	----	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	----	<0.02	----	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	----	<0.02	----	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	----	<0.02	----	----	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	----	----	<0.02	----	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	----	<0.05	----	----	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	----	<0.02	----	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	----	<0.05	----	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	----	<0.05	----	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	----	----	<0.05	----	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	----	<0.05	----	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	----	<0.02	----	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	----	<0.02	----	----	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	----	<0.05	----	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	----	<0.05	----	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	----	<0.05	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW09_11/07/17	GW03_11/07/17	GW04_11/07/17	QC203_11/07/17	GW11_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-011	EM1709106-012	EM1709106-013	EM1709106-014	EM1709106-015	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	----	<0.05	----	----	
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	----	----	<0.01	----	----	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	----	<0.01	----	----	
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	----	<0.01	----	----	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	92.5	94.7	94.2	92.8	93.0	
Toluene-D8	2037-26-5	1	%	94.4	89.6	94.9	91.4	92.4	
4-Bromofluorobenzene	460-00-4	1	%	93.7	91.0	96.4	97.8	96.7	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	35.3	32.6	35.6	30.3	35.4	
2-Chlorophenol-D4	93951-73-6	1	%	87.2	90.0	87.1	89.2	92.5	
2,4,6-Tribromophenol	118-79-6	1	%	78.7	70.9	81.6	71.3	76.5	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	80.2	69.4	74.0	81.8	71.0	
Anthracene-d10	1719-06-8	1	%	85.6	78.1	90.0	91.2	83.3	
4-Terphenyl-d14	1718-51-0	1	%	90.4	80.4	93.5	97.9	85.5	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	94.4	96.6	96.0	94.7	94.8	
Toluene-D8	2037-26-5	2	%	87.9	83.6	88.6	85.2	86.3	
4-Bromofluorobenzene	460-00-4	2	%	93.4	90.1	95.0	93.7	91.5	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	----	----	97.1	----	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW06_11/07/17	QC205_11/07/17	QC202_11/07/17	QC206_11/07/17	GW39_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-016	EM1709106-017	EM1709106-018	EM1709106-019	EM1709106-020	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.68	----	----	----	----	6.91
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	2350	----	----	----	----	1310
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	621	----	----	----	----	227
Total Alkalinity as CaCO3	----	1	mg/L	621	----	----	----	----	227
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	728	----	----	----	----	140
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	1150	----	----	----	----	191
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	494	----	----	----	----	594
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	263	----	----	----	----	93
Magnesium	7439-95-4	1	mg/L	83	----	----	----	----	38
Sodium	7440-23-5	1	mg/L	422	----	----	----	----	283
Potassium	7440-09-7	1	mg/L	54	----	----	----	----	19
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.04	----	----	----	----	0.09
Arsenic	7440-38-2	0.001	mg/L	0.036	----	----	----	----	0.022
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----	<0.0001
Chromium	7440-47-3	0.001	mg/L	0.002	----	----	----	----	0.003
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----	<0.001
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----	<0.001
Manganese	7439-96-5	0.001	mg/L	0.504	----	----	----	----	0.043
Nickel	7440-02-0	0.001	mg/L	0.015	----	----	----	----	0.026
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	----	----	<0.01
Zinc	7440-66-6	0.005	mg/L	0.011	----	----	----	----	0.009
Iron	7439-89-6	0.05	mg/L	24.8	----	----	----	----	4.76
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.44	----	<0.01	----	----	1.32
Arsenic	7440-38-2	0.001	mg/L	0.080	----	<0.001	----	----	0.109



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW06_11/07/17	QC205_11/07/17	QC202_11/07/17	QC206_11/07/17	GW39_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-016	EM1709106-017	EM1709106-018	EM1709106-019	EM1709106-020	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	<0.0001	----	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<b>0.005</b>	----	<0.001	----	<b>0.007</b>	
Copper	7440-50-8	0.001	mg/L	<b>0.003</b>	----	<0.001	----	<b>0.005</b>	
Nickel	7440-02-0	0.001	mg/L	<b>0.018</b>	----	<0.001	----	<b>0.029</b>	
Lead	7439-92-1	0.001	mg/L	<b>0.007</b>	----	<0.001	----	<b>0.010</b>	
Zinc	7440-66-6	0.005	mg/L	<b>0.010</b>	----	<0.005	----	<b>0.013</b>	
Manganese	7439-96-5	0.001	mg/L	<b>0.546</b>	----	----	----	<b>0.049</b>	
Selenium	7782-49-2	0.01	mg/L	<0.01	----	<0.01	----	<0.01	
Iron	7439-89-6	0.05	mg/L	<b>34.4</b>	----	<0.05	----	<b>16.1</b>	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	<0.0001	----	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	<b>0.5</b>	----	----	----	<b>0.2</b>	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	<b>8.49</b>	----	----	----	<b>1.41</b>	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	----	----	----	<0.01	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<b>0.28</b>	----	----	----	<0.01	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<b>0.28</b>	----	----	----	<0.01	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	----	----	----	<b>0.02</b>	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	<b>41.5</b>	----	----	----	<b>24.2</b>	
Total Cations	----	0.01	meq/L	<b>39.7</b>	----	----	----	<b>20.6</b>	
Ionic Balance	----	0.01	%	<b>2.23</b>	----	----	----	<b>8.14</b>	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	<b>46</b>	----	----	----	<b>29</b>	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	----	----	----	<1	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW06_11/07/17	QC205_11/07/17	QC202_11/07/17	QC206_11/07/17	GW39_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-016	EM1709106-017	EM1709106-018	EM1709106-019	EM1709106-020	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	----	----	----	----	<1
Ethylbenzene	100-41-4	1	µg/L	<1	----	----	----	----	<1
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	----	----	----	----	<1
Styrene	100-42-5	1	µg/L	<1	----	----	----	----	<1
ortho-Xylene	95-47-6	1	µg/L	<1	----	----	----	----	<1
Isopropylbenzene	98-82-8	1	µg/L	<1	----	----	----	----	<1
n-Propylbenzene	103-65-1	1	µg/L	<1	----	----	----	----	<1
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	----	----	----	----	<1
sec-Butylbenzene	135-98-8	1	µg/L	<1	----	----	----	----	<1
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	----	----	----	----	<1
tert-Butylbenzene	98-06-6	1	µg/L	<1	----	----	----	----	<1
p-Isopropyltoluene	99-87-6	1	µg/L	<1	----	----	----	----	<1
n-Butylbenzene	104-51-8	1	µg/L	<1	----	----	----	----	<1
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	----	----	----	----	<10
Vinyl Acetate	108-05-4	10	µg/L	<10	----	----	----	----	<10
2-Butanone (MEK)	78-93-3	10	µg/L	<10	----	----	----	----	<10
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	----	----	----	----	<10
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	----	----	----	----	<10
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	----	----	----	----	<1
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	----	----	----	----	<1
1,2-Dichloropropane	78-87-5	1	µg/L	<1	----	----	----	----	<1
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	----	----	----	----	<2
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	----	----	----	----	<2
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	----	----	----	----	<1
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	----	----	----	----	<10
Chloromethane	74-87-3	10	µg/L	<10	----	----	----	----	<10
Vinyl chloride	75-01-4	10	µg/L	<10.0	----	----	----	----	<10.0
Bromomethane	74-83-9	10	µg/L	<10	----	----	----	----	<10
Chloroethane	75-00-3	10	µg/L	<10	----	----	----	----	<10
Trichlorofluoromethane	75-69-4	10	µg/L	<10	----	----	----	----	<10



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW06_11/07/17	QC205_11/07/17	QC202_11/07/17	QC206_11/07/17	GW39_11/07/17
Client sampling date / time					11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709106-016	EM1709106-017	EM1709106-018	EM1709106-019	EM1709106-020	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	----	----	----	----	<1
Iodomethane	74-88-4	1	µg/L	<1	----	----	----	----	<1
Methylene chloride	75-09-2	4	µg/L	<4	----	----	----	----	<4
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	----	----	----	----	<1
1,1-Dichloroethane	75-34-3	1	µg/L	<1	----	----	----	----	<1
cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	----	----	----	----	7
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	----	----	----	----	<1
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	----	----	----	----	<1
Carbon Tetrachloride	56-23-5	1	µg/L	<1	----	----	----	----	<1
1,2-Dichloroethane	107-06-2	1	µg/L	<1	----	----	----	----	<1
Trichloroethene	79-01-6	1	µg/L	<1	----	----	----	----	<1
Dibromomethane	74-95-3	1	µg/L	<1	----	----	----	----	<1
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	----	----	----	----	<1
1,3-Dichloropropane	142-28-9	1	µg/L	<1	----	----	----	----	<1
Tetrachloroethene	127-18-4	1	µg/L	<1	----	----	----	----	<1
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	----	----	----	----	<1
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	----	----	----	----	<1
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	----	----	----	----	<1
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	----	----	----	----	<1
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	----	----	----	----	<1
Pentachloroethane	76-01-7	1	µg/L	<1	----	----	----	----	<1
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	----	----	----	----	<1
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	----	----	----	----	<1.0
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	----	----	----	----	<1
Bromobenzene	108-86-1	1	µg/L	<1	----	----	----	----	<1
2-Chlorotoluene	95-49-8	1	µg/L	<1	----	----	----	----	<1
4-Chlorotoluene	106-43-4	1	µg/L	<1	----	----	----	----	<1
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	----	----	----	----	<1
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	----	----	----	----	<1.0
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	----	----	----	----	<1
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	----	----	----	----	<1
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	----	----	----	----	<1
<b>EP074G: Trihalomethanes</b>									







## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW06_11/07/17	QC205_11/07/17	QC202_11/07/17	QC206_11/07/17	GW39_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-016	EM1709106-017	EM1709106-018	EM1709106-019	EM1709106-020	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	----	<100	----	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	----	<100	----	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	----	<100	----	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	<100	----	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	<100	----	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	95.0	----	----	----	91.9	
Toluene-D8	2037-26-5	1	%	93.1	----	----	----	89.8	
4-Bromofluorobenzene	460-00-4	1	%	96.4	----	----	----	95.4	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	33.8	----	----	----	35.5	
2-Chlorophenol-D4	93951-73-6	1	%	89.6	----	----	----	82.5	
2,4,6-Tribromophenol	118-79-6	1	%	91.8	----	----	----	72.4	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	91.1	----	----	----	70.0	
Anthracene-d10	1719-06-8	1	%	94.0	----	----	----	79.8	
4-Terphenyl-d14	1718-51-0	1	%	98.6	----	----	----	80.6	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	96.9	94.3	97.3	94.6	93.6	
Toluene-D8	2037-26-5	2	%	86.9	86.0	87.6	86.3	83.7	
4-Bromofluorobenzene	460-00-4	2	%	92.7	91.6	91.1	90.5	91.7	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW40_11/07/17	GW50_11/07/17	GW44_11/07/17	GW49_11/07/17	QC102_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-021	EM1709106-022	EM1709106-023	EM1709106-024	EM1709106-025	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	6.45	7.60	7.74	7.31	----	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	2990	13800	11500	254	----	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	142	1170	790	59	----	
Total Alkalinity as CaCO3	----	1	mg/L	142	1170	790	59	----	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1480	1260	1200	3	----	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	2370	1990	1800	8	----	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	710	7410	6580	6	----	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	286	477	293	8	----	
Magnesium	7439-95-4	1	mg/L	118	444	575	6	----	
Sodium	7440-23-5	1	mg/L	518	3830	3500	6	----	
Potassium	7440-09-7	1	mg/L	16	148	129	3	----	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.03	0.05	<0.01	0.10	----	
Arsenic	7440-38-2	0.001	mg/L	0.006	0.017	<0.001	0.001	----	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----	
Chromium	7440-47-3	0.001	mg/L	<0.001	0.005	0.004	0.002	----	
Copper	7440-50-8	0.001	mg/L	<0.001	0.002	<0.001	<0.001	----	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----	
Manganese	7439-96-5	0.001	mg/L	0.742	0.869	0.043	0.020	----	
Nickel	7440-02-0	0.001	mg/L	0.039	0.049	0.064	0.014	----	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----	
Zinc	7440-66-6	0.005	mg/L	0.156	0.015	0.007	0.007	----	
Iron	7439-89-6	0.05	mg/L	63.0	21.2	0.78	1.26	----	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	39.1	43.7	1.16	8.13	<0.01	
Arsenic	7440-38-2	0.001	mg/L	0.053	0.086	0.003	0.006	<0.001	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW40_11/07/17	GW50_11/07/17	GW44_11/07/17	GW49_11/07/17	QC102_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-021	EM1709106-022	EM1709106-023	EM1709106-024	EM1709106-025	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	0.0007	0.0016	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.085	0.139	0.008	0.026	<0.001	
Copper	7440-50-8	0.001	mg/L	0.059	0.079	0.002	0.003	<0.001	
Nickel	7440-02-0	0.001	mg/L	0.115	0.142	0.064	0.026	<0.001	
Lead	7439-92-1	0.001	mg/L	0.039	0.075	0.001	0.005	<0.001	
Zinc	7440-66-6	0.005	mg/L	0.432	0.278	0.010	0.030	<0.005	
Manganese	7439-96-5	0.001	mg/L	0.812	1.11	0.054	0.048	----	
Selenium	7782-49-2	0.01	mg/L	0.01	0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	106	91.9	2.74	12.1	<0.05	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	<0.1	1.3	0.4	1.0	----	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	3.99	13.4	12.2	0.17	----	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.02	<0.01	0.01	----	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	0.42	0.32	0.01	----	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.44	0.32	0.02	----	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	2.21	0.03	----	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	53.7	259	226	1.41	----	
Total Cations	----	0.01	meq/L	----	----	----	1.30	----	
Total Cations	----	0.01	meq/L	46.9	231	217	----	----	
Ionic Balance	----	0.01	%	----	----	----	4.18	----	
Ionic Balance	----	0.01	%	6.71	5.70	2.00	----	----	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	19	64	46	5	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW40_11/07/17	GW50_11/07/17	GW44_11/07/17	GW49_11/07/17	QC102_11/07/17
Client sampling date / time					11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709106-021	EM1709106-022	EM1709106-023	EM1709106-024	EM1709106-025	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	----	
Toluene	108-88-3	1	µg/L	<1	<1	<1	<1	----	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	<1	<1	----	
meta- & para-Xylene	108-38-3	106-42-3	1	µg/L	<1	<1	<1	----	
Styrene	100-42-5	1	µg/L	<1	<1	<1	<1	----	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	<1	<1	----	
Isopropylbenzene	98-82-8	1	µg/L	<1	<1	<1	<1	----	
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	<1	<1	----	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	<1	<1	----	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	<1	<1	----	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	<1	<1	----	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	<1	<1	----	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	<1	<1	----	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	<1	<1	----	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	<10	<10	----	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	<10	<10	----	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	<10	<10	----	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	<10	<10	----	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	<10	<10	----	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	<1	2	<1	----	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	----	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	----	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	----	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	----	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	----	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	<10	<10	----	
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	----	
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	<10.0	<10.0	----	
Bromomethane	74-83-9	10	µg/L	<10	<10	10	<10	----	
Chloroethane	75-00-3	10	µg/L	<10	<10	<10	<10	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW40_11/07/17	GW50_11/07/17	GW44_11/07/17	GW49_11/07/17	QC102_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-021	EM1709106-022	EM1709106-023	EM1709106-024	EM1709106-025	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	----	
1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	----	
Iodomethane	74-88-4	1	µg/L	<1	<1	<1	<1	----	
Methylene chloride	75-09-2	4	µg/L	<4	<4	<4	<4	----	
trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	<1	<1	<1	----	
1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	49	<1	----	
cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	<1	<1	3	----	
1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	----	
1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	----	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	----	
1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	----	
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	----	
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	----	
1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	----	
1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	----	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	----	
1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	----	
trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	----	
cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	<1	<1	----	
1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	----	
1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	----	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	<1	<1	----	
1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	----	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	<1	<1	<1	----	
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	----	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	<1	----	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	----	
1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	<1	<1	----	
1.4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
1.2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	<1	<1	----	
1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	<1	<1	----	
1.2.3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	<1	<1	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW40_11/07/17	GW50_11/07/17	GW44_11/07/17	GW49_11/07/17	QC102_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-021	EM1709106-022	EM1709106-023	EM1709106-024	EM1709106-025	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes</b>									
Chloroform	67-66-3	1	µg/L	<1	<1	<1	<1	----	
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	<1	<1	----	
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	----	
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	----	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	30	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW40_11/07/17	GW50_11/07/17	GW44_11/07/17	GW49_11/07/17	QC102_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-021	EM1709106-022	EM1709106-023	EM1709106-024	EM1709106-025	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	----	----	<0.02	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	----	----	<0.02	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	----	----	<0.02	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	----	----	<0.02	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	----	----	<0.01	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	----	----	<0.02	----	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	----	----	<0.1	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	----	----	<0.02	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	----	----	<0.02	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	----	----	<0.02	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW40_11/07/17	GW50_11/07/17	GW44_11/07/17	GW49_11/07/17	QC102_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-021	EM1709106-022	EM1709106-023	EM1709106-024	EM1709106-025	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	----	----	<0.01	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	----	----	<0.02	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	----	----	<0.02	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	----	----	<0.02	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	----	----	<0.02	----	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	----	----	----	<0.02	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	----	----	<0.05	----	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	----	----	<0.02	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	----	----	<0.05	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	----	----	<0.05	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	----	----	----	<0.05	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	----	----	<0.05	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	----	----	<0.02	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	----	----	<0.02	----	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	----	----	<0.05	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	----	----	<0.05	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	----	----	<0.05	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW40_11/07/17	GW50_11/07/17	GW44_11/07/17	GW49_11/07/17	QC102_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-021	EM1709106-022	EM1709106-023	EM1709106-024	EM1709106-025	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	----	----	<0.05	----	
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	----	----	----	<0.01	----	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	----	----	<0.01	----	
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	----	----	<0.01	----	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	96.5	97.5	98.6	92.9	----	
Toluene-D8	2037-26-5	1	%	97.8	92.1	96.6	94.0	----	
4-Bromofluorobenzene	460-00-4	1	%	96.5	97.0	97.1	98.3	----	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	33.9	36.4	32.4	34.6	----	
2-Chlorophenol-D4	93951-73-6	1	%	82.3	84.9	79.3	88.0	----	
2,4,6-Tribromophenol	118-79-6	1	%	64.6	86.0	67.9	83.2	----	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	59.1	83.1	68.7	85.8	----	
Anthracene-d10	1719-06-8	1	%	68.8	93.0	70.6	86.0	----	
4-Terphenyl-d14	1718-51-0	1	%	73.4	99.3	75.0	92.8	----	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	98.5	99.4	100	94.6	94.3	
Toluene-D8	2037-26-5	2	%	91.3	86.0	90.1	87.7	83.8	
4-Bromofluorobenzene	460-00-4	2	%	95.9	91.6	95.2	93.6	86.8	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	----	----	----	100	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Client sample ID			GW54_11/07/17	----	----	----	----
Client sampling date / time		11-Jul-2017 00:00			----	----	----	----	
Compound	CAS Number	LOR	Unit	EM1709106-026	-----	-----	-----	-----	
				Result	----	----	----	----	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.05	----	----	----	----	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	1670	----	----	----	----	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	680	----	----	----	----	
Total Alkalinity as CaCO3	----	1	mg/L	680	----	----	----	----	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	137	----	----	----	----	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	354	----	----	----	----	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	500	----	----	----	----	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	158	----	----	----	----	
Magnesium	7439-95-4	1	mg/L	77	----	----	----	----	
Sodium	7440-23-5	1	mg/L	362	----	----	----	----	
Potassium	7440-09-7	1	mg/L	21	----	----	----	----	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.41	----	----	----	----	
Arsenic	7440-38-2	0.001	mg/L	0.033	----	----	----	----	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----	
Chromium	7440-47-3	0.001	mg/L	0.007	----	----	----	----	
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----	
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----	
Manganese	7439-96-5	0.001	mg/L	0.554	----	----	----	----	
Nickel	7440-02-0	0.001	mg/L	0.012	----	----	----	----	
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	----	----	
Zinc	7440-66-6	0.005	mg/L	0.008	----	----	----	----	
Iron	7439-89-6	0.05	mg/L	2.10	----	----	----	----	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	117	----	----	----	----	
Arsenic	7440-38-2	0.001	mg/L	0.258	----	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW54_11/07/17	----	----	----	----
Client sampling date / time				11-Jul-2017 00:00	----	----	----	----	
Compound	CAS Number	LOR	Unit	EM1709106-026	-----	-----	-----	-----	
				Result	----	----	----	----	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	0.0012	----	----	----	----	
Chromium	7440-47-3	0.001	mg/L	0.393	----	----	----	----	
Copper	7440-50-8	0.001	mg/L	0.106	----	----	----	----	
Nickel	7440-02-0	0.001	mg/L	0.243	----	----	----	----	
Lead	7439-92-1	0.001	mg/L	0.239	----	----	----	----	
Zinc	7440-66-6	0.005	mg/L	0.391	----	----	----	----	
Manganese	7439-96-5	0.001	mg/L	1.12	----	----	----	----	
Selenium	7782-49-2	0.01	mg/L	<0.10	----	----	----	----	
Iron	7439-89-6	0.05	mg/L	97.2	----	----	----	----	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	<0.1	----	----	----	----	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	6.90	----	----	----	----	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	----	----	----	----	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	----	----	----	----	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	----	----	----	----	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.05	----	----	----	----	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	30.5	----	----	----	----	
Total Cations	----	0.01	meq/L	30.5	----	----	----	----	
Ionic Balance	----	0.01	%	0.06	----	----	----	----	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	75	----	----	----	----	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	----	----	----	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Client sample ID			GW54_11/07/17	----	----	----	----
Client sampling date / time		11-Jul-2017 00:00			----	----	----	----	----
Compound	CAS Number	LOR	Unit	EM1709106-026	-----	-----	-----	-----	-----
				Result	----	----	----	----	----
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	----	----	----	----	----
Ethylbenzene	100-41-4	1	µg/L	<1	----	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	----	----	----	----	----
Styrene	100-42-5	1	µg/L	<1	----	----	----	----	----
ortho-Xylene	95-47-6	1	µg/L	<1	----	----	----	----	----
Isopropylbenzene	98-82-8	1	µg/L	<1	----	----	----	----	----
n-Propylbenzene	103-65-1	1	µg/L	<1	----	----	----	----	----
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	----	----	----	----	----
sec-Butylbenzene	135-98-8	1	µg/L	<1	----	----	----	----	----
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	----	----	----	----	----
tert-Butylbenzene	98-06-6	1	µg/L	<1	----	----	----	----	----
p-Isopropyltoluene	99-87-6	1	µg/L	<1	----	----	----	----	----
n-Butylbenzene	104-51-8	1	µg/L	<1	----	----	----	----	----
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	----	----	----	----	----
Vinyl Acetate	108-05-4	10	µg/L	<10	----	----	----	----	----
2-Butanone (MEK)	78-93-3	10	µg/L	<10	----	----	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	----	----	----	----	----
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	----	----	----	----	----
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	----	----	----	----	----
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	----	----	----	----	----
1,2-Dichloropropane	78-87-5	1	µg/L	<1	----	----	----	----	----
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	----	----	----	----	----
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	----	----	----	----	----
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	----	----	----	----	----
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	----	----	----	----	----
Chloromethane	74-87-3	10	µg/L	<10	----	----	----	----	----
Vinyl chloride	75-01-4	10	µg/L	<10.0	----	----	----	----	----
Bromomethane	74-83-9	10	µg/L	<10	----	----	----	----	----
Chloroethane	75-00-3	10	µg/L	<10	----	----	----	----	----
Trichlorofluoromethane	75-69-4	10	µg/L	<10	----	----	----	----	----



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW54_11/07/17	----	----	----	----
Client sampling date / time				11-Jul-2017 00:00	----	----	----	----	
Compound	CAS Number	LOR	Unit	EM1709106-026	-----	-----	-----	-----	
				Result	----	----	----	----	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	----	----	----	----	
Iodomethane	74-88-4	1	µg/L	<1	----	----	----	----	
Methylene chloride	75-09-2	5	µg/L	<5	----	----	----	----	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	----	----	----	----	
1,1-Dichloroethane	75-34-3	1	µg/L	<1	----	----	----	----	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	----	----	----	----	
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	----	----	----	----	
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	----	----	----	----	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	----	----	----	----	
1,2-Dichloroethane	107-06-2	1	µg/L	<1	----	----	----	----	
Trichloroethene	79-01-6	1	µg/L	<1	----	----	----	----	
Dibromomethane	74-95-3	1	µg/L	<1	----	----	----	----	
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	----	----	----	----	
1,3-Dichloropropane	142-28-9	1	µg/L	<1	----	----	----	----	
Tetrachloroethene	127-18-4	1	µg/L	<1	----	----	----	----	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	----	----	----	----	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	----	----	----	----	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	----	----	----	----	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	----	----	----	----	
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	----	----	----	----	
Pentachloroethane	76-01-7	1	µg/L	<1	----	----	----	----	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	----	----	----	----	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	----	----	----	----	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	----	----	----	----	
Bromobenzene	108-86-1	1	µg/L	<1	----	----	----	----	
2-Chlorotoluene	95-49-8	1	µg/L	<1	----	----	----	----	
4-Chlorotoluene	106-43-4	1	µg/L	<1	----	----	----	----	
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	----	----	----	----	
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	----	----	----	----	
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	----	----	----	----	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	----	----	----	----	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	----	----	----	----	
<b>EP074G: Trihalomethanes</b>									





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Client sample ID			GW54_11/07/17	----	----	----	----
Client sampling date / time		11-Jul-2017 00:00			----	----	----	----	----
Compound	CAS Number	LOR	Unit	EM1709106-026	-----	-----	-----	-----	-----
				Result	----	----	----	----	----
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	<1	----	----	----	----	----
Bromodichloromethane	75-27-4	1	µg/L	<1	----	----	----	----	----
Dibromochloromethane	124-48-1	1	µg/L	<1	----	----	----	----	----
Bromoform	75-25-2	1	µg/L	<1	----	----	----	----	----
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	----	----	----	----	----
Acenaphthylene	208-96-8	1	µg/L	<1.0	----	----	----	----	----
Acenaphthene	83-32-9	1	µg/L	<1.0	----	----	----	----	----
Fluorene	86-73-7	1	µg/L	<1.0	----	----	----	----	----
Phenanthrene	85-01-8	1	µg/L	<1.0	----	----	----	----	----
Anthracene	120-12-7	1	µg/L	<1.0	----	----	----	----	----
Fluoranthene	206-44-0	1	µg/L	<1.0	----	----	----	----	----
Pyrene	129-00-0	1	µg/L	<1.0	----	----	----	----	----
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	----	----	----	----	----
Chrysene	218-01-9	1	µg/L	<1.0	----	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	----	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	----	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	----	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	----	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	----	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	----	----	----	----	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	----	----	----	----	----
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----	----
C15 - C28 Fraction	----	100	µg/L	<b>200</b>	----	----	----	----	----
C29 - C36 Fraction	----	50	µg/L	<b>100</b>	----	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<b>300</b>	----	----	----	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	----	----	----	----	----



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW54_11/07/17	----	----	----	----
Client sampling date / time				11-Jul-2017 00:00	----	----	----	----	
Compound	CAS Number	LOR	Unit	EM1709106-026	-----	-----	-----	-----	
				Result	----	----	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	----	----	----	----	
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	----	----	
>C16 - C34 Fraction	----	100	µg/L	250	----	----	----	----	
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	250	----	----	----	----	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	----	----	----	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	----	----	----	----	
Toluene	108-88-3	2	µg/L	<2	----	----	----	----	
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	----	----	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	----	----	----	
ortho-Xylene	95-47-6	2	µg/L	<2	----	----	----	----	
^ Total Xylenes	1330-20-7	2	µg/L	<2	----	----	----	----	
^ Sum of BTEX	----	1	µg/L	<1	----	----	----	----	
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	103	----	----	----	----	
Toluene-D8	2037-26-5	1	%	109	----	----	----	----	
4-Bromofluorobenzene	460-00-4	1	%	105	----	----	----	----	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	27.2	----	----	----	----	
2-Chlorophenol-D4	93951-73-6	1	%	75.5	----	----	----	----	
2,4,6-Tribromophenol	118-79-6	1	%	74.6	----	----	----	----	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	75.3	----	----	----	----	
Anthracene-d10	1719-06-8	1	%	79.0	----	----	----	----	
4-Terphenyl-d14	1718-51-0	1	%	84.4	----	----	----	----	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	100	----	----	----	----	
Toluene-D8	2037-26-5	2	%	99.0	----	----	----	----	
4-Bromofluorobenzene	460-00-4	2	%	101	----	----	----	----	





## Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	72	120
Toluene-D8	2037-26-5	70	130
4-Bromofluorobenzene	460-00-4	70	128
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	10	46
2-Chlorophenol-D4	93951-73-6	23	104
2,4,6-Tribromophenol	118-79-6	28	130
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129
<b>EP231S: PFAS Surrogate</b>			
13C4-PFOS	----	60	130

## QUALITY CONTROL REPORT

<b>Work Order</b>	<b>: EM1709106</b>	<b>Page</b>	: 1 of 42
<b>Client</b>	<b>: AECOM Australia Pty Ltd</b>	<b>Laboratory</b>	: Environmental Division Melbourne
<b>Contact</b>	<b>: MS AVERYLL COYNE</b>	<b>Contact</b>	: Carol Walsh
<b>Address</b>	<b>: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004</b>	<b>Address</b>	: 4 Westall Rd Springvale VIC Australia 3171
<b>Telephone</b>	<b>: +61 03 9653 1234</b>	<b>Telephone</b>	: +61-3-8549 9608
<b>Project</b>	<b>: 60537182</b>	<b>Date Samples Received</b>	: 12-Jul-2017
<b>Order number</b>	<b>: Task 3.2</b>	<b>Date Analysis Commenced</b>	: 13-Jul-2017
<b>C-O-C number</b>	<b>: ----</b>	<b>Issue Date</b>	: 19-Jul-2017
<b>Sampler</b>	<b>: BH, BP, JM</b>		
<b>Site</b>	<b>: ----</b>		
<b>Quote number</b>	<b>: ME/199/16</b>		
<b>No. of samples received</b>	<b>: 28</b>		
<b>No. of samples analysed</b>	<b>: 26</b>		



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Chris Lemaitre	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	Senior Semivolatile Instrument Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC





## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :  
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot  
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
 LOR = Limit of reporting  
 RPD = Relative Percentage Difference  
 # = Indicates failed QC

## Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA005P: pH by PC Titrator (QC Lot: 994067)</b>									
EM1709085-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.42	7.52	1.34	0% - 20%
EM1709088-010	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	5.66	5.61	0.887	0% - 20%
<b>EA005P: pH by PC Titrator (QC Lot: 994070)</b>									
EM1709106-006	GW23_11/07/17	EA005-P: pH Value	----	0.01	pH Unit	6.55	6.47	1.23	0% - 20%
EM1709106-020	GW39_11/07/17	EA005-P: pH Value	----	0.01	pH Unit	6.91	6.74	2.49	0% - 20%
<b>EA005P: pH by PC Titrator (QC Lot: 999214)</b>									
EM1709167-002	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	9.47	9.47	0.00	0% - 20%
EM1709149-049	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	6.09	5.72	6.26	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 993900)</b>									
EM1709061-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	1590	1580	0.503	0% - 20%
EM1709106-001	GW38_11/07/17	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	3530	3610	2.21	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 993905)</b>									
EM1709106-013	GW04_11/07/17	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	814	883	8.13	0% - 20%
EM1709107-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	686	692	1.02	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 996492)</b>									
EM1709106-026	GW54_11/07/17	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	1670	1640	1.93	0% - 20%
EM1709144-011	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	<10	0.00	No Limit
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 994066)</b>									
EM1709088-010	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	7	6	24.6	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	7	6	24.6	No Limit
EM1709106-006	GW23_11/07/17	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 994066) - continued</b>									
EM1709106-006	GW23_11/07/17	ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	82	81	1.63	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	82	81	1.63	0% - 20%
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 994072)</b>									
EM1709107-008	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	32	27	15.9	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	32	27	16.9	0% - 20%
EM1709106-020	GW39_11/07/17	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	227	223	2.00	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	227	223	2.00	0% - 20%
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 999215)</b>									
EM1709163-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	305	298	2.32	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	305	298	2.32	0% - 20%
EM1709188-004	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	654	657	0.485	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	654	657	0.485	0% - 20%
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 993991)</b>									
EM1709088-010	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	2	2	0.00	No Limit
EM1709106-006	GW23_11/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	682	673	1.29	0% - 20%
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 993995)</b>									
EM1709106-011	GW09_11/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	318	283	11.6	0% - 20%
EM1709106-022	GW50_11/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1260	1250	0.836	0% - 20%
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 996588)</b>									
EM1709163-004	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1870	1870	0.00	0% - 20%
EM1709106-026	GW54_11/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	137	136	0.757	0% - 20%
<b>ED043: Total Oxidised Sulfur as SO4 2- (QC Lot: 996723)</b>									
EM1709106-001	GW38_11/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	1690	1610	4.99	0% - 20%
EM1709106-011	GW09_11/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	518	520	0.326	0% - 20%
<b>ED043: Total Oxidised Sulfur as SO4 2- (QC Lot: 996724)</b>									
EM1709106-026	GW54_11/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	354	343	3.14	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 993992)</b>									
EM1709088-010	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	7	7	0.00	No Limit
EM1709106-006	GW23_11/07/17	ED045G: Chloride	16887-00-6	1	mg/L	762	743	2.47	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 993996)</b>									





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 993996) - continued</b>									
EM1709110-006	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	7	7	0.00	No Limit
EM1709106-022	GW50_11/07/17	ED045G: Chloride	16887-00-6	1	mg/L	7410	7330	1.08	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 996587)</b>									
EM1709163-004	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	7230	7180	0.662	0% - 20%
EM1709106-026	GW54_11/07/17	ED045G: Chloride	16887-00-6	1	mg/L	500	502	0.397	0% - 20%
<b>ED093F: Dissolved Major Cations (QC Lot: 994606)</b>									
EM1709106-002	GW33_11/07/17	ED093F: Calcium	7440-70-2	1	mg/L	205	211	3.11	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	98	101	3.48	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	224	232	3.25	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	29	30	0.00	0% - 20%
EM1709106-011	GW09_11/07/17	ED093F: Calcium	7440-70-2	1	mg/L	167	172	2.98	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	32	33	0.00	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	117	119	1.64	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	24	24	0.00	0% - 20%
<b>ED093F: Dissolved Major Cations (QC Lot: 996717)</b>									
EM1709186-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	1240	1250	0.493	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	181	180	0.854	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	6650	6670	0.394	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	537	530	1.20	0% - 20%
EM1709188-007	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	109	106	3.38	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	168	162	3.74	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	1330	1290	3.16	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	20	18	14.3	0% - 20%
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 994604)</b>									
EM1709106-001	GW38_11/07/17	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.003	0.003	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.059	0.058	0.00	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.017	0.017	0.00	0% - 50%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.108	0.107	1.44	0% - 20%
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.02	0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit
EM1709106-011	GW09_11/07/17	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 994604) - continued</b>									
EM1709106-011	GW09_11/07/17	EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.269	0.280	3.86	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.010	0.010	0.00	0% - 50%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.03	<0.01	90.6	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	9.89	10.2	3.66	0% - 20%
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 996715)</b>									
EM1709106-026	GW54_11/07/17	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.033	0.032	3.13	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.007	0.007	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.554	0.544	1.85	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.012	0.012	0.00	0% - 50%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.008	0.008	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.41	0.37	10.4	0% - 20%
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	2.10	2.09	0.783	0% - 20%
EM1709192-010	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.004	0.005	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.417	0.430	3.07	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	0.002	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.01	<0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	12.9	13.2	2.22	0% - 20%
<b>EG020T: Total Metals by ICP-MS (QC Lot: 994613)</b>									
EM1709106-001	GW38_11/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0002	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.011	0.013	12.7	0% - 50%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.092	0.100	7.67	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.035	0.038	8.34	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.065	0.064	0.00	0% - 20%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.537	0.550	2.38	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.128	0.131	2.35	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.248	0.257	3.61	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	20.9	22.9	9.16	0% - 20%





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020T: Total Metals by ICP-MS (QC Lot: 994613) - continued</b>									
EM1709106-001	GW38_11/07/17	EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	38.2	41.4	8.17	0% - 20%
EM1709106-010	GW05_11/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0031	0.0028	9.29	0% - 20%
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.040	0.041	2.65	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.079	0.083	4.30	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	1.63	1.75	7.36	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	5.15	5.36	3.89	0% - 20%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.717	0.745	3.80	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.466	0.500	6.84	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	2.44	2.56	4.79	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	21.9	22.0	0.618	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-T: Iron	7439-89-6	0.05	mg/L	66.2	67.4	1.84	0% - 20%		
<b>EG020T: Total Metals by ICP-MS (QC Lot: 994614)</b>									
EM1709106-023	GW44_11/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.003	0.003	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.008	0.008	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.003	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.054	0.052	3.51	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.064	0.063	2.74	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.010	0.010	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	1.16	1.23	5.69	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-T: Iron	7439-89-6	0.05	mg/L	2.74	2.62	4.75	0% - 20%		
EM1709168-005	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0002	<0.0002	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.002	<0.002	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.002	<0.002	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.003	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.002	<0.002	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.006	0.007	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.002	<0.002	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.016	0.020	24.1	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.03	0.05	29.9	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.02	<0.02	0.00	No Limit
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit		
<b>EG020T: Total Metals by ICP-MS (QC Lot: 996704)</b>									
EM1709066-038	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)		
<b>EG020T: Total Metals by ICP-MS (QC Lot: 996704) - continued</b>											
EM1709066-038	Anonymous	EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.002	0.002	0.00	No Limit		
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit		
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.03	0.03	0.00	No Limit		
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit		
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit		
EM1709175-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit		
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.616	0.610	1.07	0% - 20%		
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.003	0.003	0.00	No Limit		
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.002	0.002	0.00	No Limit		
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.542	0.533	1.77	0% - 20%		
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.623	0.599	3.88	0% - 20%		
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.02	0.02	0.00	No Limit		
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit		
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit		
		<b>EG020T: Total Metals by ICP-MS (QC Lot: 997181)</b>									
EM1709106-025	QC102_11/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit		
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.004	114	No Limit		
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit		
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.03	87.0	No Limit		
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit		
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.05	0.00	No Limit		
		EM1709206-002	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0006	0.0004	28.9	No Limit
				EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.049	0.047	2.85	0% - 20%
EG020A-T: Chromium	7440-47-3			0.001	mg/L	0.128	0.122	4.57	0% - 20%		
EG020A-T: Copper	7440-50-8			0.001	mg/L	0.339	0.328	3.24	0% - 20%		
EG020A-T: Lead	7439-92-1			0.001	mg/L	0.062	0.060	3.47	0% - 20%		
EG020A-T: Manganese	7439-96-5			0.001	mg/L	1.28	1.24	3.76	0% - 20%		
EG020A-T: Nickel	7440-02-0			0.001	mg/L	0.090	0.090	0.00	0% - 20%		
EG020A-T: Zinc	7440-66-6			0.005	mg/L	0.570	0.559	1.92	0% - 20%		
EG020A-T: Aluminium	7429-90-5			0.01	mg/L	53.4	51.9	2.80	0% - 20%		





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020T: Total Metals by ICP-MS (QC Lot: 997181) - continued</b>									
EM1709206-002	Anonymous	EG020A-T: Selenium	7782-49-2	0.01	mg/L	0.02	0.02	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	77.6	74.5	4.06	0% - 20%
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 994605)</b>									
EM1709106-012	GW03_11/07/17	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709106-001	GW38_11/07/17	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 996716)</b>									
EM1709106-026	GW54_11/07/17	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709192-010	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 996941)</b>									
EM1709001-019	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709106-008	QC304_11/07/17	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 996942)</b>									
EM1709106-021	GW40_11/07/17	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709187-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 999799)</b>									
EM1709009-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EK040P: Fluoride by PC Titrator (QC Lot: 994065)</b>									
EM1709088-010	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	<0.1	0.00	No Limit
EM1709106-006	GW23_11/07/17	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.3	0.2	0.00	No Limit
<b>EK040P: Fluoride by PC Titrator (QC Lot: 994071)</b>									
EM1709107-008	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.7	<0.1	150	No Limit
EM1709106-020	GW39_11/07/17	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.2	0.1	0.00	No Limit
<b>EK040P: Fluoride by PC Titrator (QC Lot: 999216)</b>									
EM1709192-006	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.4	0.4	0.00	No Limit
EM1709192-019	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.4	0.5	0.00	No Limit
<b>EK055G: Ammonia as N by Discrete Analyser (QC Lot: 994091)</b>									
EM1709106-002	GW33_11/07/17	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	7.86	8.44	7.08	0% - 20%
EM1709061-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.38	0.37	0.00	0% - 20%
<b>EK055G: Ammonia as N by Discrete Analyser (QC Lot: 994094)</b>									
EM1709106-014	QC203_11/07/17	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.03	0.02	58.8	No Limit
<b>EK055G: Ammonia as N by Discrete Analyser (QC Lot: 996684)</b>									
EM1709201-003	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.02	0.05	75.8	No Limit
EM1709106-026	GW54_11/07/17	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	6.90	5.02	31.7	0% - 50%
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 993990)</b>									
EM1709088-010	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EM1709106-006	GW23_11/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.01	0.01	0.00	No Limit
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 993994)</b>									
EM1709106-011	GW09_11/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.01	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 993994) - continued</b>										
EM1709106-022	GW50_11/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.02	0.02	0.00	No Limit	
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 996586)</b>										
EM1709163-004	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.04	0.04	0.00	No Limit	
EM1709106-026	GW54_11/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 994093)</b>										
EM1709106-001	GW38_11/07/17	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	2.18	2.11	3.20	0% - 20%	
EM1709106-011	GW09_11/07/17	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.35	0.35	0.00	0% - 20%	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 996683)</b>										
EM1709163-004	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	12.6	12.3	2.31	0% - 20%	
EM1709106-026	GW54_11/07/17	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 993993)</b>										
EM1709106-011	GW09_11/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit	
EM1709106-006	GW23_11/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 996585)</b>										
EM1709192-010	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit	
EM1709106-026	GW54_11/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.05	0.04	35.3	No Limit	
<b>EP005: Total Organic Carbon (TOC) (QC Lot: 1000199)</b>										
EM1709009-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	3	3	0.00	No Limit	
EM1709106-007	GW22_11/07/17	EP005: Total Organic Carbon	----	1	mg/L	23	28	19.5	0% - 20%	
<b>EP005: Total Organic Carbon (TOC) (QC Lot: 1000200)</b>										
EM1709106-022	GW50_11/07/17	EP005: Total Organic Carbon	----	1	mg/L	64	68	5.90	0% - 20%	
EM1709192-006	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	11	11	0.00	0% - 50%	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 993596)</b>										
EM1709106-001	GW38_11/07/17	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit			
EM1709106-012	GW03_11/07/17	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 993596) - continued</b>										
EM1709106-012	GW03_11/07/17	EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit			
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 993599)</b>										
EM1709106-021	GW40_11/07/17	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit			
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit			
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 996244)</b>										
EM1709106-026	GW54_11/07/17	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit			



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 996244) - continued</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 993596)</b>									
EM1709106-001	GW38_11/07/17	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit
EM1709106-012	GW03_11/07/17	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 993599)</b>									
EM1709106-021	GW40_11/07/17	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 996244)</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 993596)</b>									
EM1709106-001	GW38_11/07/17	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
EM1709106-012	GW03_11/07/17	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 993599)</b>									
EM1709106-021	GW40_11/07/17	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 996244)</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
<b>EP074D: Fumigants (QC Lot: 993596)</b>									
EM1709106-001	GW38_11/07/17	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074D: Fumigants (QC Lot: 993596) - continued</b>									
EM1709106-001	GW38_11/07/17	EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
EM1709106-012	GW03_11/07/17	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
<b>EP074D: Fumigants (QC Lot: 993599)</b>									
EM1709106-021	GW40_11/07/17	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
<b>EP074D: Fumigants (QC Lot: 996244)</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 993596)</b>									
EM1709106-001	GW38_11/07/17	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 993596) - continued</b>									
EM1709106-001	GW38_11/07/17	EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit
EM1709106-012	GW03_11/07/17	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit

EP074E: Halogenated Aliphatic Compounds (QC Lot: 993599)





Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 993599) - continued</b>									
EM1709106-021	GW40_11/07/17	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit		
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit		
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit		
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 996244)</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 996244) - continued</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit		
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<5	<5	0.00	No Limit		
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 993596)</b>									
EM1709106-001	GW38_11/07/17	EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
		EM1709106-012	GW03_11/07/17	EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0
EP074-WF: Chlorobenzene	108-90-7			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: Bromobenzene	108-86-1			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 2-Chlorotoluene	95-49-8			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 4-Chlorotoluene	106-43-4			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 1,3-Dichlorobenzene	541-73-1			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 1,2-Dichlorobenzene	95-50-1			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6			1	µg/L	<1	<1	0.00	No Limit
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 993599)</b>									
EM1709106-021	GW40_11/07/17	EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 993599) - continued</b>									
EM1709106-021	GW40_11/07/17	EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 996244)</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: 1.4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 993596)</b>									
EM1709106-001	GW38_11/07/17	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
EM1709106-012	GW03_11/07/17	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 993599)</b>									
EM1709106-021	GW40_11/07/17	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 996244)</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
<b>EP074H: Naphthalene (QC Lot: 993596)</b>									
EM1709106-001	GW38_11/07/17	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EP074H: Naphthalene (QC Lot: 993596) - continued</b>										
EM1709106-012	GW03_11/07/17	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
<b>EP074H: Naphthalene (QC Lot: 993599)</b>										
EM1709106-021	GW40_11/07/17	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
<b>EP074H: Naphthalene (QC Lot: 996244)</b>										
EM1709106-026	GW54_11/07/17	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 996507)</b>										
EM1709210-005	Anonymous	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	1	µg/L	<1.0	<1.0	0.00	No Limit	
			205-82-3							
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.00	No Limit	
EP075(SIM): Dibenzo(a,h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.00	No Limit			
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.00	No Limit			
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 993595)</b>										
EM1709106-001	GW38_11/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit	
EM1709106-012	GW03_11/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 993598)</b>										
EM1709106-021	GW40_11/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 996243)</b>										
EM1709106-026	GW54_11/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 996508)</b>										
EM1709210-005	Anonymous	EP071: C15 - C28 Fraction	----	100	µg/L	<100	<100	0.00	No Limit	
		EP071: C10 - C14 Fraction	----	50	µg/L	<50	<50	0.00	No Limit	
		EP071: C29 - C36 Fraction	----	50	µg/L	<50	<50	0.00	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 993595)</b>										
EM1709106-001	GW38_11/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
EM1709106-012	GW03_11/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 993598)</b>										





Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 993598) - continued</b>										
EM1709106-021	GW40_11/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 996243)</b>										
EM1709106-026	GW54_11/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 996508)</b>										
EM1709210-005	Anonymous	EP071: >C10 - C16 Fraction	----	100	µg/L	<100	<100	0.00	No Limit	
		EP071: >C16 - C34 Fraction	----	100	µg/L	<100	<100	0.00	No Limit	
		EP071: >C34 - C40 Fraction	----	100	µg/L	<100	<100	0.00	No Limit	
<b>EP080: BTEXN (QC Lot: 993595)</b>										
EM1709106-001	GW38_11/07/17	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit	
EM1709106-012	GW03_11/07/17	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit	
EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit			
<b>EP080: BTEXN (QC Lot: 993598)</b>										
EM1709106-021	GW40_11/07/17	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit	
EM1709106-026	GW54_11/07/17	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit	
EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit			
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 996762)</b>										



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 996762) - continued</b>									
EB1714168-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.24	0.24	0.00	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
ES1717106-006	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 996762)</b>									
EB1714168-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.14	0.14	0.00	0% - 50%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.04	0.04	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.03	0.03	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		ES1717106-006	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3			0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4			0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9			0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluorononanoic acid (PFNA)	375-95-1			0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2			0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8			0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1			0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8			0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7			0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4			0.1	µg/L	<0.1	<0.1	0.00	No Limit
<b>EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 996762)</b>									
EB1714168-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	0.04	0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit





Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 996762) - continued</b>									
EB1714168-001	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
ES1717106-006	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 996762)</b>									
EB1714168-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
ES1717106-006	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231P: PFAS Sums (QC Lot: 996762)</b>									

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 Work Order : EM1709106  
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 Project : 60537182



Sub-Matrix: **WATER**

				<i>Laboratory Duplicate (DUP) Report</i>					
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>LOR</i>	<i>Unit</i>	<i>Original Result</i>	<i>Duplicate Result</i>	<i>RPD (%)</i>	<i>Recovery Limits (%)</i>
<b>EP231P: PFAS Sums (QC Lot: 996762) - continued</b>									
EB1714168-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.49	0.50	2.02	0% - 20%
ES1717106-006	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit





### Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 993900)</b>									
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	100	95	105	
				<10	293 mg/L	96.9	95	105	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 993905)</b>									
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	101	95	105	
				<10	293 mg/L	105	95	105	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 996492)</b>									
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	101	95	105	
				<10	293 mg/L	97.6	95	105	
<b>ED037P: Alkalinity by PC Titrator (QCLot: 994066)</b>									
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	90.6	88	109	
<b>ED037P: Alkalinity by PC Titrator (QCLot: 994072)</b>									
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	97.6	88	109	
<b>ED037P: Alkalinity by PC Titrator (QCLot: 999215)</b>									
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	95.6	88	109	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 993991)</b>									
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	109	92	115	
				<1	100 mg/L	104	92	115	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 993995)</b>									
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	109	92	115	
				<1	100 mg/L	105	92	115	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 996588)</b>									
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	111	92	115	
				<1	100 mg/L	103	92	115	
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 996723)</b>									
ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	<1	500 mg/L	113	82	122	
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 996724)</b>									
ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	<1	500 mg/L	122	82	122	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 993992)</b>									
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	108	88	118	
				<1	1000 mg/L	106	88	118	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 993996)</b>									
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	109	88	118	
				<1	1000 mg/L	106	88	118	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
					LCS	Low	High		
<b>ED045G: Chloride by Discrete Analyser (QCLot: 996587)</b>									
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	113	88	118	
				<1	1000 mg/L	103	88	118	
<b>ED093F: Dissolved Major Cations (QCLot: 994606)</b>									
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	109	93	110	
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	108	91	110	
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	102	90	109	
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	102	89	109	
<b>ED093F: Dissolved Major Cations (QCLot: 996717)</b>									
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	103	93	110	
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	103	91	110	
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	107	90	109	
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	106	89	109	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 994604)</b>									
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	101	93	105	
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	97.7	91	107	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	102	84	104	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	96.3	83	103	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	94.2	82	103	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	98.0	83	105	
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	98.0	83	105	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.7	82	106	
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	96.8	82	109	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	97.0	85	109	
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	98.1	94	106	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 996715)</b>									
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	98.0	93	105	
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	96.3	91	107	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	92.9	84	104	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	90.8	83	103	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	93.3	82	103	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	92.2	83	105	
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	91.8	83	105	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	93.9	82	106	
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	91.8	82	109	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	97.1	85	109	
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	99.5	94	106	
<b>EG020T: Total Metals by ICP-MS (QCLot: 994613)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	106	80	120	





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EG020T: Total Metals by ICP-MS (QCLot: 994613) - continued</b>									
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	102	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.3	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	98.9	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	97.4	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	101	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	101	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	101	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	101	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	100	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	101	80	120	
<b>EG020T: Total Metals by ICP-MS (QCLot: 994614)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	102	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	102	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.4	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	102	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	101	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	101	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	103	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	106	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	102	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	99.7	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	104	80	120	
<b>EG020T: Total Metals by ICP-MS (QCLot: 996704)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	99.4	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	101	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	98.3	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	95.7	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	97.8	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	100	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	100	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	96.4	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	94.8	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	99.2	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	99.1	80	120	
<b>EG020T: Total Metals by ICP-MS (QCLot: 997181)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	96.2	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	104	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	92.4	86	111	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
<b>EG020T: Total Metals by ICP-MS (QCLot: 997181) - continued</b>								
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	102	87	109
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	99.1	87	108
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	95.2	88	109
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	99.9	88	111
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	98.6	87	111
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	94.0	85	113
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	100	87	113
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	108	80	120
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 994605)</b>								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	87.4	81	114
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 996716)</b>								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	94.4	81	114
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 996941)</b>								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	84.7	81	114
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 996942)</b>								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	85.4	81	114
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 999799)</b>								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	93.7	81	114
<b>EK040P: Fluoride by PC Titrator (QCLot: 994065)</b>								
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	107	85	112
<b>EK040P: Fluoride by PC Titrator (QCLot: 994071)</b>								
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	108	85	112
<b>EK040P: Fluoride by PC Titrator (QCLot: 999216)</b>								
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	92.4	85	112
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 994091)</b>								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	102	80	115
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 994094)</b>								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	95.2	80	115
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 996684)</b>								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	105	80	115
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 993990)</b>								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	95.8	94	107
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 993994)</b>								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	105	94	107
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 996586)</b>								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	102	94	107





Sub-Matrix: WATER

Method Blank (MB) Report				Laboratory Control Spike (LCS) Report				
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit		Result	LCS	Low	High
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 994093)</b>								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	110	89	114
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 996683)</b>								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	109	89	114
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 993993)</b>								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	102	94	108
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 996585)</b>								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	104	94	108
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1000199)</b>								
EP005: Total Organic Carbon	----	1	mg/L	<1	100 mg/L	92.9	81	109
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1000200)</b>								
EP005: Total Organic Carbon	----	1	mg/L	<1	100 mg/L	94.0	81	109
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 993596)</b>								
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	98.7	81	119
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	97.4	84	117
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	97.1	83	114
EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	40 µg/L	96.4	81	116
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	101	82	118
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	98.9	85	115
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	95.8	81	113
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	93.9	76	111
EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	92.8	79	109
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	93.6	77	111
EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	91.6	79	108
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	95.6	80	110
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	90.0	75	111
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	86.2	68	111
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 993599)</b>								
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	92.0	81	119
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	92.5	84	117
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	90.6	83	114
EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	40 µg/L	90.0	81	116
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	95.5	82	118
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	93.5	85	115
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	89.5	81	113
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	88.1	76	111
EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	87.4	79	109



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 993599) - continued</b>									
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	87.2	77	111	
EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	87.1	79	108	
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	89.8	80	110	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	85.9	75	111	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	81.4	68	111	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 996244)</b>									
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	98.5	81	119	
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	99.6	84	117	
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	98.5	83	114	
EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	40 µg/L	97.9	81	116	
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	100	82	118	
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	99.6	85	115	
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	99.1	81	113	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	94.7	76	111	
EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	94.1	79	109	
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	96.9	77	111	
EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	92.3	79	108	
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	95.6	80	110	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	93.4	75	111	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	89.2	68	111	
<b>EP074B: Oxygenated Compounds (QCLot: 993596)</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	78.8	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	101	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	97.3	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	113	73	128	
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	101	75	129	
<b>EP074B: Oxygenated Compounds (QCLot: 993599)</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	80.3	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	93.8	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	96.2	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	109	73	128	
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	99.7	75	129	
<b>EP074B: Oxygenated Compounds (QCLot: 996244)</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	108	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	92.6	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	105	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	101	73	128	





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP074B: Oxygenated Compounds (QCLot: 996244) - continued</b>									
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	105	75	129	
<b>EP074C: Sulfonated Compounds (QCLot: 993596)</b>									
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	92.5	64	119	
<b>EP074C: Sulfonated Compounds (QCLot: 993599)</b>									
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	82.4	64	119	
<b>EP074C: Sulfonated Compounds (QCLot: 996244)</b>									
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	91.9	64	119	
<b>EP074D: Fumigants (QCLot: 993596)</b>									
EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	94.5	74	117	
EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	98.3	83	118	
EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	96.0	74	109	
EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	98.6	70	109	
EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	97.6	81	116	
<b>EP074D: Fumigants (QCLot: 993599)</b>									
EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	82.6	74	117	
EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	93.2	83	118	
EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	89.4	74	109	
EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	92.5	70	109	
EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	96.7	81	116	
<b>EP074D: Fumigants (QCLot: 996244)</b>									
EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	94.2	74	117	
EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	96.7	83	118	
EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	90.2	74	109	
EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	89.7	70	109	
EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	97.2	81	116	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 993596)</b>									
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	105	61	137	
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	106	66	137	
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	99.4	67	135	
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	93.8	52	128	
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	88.8	76	125	
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	95.6	74	123	
EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	94.9	75	120	
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	67.5	37	120	
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	20 µg/L	118	72	159	
EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	94.7	78	117	
EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	97.0	81	118	
EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	96.5	83	118	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike	Spike Recovery (%)	Recovery Limits (%)	
					Concentration	LCS	Low	High
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 993596) - continued</b>								
EP074-WF: 1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	94.9	76	115
EP074-WF: 1.1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	94.4	75	117
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	90.2	72	111
EP074-WF: 1.2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	101	81	120
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	87.4	78	116
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	99.5	79	116
EP074-WF: 1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	98.3	85	119
EP074-WF: 1.3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	102	85	119
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	92.1	76	120
EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	93.1	78	110
EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	114	64	118
EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	102	51	113
EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	104	85	121
EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	106	84	118
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	89.8	64	109
EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	101	65	115
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	91.0	70	121
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 993599)</b>								
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	86.1	61	137
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	91.4	66	137
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	82.7	67	135
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	78.3	52	128
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	78.7	76	125
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	86.1	74	123
EP074-WF: 1.1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	86.7	75	120
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	61.8	37	120
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	20 µg/L	107	72	159
EP074-WF: trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	87.2	78	117
EP074-WF: 1.1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	89.9	81	118
EP074-WF: cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	90.3	83	118
EP074-WF: 1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	87.6	76	115
EP074-WF: 1.1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	87.3	75	117
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	82.3	72	111
EP074-WF: 1.2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	96.3	81	120
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	80.5	78	116
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	96.5	79	116
EP074-WF: 1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	95.2	85	119
EP074-WF: 1.3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	97.3	85	119
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	87.9	76	120





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike	Spike Recovery (%)	Recovery Limits (%)	
					Concentration	LCS	Low	High
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 993599) - continued</b>								
EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	87.4	78	110
EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	103	64	118
EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	92.5	51	113
EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	98.8	85	121
EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	100	84	118
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	81.3	64	109
EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	97.9	65	115
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	83.6	70	121
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 996244)</b>								
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	98.9	61	137
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	86.1	66	137
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	92.7	67	135
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	74.1	52	128
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	87.8	76	125
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	98.7	74	123
EP074-WF: 1.1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	101	75	120
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	40.8	37	120
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	20 µg/L	110	72	159
EP074-WF: trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	99.6	78	117
EP074-WF: 1.1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	101	81	118
EP074-WF: cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	100	83	118
EP074-WF: 1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	96.6	76	115
EP074-WF: 1.1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	96.5	75	117
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	91.0	72	111
EP074-WF: 1.2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	100	81	120
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	90.2	78	116
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	98.0	79	116
EP074-WF: 1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	99.2	85	119
EP074-WF: 1.3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	100.0	85	119
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	93.0	76	120
EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	92.5	78	110
EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	93.0	64	118
EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	84.2	51	113
EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	101	85	121
EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	103	84	118
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	86.8	64	109
EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	89.5	65	115
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	88.6	70	121
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 993596)</b>								



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	High
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 993596) - continued</b>									
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	99.1	85	115	
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	87.8	82	116	
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	95.5	81	112	
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	94.6	80	110	
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	92.4	80	110	
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	92.9	80	112	
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	97.2	84	111	
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	85.7	70	114	
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	92.0	78	116	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 993599)</b>									
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	93.1	85	115	
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	84.9	82	116	
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	90.6	81	112	
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	89.6	80	110	
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	86.4	80	110	
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	88.8	80	112	
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	91.4	84	111	
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	82.0	70	114	
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	89.0	78	116	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 996244)</b>									
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	99.6	85	115	
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	87.6	82	116	
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	95.3	81	112	
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	94.1	80	110	
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	91.8	80	110	
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	92.3	80	112	
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	94.3	84	111	
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	82.6	70	114	
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	88.9	78	116	
<b>EP074G: Trihalomethanes (QCLot: 993596)</b>									
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	95.3	82	118	
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	95.7	75	112	
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	89.9	73	108	
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	91.8	68	107	
<b>EP074G: Trihalomethanes (QCLot: 993599)</b>									
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	89.8	82	118	
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	89.6	75	112	
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	84.3	73	108	





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP074G: Trihalomethanes (QCLot: 993599) - continued</b>									
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	84.4	68	107	
<b>EP074G: Trihalomethanes (QCLot: 996244)</b>									
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	101	82	118	
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	90.2	75	112	
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	85.7	73	108	
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	82.7	68	107	
<b>EP074H: Naphthalene (QCLot: 993596)</b>									
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	99.3	80	116	
<b>EP074H: Naphthalene (QCLot: 993599)</b>									
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	96.2	80	116	
<b>EP074H: Naphthalene (QCLot: 996244)</b>									
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	95.4	80	116	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 993928)</b>									
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	79.2	39	110	
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	79.0	40	124	
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	82.5	47	117	
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	83.6	51	118	
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	86.9	53	119	
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	63.3	51	113	
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	87.2	59	123	
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	86.4	58	123	
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	78.1	52	126	
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	84.3	55	123	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	84.2	52	131	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	89.5	57	126	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	83.5	56	126	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	89.9	53	123	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	88.8	53	125	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	88.4	53	125	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 993929)</b>									
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	93.4	39	110	
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	91.1	40	124	
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	98.2	47	117	
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	102	51	118	
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	99.9	53	119	
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	68.5	51	113	
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	103	59	123	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 993929) - continued</b>									
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	101	58	123	
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	94.4	52	126	
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	103	55	123	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	98.3	52	131	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	104	57	126	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	94.6	56	126	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	99.5	53	123	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	99.8	53	125	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	103	53	125	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 996507)</b>									
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	82.7	39	110	
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	86.2	40	124	
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	87.9	47	117	
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	89.4	51	118	
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	92.0	53	119	
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	65.8	51	113	
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	94.0	59	123	
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	95.0	58	123	
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	91.4	52	126	
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	98.0	55	123	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	96.4	52	131	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	101	57	126	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	92.2	56	126	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	93.6	53	123	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	93.1	53	125	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	94.8	53	125	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 993595)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	88.5	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 993598)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	86.4	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 993927)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	101	53	123	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	100	57	133	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	90.9	55	141	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 993930)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	89.8	53	123	





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 993930) - continued</b>									
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	91.1	57	133	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	82.7	55	141	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996243)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	95.0	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996508)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	87.8	53	123	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	86.0	57	133	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	77.2	55	141	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 993595)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	87.5	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 993598)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	84.4	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 993927)</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	98.2	54	122	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	93.4	56	132	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	96.5	51	137	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 993930)</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	88.8	54	122	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	85.8	56	132	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	88.3	51	137	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996243)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	94.3	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996508)</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	67.6	54	122	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	80.9	56	132	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	83.5	51	137	
<b>EP080: BTEXN (QCLot: 993595)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	96.8	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	94.8	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	93.4	72	124	
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	91.9	72	130	
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	96.5	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	94.0	71	129	
<b>EP080: BTEXN (QCLot: 993598)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	92.6	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	92.3	76	124	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP080: BTEXN (QCLot: 993598) - continued</b>									
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	91.6	72	124	
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	89.9	72	130	
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	93.4	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	99.2	71	129	
<b>EP080: BTEXN (QCLot: 996243)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	97.1	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	98.3	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	95.3	72	124	
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	94.8	72	130	
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	98.0	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	99.2	71	129	
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 996762)</b>									
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.5 µg/L	82.4	70	130	
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.5 µg/L	91.8	70	130	
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.5 µg/L	103	70	130	
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.5 µg/L	113	70	130	
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.5 µg/L	111	70	130	
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	111	70	130	
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 996762)</b>									
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	2.5 µg/L	92.6	70	130	
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	87.6	70	130	
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	97.2	70	130	
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	101	70	130	
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	111	70	130	
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	116	70	130	
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	113	70	130	
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	114	70	130	
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	113	70	130	
EP231X: Perfluorotridecanoic acid (PFTriDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	127	70	130	
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	132	70	150	
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 996762)</b>									
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	130	70	130	
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	106	70	150	
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	123	70	150	
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	1.25 µg/L	107	70	150	





Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 996762) - continued</b>								
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	111	70	150
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	92.6	70	130
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	102	70	130
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 996762)</b>								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.5 µg/L	98.2	70	130
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.5 µg/L	130	70	130
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.5 µg/L	127	70	130
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.5 µg/L	126	70	130

### Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery(%)	Recovery Limits (%)	
					MS	Low	High
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 993991)</b>							
EM1709099-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	85.3	70	130
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 993995)</b>							
EM1709106-023	GW44_11/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70	130
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 996588)</b>							
EM1709162-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	73.6	70	130
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 996723)</b>							
EM1709106-002	GW33_11/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	500 mg/L	114	70	130
<b>ED045G: Chloride by Discrete Analyser (QCLot: 993992)</b>							
EM1709099-001	Anonymous	ED045G: Chloride	16887-00-6	400 mg/L	97.4	70	130
<b>ED045G: Chloride by Discrete Analyser (QCLot: 993996)</b>							
EM1709106-023	GW44_11/07/17	ED045G: Chloride	16887-00-6	400 mg/L	# Not Determined	70	130
<b>ED045G: Chloride by Discrete Analyser (QCLot: 996587)</b>							
EM1709162-001	Anonymous	ED045G: Chloride	16887-00-6	400 mg/L	85.6	70	130
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 994604)</b>							



Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 994604) - continued</b>							
EM1709106-001	GW38_11/07/17	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	108	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	111	81	133
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	103	71	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	104	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	104	75	133
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	104	64	134
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	104	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	105	75	131
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 996715)</b>							
EM1709106-026	GW54_11/07/17	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	103	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	97.3	81	133
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	96.5	71	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	95.7	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	95.2	75	133
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	80.0	64	134
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	98.5	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	97.0	75	131
<b>EG020T: Total Metals by ICP-MS (QCLot: 994613)</b>							
EM1709106-001	GW38_11/07/17	EG020A-T: Arsenic	7440-38-2	1 mg/L	98.1	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	93.5	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	95.5	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	97.7	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	101	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	96.7	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	102	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	98.7	74	116
<b>EG020T: Total Metals by ICP-MS (QCLot: 994614)</b>							
EM1709106-023	GW44_11/07/17	EG020A-T: Arsenic	7440-38-2	1 mg/L	109	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	92.2	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	98.6	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	101	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	103	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	98.1	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	104	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	96.0	74	116
<b>EG020T: Total Metals by ICP-MS (QCLot: 996704)</b>							
EM1709066-038	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	91.9	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	88.5	75	129





Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EG020T: Total Metals by ICP-MS (QCLot: 996704) - continued</b>							
EM1709066-038	Anonymous	EG020A-T: Chromium	7440-47-3	1 mg/L	89.4	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	88.7	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	93.2	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	90.4	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	89.5	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	88.5	74	116
<b>EG020T: Total Metals by ICP-MS (QCLot: 997181)</b>							
EM1709106-025	QC102_11/07/17	EG020A-T: Arsenic	7440-38-2	1 mg/L	103	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	97.2	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	101	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	101	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	102	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	97.8	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	104	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	102	74	116
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 994605)</b>							
EM1709106-003	GW36_11/07/17	EG035F: Mercury	7439-97-6	0.01 mg/L	87.3	70	120
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 996716)</b>							
EM1709191-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	84.8	70	120
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 996941)</b>							
EM1709099-001	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	85.2	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 996942)</b>							
EM1709106-022	GW50_11/07/17	EG035T: Mercury	7439-97-6	0.01 mg/L	85.8	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 999799)</b>							
EM1709009-002	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	84.4	70	130
<b>EK040P: Fluoride by PC Titrator (QCLot: 994065)</b>							
EM1709088-004	Anonymous	EK040P: Fluoride	16984-48-8	5 mg/L	94.0	70	130
<b>EK040P: Fluoride by PC Titrator (QCLot: 994071)</b>							
EM1709106-012	GW03_11/07/17	EK040P: Fluoride	16984-48-8	5 mg/L	108	70	130
<b>EK040P: Fluoride by PC Titrator (QCLot: 999216)</b>							
EM1709192-001	Anonymous	EK040P: Fluoride	16984-48-8	5 mg/L	95.2	70	130
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 994091)</b>							
EM1709088-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	102	70	130
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 994094)</b>							
EM1709106-015	GW11_11/07/17	EK055G: Ammonia as N	7664-41-7	1 mg/L	118	70	130



Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 996684)</b>							
EM1709162-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	83.2	70	130
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 993990)</b>							
EM1709106-002	GW33_11/07/17	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	96.1	80	114
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 993994)</b>							
EM1709106-012	GW03_11/07/17	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	94.6	80	114
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 996586)</b>							
EM1709161-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	110	80	114
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 994093)</b>							
EM1709106-002	GW33_11/07/17	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	106	70	130
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 993993)</b>							
EM1709106-002	GW33_11/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	102	79	123
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 996585)</b>							
EM1709191-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	102	79	123
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1000199)</b>							
EM1709009-002	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	94.0	80	114
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1000200)</b>							
EM1709106-023	GW44_11/07/17	EP005: Total Organic Carbon	----	100 mg/L	95.0	80	114
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 993596)</b>							
EM1709106-002	GW33_11/07/17	EP074-WF: Benzene	71-43-2	20 µg/L	99.9	76	128
		EP074-WF: Toluene	108-88-3	20 µg/L	98.9	72	132
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 993599)</b>							
EM1709106-022	GW50_11/07/17	EP074-WF: Benzene	71-43-2	20 µg/L	114	76	128
		EP074-WF: Toluene	108-88-3	20 µg/L	115	72	132
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 996244)</b>							
EM1709191-001	Anonymous	EP074-WF: Benzene	71-43-2	20 µg/L	94.5	76	128
		EP074-WF: Toluene	108-88-3	20 µg/L	97.6	72	132
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 993596)</b>							
EM1709106-002	GW33_11/07/17	EP074-WF: 1,1-Dichloroethene	75-35-4	20 µg/L	100	63	129
		EP074-WF: Trichloroethene	79-01-6	20 µg/L	86.0	64	126
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 993599)</b>							
EM1709106-022	GW50_11/07/17	EP074-WF: 1,1-Dichloroethene	75-35-4	20 µg/L	# 122	63	129
		EP074-WF: Trichloroethene	79-01-6	20 µg/L	96.6	64	126
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 996244)</b>							
EM1709191-001	Anonymous	EP074-WF: 1,1-Dichloroethene	75-35-4	20 µg/L	99.0	63	129





Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 996244) - continued</b>							
EM1709191-001	Anonymous	EP074-WF: Trichloroethene	79-01-6	20 µg/L	81.0	64	126
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 993596)</b>							
EM1709106-002	GW33_11/07/17	EP074-WF: Chlorobenzene	108-90-7	20 µg/L	101	81	119
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 993599)</b>							
EM1709106-022	GW50_11/07/17	EP074-WF: Chlorobenzene	108-90-7	20 µg/L	95.7	81	119
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 996244)</b>							
EM1709191-001	Anonymous	EP074-WF: Chlorobenzene	108-90-7	20 µg/L	95.8	81	119
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 996507)</b>							
EM1709210-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	5 µg/L	94.8	42	122
		EP075(SIM): Pyrene	129-00-0	5 µg/L	98.5	40	136
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 993595)</b>							
EM1709106-002	GW33_11/07/17	EP080: C6 - C9 Fraction	----	280 µg/L	75.1	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 993598)</b>							
EM1709106-022	GW50_11/07/17	EP080: C6 - C9 Fraction	----	280 µg/L	83.5	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996243)</b>							
EM1709191-001	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	67.7	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996508)</b>							
EM1709210-003	Anonymous	EP071: C10 - C14 Fraction	----	3368 µg/L	100	50	130
		EP071: C15 - C28 Fraction	----	14735 µg/L	98.9	54	136
		EP071: C29 - C36 Fraction	----	7856 µg/L	89.3	50	142
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 993595)</b>							
EM1709106-002	GW33_11/07/17	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	73.8	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 993598)</b>							
EM1709106-022	GW50_11/07/17	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	79.7	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996243)</b>							
EM1709191-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	67.8	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996508)</b>							
EM1709210-003	Anonymous	EP071: >C10 - C16 Fraction	----	5225 µg/L	97.3	50	128
		EP071: >C16 - C34 Fraction	----	19994 µg/L	93.0	50	150
		EP071: >C34 - C40 Fraction	----	1449 µg/L	96.8	51	159
<b>EP080: BTEXN (QCLot: 993595)</b>							
EM1709106-002	GW33_11/07/17	EP080: Benzene	71-43-2	20 µg/L	98.7	68	130
		EP080: Toluene	108-88-3	20 µg/L	94.4	72	132
<b>EP080: BTEXN (QCLot: 993598)</b>							



Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EP080: BTEXN (QCLot: 993598) - continued</b>							
EM1709106-022	GW50_11/07/17	EP080: Benzene	71-43-2	20 µg/L	113	68	130
		EP080: Toluene	108-88-3	20 µg/L	110	72	132
<b>EP080: BTEXN (QCLot: 996243)</b>							
EM1709191-001	Anonymous	EP080: Benzene	71-43-2	20 µg/L	91.2	68	130
		EP080: Toluene	108-88-3	20 µg/L	92.0	72	132
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 996762)</b>							
EB1714168-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.5 µg/L	102	50	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.5 µg/L	110	50	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.5 µg/L	110	50	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.5 µg/L	118	50	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	119	50	130
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.5 µg/L	125	50	130
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 996762)</b>							
EB1714168-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	91.8	50	130
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	108	50	130
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	106	50	130
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	120	50	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	117	50	130
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	117	50	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	120	50	130
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	128	50	130
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	125	50	130
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	121	50	130
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	108	50	150
		<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 996762)</b>					
EB1714168-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	117	50	130
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	123	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	122	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	1.25 µg/L	117	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	117	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	109	50	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	130	50	130
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 996762)</b>							





Sub-Matrix: **WATER**

				<i>Matrix Spike (MS) Report</i>			
				<i>Spike</i>	<i>SpikeRecovery(%)</i>	<i>Recovery Limits (%)</i>	
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Concentration</i>	<i>MS</i>	<i>Low</i>	<i>High</i>
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 996762) - continued</b>							
EB1714168-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.5 µg/L	121	50	130
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.5 µg/L	117	50	130
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.5 µg/L	109	50	130
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.5 µg/L	120	50	130

## QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM1709106	Page	: 1 of 21
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: MS AVERYLL COYNE	Telephone	: +61-3-8549 9608
Project	: 60537182	Date Samples Received	: 12-Jul-2017
Site	: ----	Issue Date	: 19-Jul-2017
Sampler	: BH, BP, JM	No. of samples received	: 28
Order number	: Task 3.2	No. of samples analysed	: 26

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

### Summary of Outliers

#### Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

#### Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

#### Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



### Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
<b>Matrix Spike (MS) Recoveries</b>							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	EM1709106--023	GW44_11/07/17	Sulfate as SO4 - Turbidimetric	14808-79-8	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
ED045G: Chloride by Discrete Analyser	EM1709106--023	GW44_11/07/17	Chloride	16887-00-6	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EP074E: Halogenated Aliphatic Compounds	EM1709106--022	GW50_11/07/17	1,1-Dichloroethene	75-35-4	122 %	63-129%	Recovery greater than upper control limit

### Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method	Extraction / Preparation			Analysis				
	Container / Client Sample ID(s)	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue	
<b>EA005P: pH by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural</b>	GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	----	----	----	13-Jul-2017	11-Jul-2017	2
<b>Clear Plastic Bottle - Natural</b>	GW54_11/07/17		----	----	----	17-Jul-2017	11-Jul-2017	6

### Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
<b>Laboratory Duplicates (DUP)</b>					
PAH/Phenols (GC/MS - SIM)	1	38	2.63	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatle Fraction	1	58	1.72	10.00	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>					
Nitrite and Nitrate as N (NOx) by Discrete Analyser	1	32	3.13	5.00	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	1	38	2.63	5.00	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	1	21	4.76	5.00	NEPM 2013 B3 & ALS QC Standard





Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Method					
Matrix Spikes (MS) - Continued					
TRH - Semivolatle Fraction	1	58	1.72	5.00	NEPM 2013 B3 & ALS QC Standard

## Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for **VOC in soils** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EA005P: pH by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural (EA005-P)</b>								
GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	11-Jul-2017	*
<b>Clear Plastic Bottle - Natural (EA005-P)</b>								
GW54_11/07/17		11-Jul-2017	----	----	----	17-Jul-2017	11-Jul-2017	*
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>								
<b>Clear Plastic Bottle - Natural (EA015H)</b>								
GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	18-Jul-2017	✓
<b>Clear Plastic Bottle - Natural (EA015H)</b>								
GW54_11/07/17		11-Jul-2017	----	----	----	14-Jul-2017	18-Jul-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>ED037P: Alkalinity by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural (ED037-P)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	25-Jul-2017	✓
<b>Clear Plastic Bottle - Natural (ED037-P)</b> GW54_11/07/17		11-Jul-2017	----	----	----	17-Jul-2017	25-Jul-2017	✓
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>								
<b>Clear Plastic Bottle - Natural (ED041G)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	08-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (ED041G)</b> GW54_11/07/17		11-Jul-2017	----	----	----	14-Jul-2017	08-Aug-2017	✓
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>								
<b>Clear Plastic Bottle - Natural (ED043)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17, GW54_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	14-Jul-2017	08-Aug-2017	✓	14-Jul-2017	08-Aug-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>ED045G: Chloride by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Natural (ED045G)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	08-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (ED045G)</b> GW54_11/07/17		11-Jul-2017	----	----	----	14-Jul-2017	08-Aug-2017	✓
<b>ED093F: Dissolved Major Cations</b>								
<b>Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17, GW54_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	17-Jul-2017	08-Aug-2017	✓
<b>EG020F: Dissolved Metals by ICP-MS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	07-Jan-2018	✓
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)</b> GW54_11/07/17		11-Jul-2017	----	----	----	14-Jul-2017	07-Jan-2018	✓





Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EG020T: Total Metals by ICP-MS</b>							
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, QC202_11/07/17, GW40_11/07/17, GW44_11/07/17, GW54_11/07/17 GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, QC304_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	14-Jul-2017	07-Jan-2018	✓	14-Jul-2017	07-Jan-2018	✓
<b>Clear Plastic Bottle - Nitric Acid; Unspecified (EG020A-T)</b> QC102_11/07/17	11-Jul-2017	17-Jul-2017	07-Jan-2018	✓	17-Jul-2017	07-Jan-2018	✓
<b>EG035F: Dissolved Mercury by FIMS</b>							
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)</b> GW38_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17 GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	11-Jul-2017	----	----	----	14-Jul-2017	08-Aug-2017	✓
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)</b> GW54_11/07/17	11-Jul-2017	----	----	----	17-Jul-2017	08-Aug-2017	✓



Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EG035T: Total Recoverable Mercury by FIMS</b>							
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)</b> GW38_11/07/17, GW37_11/07/17, GW23_11/07/17, QC304_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, QC202_11/07/17, GW40_11/07/17, GW44_11/07/17, GW54_11/07/17	11-Jul-2017	----	----	----	17-Jul-2017	08-Aug-2017	✓
<b>Clear Plastic Bottle - Nitric Acid; Unspecified (EG035T)</b> QC102_11/07/17	11-Jul-2017	----	----	----	17-Jul-2017	08-Aug-2017	✓
<b>EK040P: Fluoride by PC Titrator</b>							
<b>Clear Plastic Bottle - Natural (EK040P)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17, GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	08-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (EK040P)</b> GW54_11/07/17	11-Jul-2017	----	----	----	17-Jul-2017	08-Aug-2017	✓
<b>EK055G: Ammonia as N by Discrete Analyser</b>							
<b>Clear Plastic Bottle - Sulfuric Acid (EK055G)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17, GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	08-Aug-2017	✓
<b>Clear Plastic Bottle - Sulfuric Acid (EK055G)</b> GW54_11/07/17	11-Jul-2017	----	----	----	17-Jul-2017	08-Aug-2017	✓



Matrix: WATER

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EK057G: Nitrite as N by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Natural (EK057G)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17, GW54_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	13-Jul-2017	✓
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Sulfuric Acid (EK059G)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	08-Aug-2017	✓
<b>Clear Plastic Bottle - Sulfuric Acid (EK059G)</b> GW54_11/07/17		11-Jul-2017	----	----	----	14-Jul-2017	08-Aug-2017	✓
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>								
<b>Clear Plastic Bottle - Natural (EK071G)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17, GW54_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	13-Jul-2017	✓





Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP005: Total Organic Carbon (TOC)</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP005)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17, GW54_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17,	11-Jul-2017	----	----	----	17-Jul-2017	08-Aug-2017	✓
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17,	11-Jul-2017	13-Jul-2017	25-Jul-2017	✓	13-Jul-2017	25-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW54_11/07/17		11-Jul-2017	14-Jul-2017	25-Jul-2017	✓	14-Jul-2017	25-Jul-2017	✓
<b>EP074B: Oxygenated Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17,	11-Jul-2017	13-Jul-2017	25-Jul-2017	✓	13-Jul-2017	25-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW54_11/07/17		11-Jul-2017	14-Jul-2017	25-Jul-2017	✓	14-Jul-2017	25-Jul-2017	✓



Matrix: WATER

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP074C: Sulfonated Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	11-Jul-2017	13-Jul-2017	25-Jul-2017	✓	13-Jul-2017	25-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW54_11/07/17		11-Jul-2017	14-Jul-2017	25-Jul-2017	✓	14-Jul-2017	25-Jul-2017	✓
<b>EP074D: Fumigants</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	11-Jul-2017	13-Jul-2017	25-Jul-2017	✓	13-Jul-2017	25-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW54_11/07/17		11-Jul-2017	14-Jul-2017	25-Jul-2017	✓	14-Jul-2017	25-Jul-2017	✓
<b>EP074E: Halogenated Aliphatic Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	11-Jul-2017	13-Jul-2017	25-Jul-2017	✓	13-Jul-2017	25-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW54_11/07/17		11-Jul-2017	14-Jul-2017	25-Jul-2017	✓	14-Jul-2017	25-Jul-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP074F: Halogenated Aromatic Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	11-Jul-2017	13-Jul-2017	25-Jul-2017	✓	13-Jul-2017	25-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW54_11/07/17		11-Jul-2017	14-Jul-2017	25-Jul-2017	✓	14-Jul-2017	25-Jul-2017	✓
<b>EP074G: Trihalomethanes</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	11-Jul-2017	13-Jul-2017	25-Jul-2017	✓	13-Jul-2017	25-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW54_11/07/17		11-Jul-2017	14-Jul-2017	25-Jul-2017	✓	14-Jul-2017	25-Jul-2017	✓
<b>EP074H: Naphthalene</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	11-Jul-2017	13-Jul-2017	25-Jul-2017	✓	13-Jul-2017	25-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW54_11/07/17		11-Jul-2017	14-Jul-2017	25-Jul-2017	✓	14-Jul-2017	25-Jul-2017	✓





Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
<b>Amber Glass Bottle - Unpreserved (EP075(SIM))</b> GW44_11/07/17,	GW49_11/07/17	11-Jul-2017	13-Jul-2017	18-Jul-2017	✓	17-Jul-2017	22-Aug-2017	✓
<b>Amber Glass Bottle - Unpreserved (EP075(SIM))</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17	11-Jul-2017	17-Jul-2017	18-Jul-2017	✓	18-Jul-2017	26-Aug-2017	✓
<b>Amber Glass Bottle - Unpreserved (EP075(SIM))</b> GW54_11/07/17		11-Jul-2017	18-Jul-2017	18-Jul-2017	✓	19-Jul-2017	27-Aug-2017	✓



Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW44_11/07/17, QC102_11/07/17	GW49_11/07/17,	11-Jul-2017	13-Jul-2017	18-Jul-2017	✓	17-Jul-2017	22-Aug-2017	✓
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, QC202_11/07/17, GW40_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, QC304_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW39_11/07/17, GW50_11/07/17	11-Jul-2017	17-Jul-2017	18-Jul-2017	✓	18-Jul-2017	26-Aug-2017	✓
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW54_11/07/17		11-Jul-2017	18-Jul-2017	18-Jul-2017	✓	19-Jul-2017	27-Aug-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, QC205_11/07/17, QC206_11/07/17, GW40_11/07/17, GW44_11/07/17, QC102_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, QC304_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, QC202_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17,	11-Jul-2017	13-Jul-2017	25-Jul-2017	✓	13-Jul-2017	25-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW54_11/07/17		11-Jul-2017	14-Jul-2017	25-Jul-2017	✓	14-Jul-2017	25-Jul-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>								
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW44_11/07/17, QC102_11/07/17	GW49_11/07/17,	11-Jul-2017	13-Jul-2017	18-Jul-2017	✓	17-Jul-2017	22-Aug-2017	✓
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, QC202_11/07/17, GW40_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, QC304_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW39_11/07/17, GW50_11/07/17	11-Jul-2017	17-Jul-2017	18-Jul-2017	✓	18-Jul-2017	26-Aug-2017	✓
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW54_11/07/17		11-Jul-2017	18-Jul-2017	18-Jul-2017	✓	19-Jul-2017	27-Aug-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, QC205_11/07/17, QC206_11/07/17, GW40_11/07/17, GW44_11/07/17, QC102_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, QC304_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, QC202_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17,	11-Jul-2017	13-Jul-2017	25-Jul-2017	✓	13-Jul-2017	25-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW54_11/07/17		11-Jul-2017	14-Jul-2017	25-Jul-2017	✓	14-Jul-2017	25-Jul-2017	✓





Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080: BTEXN</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, QC205_11/07/17, QC206_11/07/17, GW40_11/07/17, GW44_11/07/17, QC102_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, QC304_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, QC202_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17,	11-Jul-2017	13-Jul-2017	25-Jul-2017	✓	13-Jul-2017	25-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW54_11/07/17		11-Jul-2017	14-Jul-2017	25-Jul-2017	✓	14-Jul-2017	25-Jul-2017	✓
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW38_11/07/17, GW49_11/07/17	GW04_11/07/17,	11-Jul-2017	----	----	----	18-Jul-2017	07-Jan-2018	✓
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW38_11/07/17, GW49_11/07/17	GW04_11/07/17,	11-Jul-2017	----	----	----	18-Jul-2017	07-Jan-2018	✓
<b>EP231C: Perfluoroalkyl Sulfonamides</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW38_11/07/17, GW49_11/07/17	GW04_11/07/17,	11-Jul-2017	----	----	----	18-Jul-2017	07-Jan-2018	✓
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW38_11/07/17, GW49_11/07/17	GW04_11/07/17,	11-Jul-2017	----	----	----	18-Jul-2017	07-Jan-2018	✓
<b>EP231P: PFAS Sums</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW38_11/07/17, GW49_11/07/17	GW04_11/07/17,	11-Jul-2017	----	----	----	18-Jul-2017	07-Jan-2018	✓



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Laboratory Duplicates (DUP)</b>							
Alkalinity by PC Titrator	ED037-P	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	5	39	12.82	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	6	55	10.91	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	4	32	12.50	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	6	52	11.54	10.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	38	2.63	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	19	10.53	10.00	✔	NEPM 2013 B3 & ALS QC Standard
pH by PC Titrator	EA005-P	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	5	42	11.90	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	8	73	10.96	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	3	21	14.29	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	58	1.72	10.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	27	14.81	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	4	21	19.05	10.00	✔	NEPM 2013 B3 & ALS QC Standard
<b>Laboratory Control Samples (LCS)</b>							
Alkalinity by PC Titrator	ED037-P	3	60	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	3	39	7.69	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	6	55	10.91	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	3	60	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	32	6.25	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	3	52	5.77	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	3	38	7.89	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard



Matrix: **WATER** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Control Samples (LCS) - Continued</b>							
Total Dissolved Solids (High Level)	EA015H	6	60	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	42	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	4	73	5.48	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	2	21	9.52	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	58	5.17	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	27	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	3	21	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
<b>Method Blanks (MB)</b>							
Ammonia as N by Discrete analyser	EK055G	3	39	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	3	55	5.45	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	3	60	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	32	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	3	52	5.77	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	3	38	7.89	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	3	60	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	3	60	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	42	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	4	73	5.48	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	2	21	9.52	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	58	5.17	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	27	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	3	21	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>							
Ammonia as N by Discrete analyser	EK055G	3	39	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	3	55	5.45	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	3	60	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	32	3.13	5.00	*	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	3	52	5.77	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	38	2.63	5.00	*	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard





Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Matrix Spikes (MS) - Continued</b>							
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	3	60	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	42	7.14	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	4	73	5.48	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	1	21	4.76	5.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	58	1.72	5.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	27	11.11	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	3	21	14.29	5.00	✔	NEPM 2013 B3 & ALS QC Standard



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by PC Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of 'filterable' residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM (2013) Schedule B(3)
Alkalinity by PC Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM (2013) Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Oxidised Sulfur as SO4 2-	ED043	WATER	In house: The sample is treated with Peroxide to convert all Sulfur species to Sulfate. Sulfate in the sample can then be determined by ICPAES and reported as TOS as SO4 2-.
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm APHA 21st edition seal method 2 017-1-L april 2003
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM (2013) Schedule B(3)  Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM (2013) Schedule B(3)  Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM (2013) Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.



Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Fluoride by PC Titrator	EK040P	WATER	In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3)
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO <sub>2</sub> - B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO <sub>3</sub> - F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined separately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite and Nitrate as N (NO <sub>x</sub> ) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO <sub>3</sub> - F. Combined oxidised Nitrogen (NO <sub>2</sub> +NO <sub>3</sub> ) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with orthophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM (2013) Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Volatile Organic Compounds WF Detection Limits	EP074-WF	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)





<i>Analytical Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with methanol. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers.
<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Total Oxidisable Sulfur as SO4 2- Prep	ED043-PR	WATER	In house
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (2013) Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.



SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1709106

Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: MS AVERYLL COYNE	Contact	: Carol Walsh
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: averyll.coyne@aecom.com	E-mail	: carol.walsh@alsglobal.com
Telephone	: +61 03 9653 1234	Telephone	: +61-3-8549 9608
Facsimile	: +61 03 9654 7117	Facsimile	: +61-3-8549 9601
Project	: 60537182	Page	: 1 of 4
Order number	: ----	Quote number	: EM2016AECOMAU0012 (ME/199/16)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: BH, BP, JM		

Dates

Date Samples Received	: 12-Jul-2017 09:50	Issue Date	: 13-Jul-2017
Client Requested Due Date	: 19-Jul-2017	Scheduled Reporting Date	: <b>19-Jul-2017</b>

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 5	Temperature	: 1.1°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 28 / 26

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Additional analysis instruction was received by ALS on 13/07/2017 at 12:55 PM.**
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.
- **Analytical work for this work order will be conducted at ALS Springvale & ALS Sydney.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



## Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exists.

## Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EG020F Dissolved Metals by ICPMS	WATER - EK055G Ammonia as N By Discrete Analyser	WATER - EP231X PFAS - Full Suite (28 analytes)	WATER - NT-01 & 02A Ca, Mg, Na, K, Cl, SO4, Alkalinity & Fluoride	WATER - NT-04 Nitrite and Nitrate	WATER - W-02T 8 metals (Total)	WATER - W-26 TRH/BTEXN/PAH/8 Metals
EM1709106-001	11-Jul-2017 00:00	GW38_11/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709106-002	11-Jul-2017 00:00	GW33_11/07/17	✓	✓		✓	✓		
EM1709106-003	11-Jul-2017 00:00	GW36_11/07/17	✓	✓		✓	✓	✓	✓
EM1709106-004	11-Jul-2017 00:00	GW37_11/07/17	✓	✓		✓	✓	✓	✓
EM1709106-005	11-Jul-2017 00:00	GW28_11/07/17	✓	✓		✓	✓	✓	✓
EM1709106-006	11-Jul-2017 00:00	GW23_11/07/17	✓	✓		✓	✓	✓	✓
EM1709106-007	11-Jul-2017 00:00	GW22_11/07/17	✓	✓		✓	✓	✓	✓
EM1709106-009	11-Jul-2017 00:00	GW29_11/07/17	✓	✓		✓	✓	✓	✓
EM1709106-010	11-Jul-2017 00:00	GW05_11/07/17	✓	✓		✓	✓	✓	✓
EM1709106-011	11-Jul-2017 00:00	GW09_11/07/17	✓	✓		✓	✓	✓	✓
EM1709106-012	11-Jul-2017 00:00	GW03_11/07/17	✓	✓		✓	✓	✓	✓
EM1709106-013	11-Jul-2017 00:00	GW04_11/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709106-014	11-Jul-2017 00:00	QC203_11/07/17	✓	✓		✓	✓	✓	✓
EM1709106-015	11-Jul-2017 00:00	GW11_11/07/17	✓	✓		✓	✓	✓	✓
EM1709106-016	11-Jul-2017 00:00	GW06_11/07/17	✓	✓		✓	✓	✓	✓
EM1709106-020	11-Jul-2017 00:00	GW39_11/07/17	✓	✓		✓	✓	✓	✓
EM1709106-021	11-Jul-2017 00:00	GW40_11/07/17	✓	✓		✓	✓	✓	✓
EM1709106-022	11-Jul-2017 00:00	GW50_11/07/17	✓	✓		✓	✓	✓	✓
EM1709106-023	11-Jul-2017 00:00	GW44_11/07/17	✓	✓		✓	✓	✓	✓
EM1709106-024	11-Jul-2017 00:00	GW49_11/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709106-026	11-Jul-2017 00:00	GW54_11/07/17	✓	✓		✓	✓	✓	✓





Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EA005P pH (PC)	WATER - EA015H Total Dissolved Solids - High Level	WATER - ED043 Total Oxidised Sulfur as SO4 2-	WATER - EG020T Total Recoverable Metals by ICPMS (including	WATER - EK071G Reactive Phosphorus by Discrete analyser	WATER - EP005 Total Organic Carbon (TOC)	WATER - EP074-WF Full VOCs with WF DL incl DCM & Acetone
EM1709106-001	11-Jul-2017 00:00	GW38_11/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709106-002	11-Jul-2017 00:00	GW33_11/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709106-003	11-Jul-2017 00:00	GW36_11/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709106-004	11-Jul-2017 00:00	GW37_11/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709106-005	11-Jul-2017 00:00	GW28_11/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709106-006	11-Jul-2017 00:00	GW23_11/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709106-007	11-Jul-2017 00:00	GW22_11/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709106-008	11-Jul-2017 00:00	QC304_11/07/17				✓			
EM1709106-009	11-Jul-2017 00:00	GW29_11/07/17	✓	✓	✓	✓	✓	✓	
EM1709106-010	11-Jul-2017 00:00	GW05_11/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709106-011	11-Jul-2017 00:00	GW09_11/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709106-012	11-Jul-2017 00:00	GW03_11/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709106-013	11-Jul-2017 00:00	GW04_11/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709106-014	11-Jul-2017 00:00	QC203_11/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709106-015	11-Jul-2017 00:00	GW11_11/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709106-016	11-Jul-2017 00:00	GW06_11/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709106-018	11-Jul-2017 00:00	QC202_11/07/17				✓			
EM1709106-020	11-Jul-2017 00:00	GW39_11/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709106-021	11-Jul-2017 00:00	GW40_11/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709106-022	11-Jul-2017 00:00	GW50_11/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709106-023	11-Jul-2017 00:00	GW44_11/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709106-024	11-Jul-2017 00:00	GW49_11/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709106-026	11-Jul-2017 00:00	GW54_11/07/17	✓	✓	✓	✓	✓	✓	✓

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) WATER No analysis requested	WATER - W-04 TRH/BTEXN	WATER - W-05T TRH/BTEXN/8 Metals (Total)	WATER - W-07 TRH/BTEXN/PAH	WATER - W-18 TRH(C6 - C9)/BTEXN
EM1709106-002	11-Jul-2017 00:00	GW33_11/07/17				✓	
EM1709106-008	11-Jul-2017 00:00	QC304_11/07/17			✓		
EM1709106-017	11-Jul-2017 00:00	QC205_11/07/17					✓
EM1709106-018	11-Jul-2017 00:00	QC202_11/07/17			✓		
EM1709106-019	11-Jul-2017 00:00	QC206_11/07/17					✓
EM1709106-025	11-Jul-2017 00:00	QC102_11/07/17		✓			
EM1709106-027	11-Jul-2017 00:00	QC305_11/07/17	✓				



## CERTIFICATE OF ANALYSIS

<b>Work Order</b> : <b>EM1709106</b> <b>Amendment</b> : <b>1</b> <b>Client</b> : <b>AECOM Australia Pty Ltd</b> <b>Contact</b> : <b>MS AVERYLL COYNE</b> <b>Address</b> : <b>COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004</b> <b>Telephone</b> : <b>+61 03 9653 1234</b> <b>Project</b> : <b>60537182</b> <b>Order number</b> : <b>Task 3.2</b> <b>C-O-C number</b> : <b>----</b> <b>Sampler</b> : <b>BH, BP, JM</b> <b>Site</b> : <b>----</b> <b>Quote number</b> : <b>ME/199/16</b> <b>No. of samples received</b> : <b>28</b> <b>No. of samples analysed</b> : <b>26</b>	<b>Page</b> : 1 of 45  <b>Laboratory</b> : Environmental Division Melbourne <b>Contact</b> : Carol Walsh <b>Address</b> : 4 Westall Rd Springvale VIC Australia 3171  <b>Telephone</b> : +61-3-8549 9608 <b>Date Samples Received</b> : 12-Jul-2017 09:50 <b>Date Analysis Commenced</b> : 13-Jul-2017 <b>Issue Date</b> : 03-Aug-2017 12:48
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Accreditation No. 825  
Accredited for compliance with  
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

**Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.**

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Chris Lemaitre	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	Senior Semivolatile Instrument Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC





## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
LOR = Limit of reporting  
^ = This result is computed from individual analyte detections at or above the level of reporting  
ø = ALS is not NATA accredited for these tests.  
~ = Indicates an estimated value.

- TDS by method EA-015 for EM1709106 #7,24 may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- EP074-WF: Minor VOC hits have been confirmed by re-analysis.
- EP074-WF: Minor Carbon disulfide hit confirmed by re-analysis.
- It is recognised that Nitrite +Nitrate as N is less than Nitrite as N for sample #3. However, the difference is within experimental variation of the methods.
- It is recognised that total metals are less than dissolved metals for samples #4 and #16. However, the difference is within experimental variation of the methods.
- ED041G: Samples EM1709106-002 and 010 have been diluted prior to analysis due to sample matrix and LORs have been raised accordingly.
- Amendment (2/8/17): This report has been amended and re-released to allow the reporting of additional analytical data.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- Ionic balances were calculated using: major anions - chloride, alkalinity, sulfate; and major cations - calcium, magnesium, potassium, sodium and iron for #24.
- ED045G: The presence of thiocyanate can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- EG020T: EM1709106-026 required dilution prior to Total Metal analysis. LOR values have been raised accordingly.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW38_11/07/17	GW33_11/07/17	GW36_11/07/17	GW37_11/07/17	GW28_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-001	EM1709106-002	EM1709106-003	EM1709106-004	EM1709106-005	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	8.12	6.70	6.88	7.65	7.94	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	3530	1600	797	739	1420	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	900	828	370	586	819	
Total Alkalinity as CaCO3	----	1	mg/L	900	828	370	586	819	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	971	<5	38	95	225	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	1690	12	57	132	415	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	860	539	169	21	160	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	9	205	70	25	61	
Magnesium	7439-95-4	1	mg/L	32	98	29	37	46	
Sodium	7440-23-5	1	mg/L	1260	224	128	204	444	
Potassium	7440-09-7	1	mg/L	25	29	20	31	33	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.02	0.02	0.04	0.01	0.02	
Arsenic	7440-38-2	0.001	mg/L	0.003	----	0.011	0.001	<0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	----	0.002	<0.001	0.002	
Copper	7440-50-8	0.001	mg/L	0.001	----	<0.001	<0.001	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	----	<0.001	<0.001	<0.001	
Manganese	7439-96-5	0.001	mg/L	0.059	0.566	0.417	0.314	0.166	
Nickel	7440-02-0	0.001	mg/L	0.017	----	0.020	0.012	0.016	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Zinc	7440-66-6	0.005	mg/L	0.108	----	0.171	0.235	0.008	
Iron	7439-89-6	0.05	mg/L	<0.05	27.4	10.4	<0.05	0.61	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	20.9	3.36	2.20	0.66	3.23	
Arsenic	7440-38-2	0.001	mg/L	0.011	----	0.018	0.004	0.002	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW38_11/07/17	GW33_11/07/17	GW36_11/07/17	GW37_11/07/17	GW28_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-001	EM1709106-002	EM1709106-003	EM1709106-004	EM1709106-005	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	0.0002	----	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.092	----	0.008	0.002	0.008	
Copper	7440-50-8	0.001	mg/L	0.035	----	0.007	0.002	0.003	
Nickel	7440-02-0	0.001	mg/L	0.128	----	0.021	0.011	0.020	
Lead	7439-92-1	0.001	mg/L	0.065	----	0.004	<0.001	0.002	
Zinc	7440-66-6	0.005	mg/L	0.248	----	0.223	0.202	0.026	
Manganese	7439-96-5	0.001	mg/L	0.537	0.622	0.441	0.319	0.188	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	38.2	38.3	17.6	0.89	2.93	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	<0.0001	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	1.7	0.2	0.9	1.0	1.5	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	0.02	7.86	2.83	0.48	8.20	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	0.01	<0.01	0.01	0.03	<0.01	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	2.17	0.02	<0.01	0.10	<0.01	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	2.18	0.02	<0.01	0.13	<0.01	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.37	0.03	<0.01	<0.01	0.85	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	62.4	31.7	13.0	14.3	25.6	
Total Cations	----	0.01	meq/L	58.5	28.8	12.0	14.0	27.0	
Ionic Balance	----	0.01	%	3.25	4.90	3.98	1.13	2.71	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	9	9	30	4	28	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW38_11/07/17	GW33_11/07/17	GW36_11/07/17	GW37_11/07/17	GW28_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-001	EM1709106-002	EM1709106-003	EM1709106-004	EM1709106-005	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	<1	<1	<1	<1	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	<1	<1	<1	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	<1	<1	<1	
Styrene	100-42-5	1	µg/L	<1	<1	<1	<1	<1	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	<1	<1	<1	
Isopropylbenzene	98-82-8	1	µg/L	<1	<1	<1	<1	<1	
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	<1	<1	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	<1	<1	<1	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	<1	<1	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	<1	<1	<1	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	<1	<1	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	<1	<1	<1	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	<10	<10	<10	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	<10	<10	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	<10	<10	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	<10	<10	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	<10	<10	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	1	<1	<1	1	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	<10	<10	<10	
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	<10	
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	<10.0	<10.0	<10.0	
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	<10	
Chloroethane	75-00-3	10	µg/L	<10	<10	<10	<10	<10	
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	<10	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW38_11/07/17	GW33_11/07/17	GW36_11/07/17	GW37_11/07/17	GW28_11/07/17
Client sampling date / time					11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709106-001	EM1709106-002	EM1709106-003	EM1709106-004	EM1709106-005	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	<1	
Iodomethane	74-88-4	1	µg/L	<1	<1	<1	<1	<1	
Methylene chloride	75-09-2	4	µg/L	<4	<4	----	<4	<4	
Methylene chloride	75-09-2	5	µg/L	----	----	<5	----	----	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	<1	<1	<1	
1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	<1	<1	<1	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	<1	<1	<1	
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	<1	
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	<1	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	<1	
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	<1	
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	<1	
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	<1	
1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	<1	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	<1	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	<1	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	<1	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	<1	<1	<1	
1,1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	<1	
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	<1	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	<1	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	<1	<1	<1	<1	
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	<1	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	<1	<1	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	<1	
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	<1	<1	<1	
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	<1	<1	<1	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	<1	<1	<1	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	<1	<1	<1	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW38_11/07/17	GW33_11/07/17	GW36_11/07/17	GW37_11/07/17	GW28_11/07/17
Client sampling date / time					11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709106-001	EM1709106-002	EM1709106-003	EM1709106-004	EM1709106-005	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes</b>									
Chloroform	67-66-3	1	µg/L	<1	<1	<1	<1	<1	
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	<1	<1	<1	
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	<1	
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW38_11/07/17	GW33_11/07/17	GW36_11/07/17	GW37_11/07/17	GW28_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-001	EM1709106-002	EM1709106-003	EM1709106-004	EM1709106-005	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	----	----	----	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	----	----	----	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	----	----	----	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	----	----	----	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	----	----	----	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	----	----	----	----	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	----	----	----	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	----	----	----	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	----	----	----	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	----	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW38_11/07/17	GW33_11/07/17	GW36_11/07/17	GW37_11/07/17	GW28_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-001	EM1709106-002	EM1709106-003	EM1709106-004	EM1709106-005	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	----	----	----	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	----	----	----	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	----	----	----	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	----	----	----	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	----	----	----	----	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	----	----	----	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	----	----	----	----	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	----	----	----	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	----	----	----	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	----	----	----	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	----	----	----	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	----	----	----	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	----	----	----	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	----	----	----	----	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	----	----	----	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	----	----	----	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	----	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW38_11/07/17	GW33_11/07/17	GW36_11/07/17	GW37_11/07/17	GW28_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-001	EM1709106-002	EM1709106-003	EM1709106-004	EM1709106-005	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	----	----	----	----	----
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	----	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----	----
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	99.1	96.1	99.2	92.3	94.5	
Toluene-D8	2037-26-5	1	%	98.8	95.9	99.0	91.8	94.1	
4-Bromofluorobenzene	460-00-4	1	%	99.9	92.3	99.5	94.5	94.3	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	35.6	34.5	34.5	27.6	26.0	
2-Chlorophenol-D4	93951-73-6	1	%	90.7	87.5	90.2	78.6	79.2	
2,4,6-Tribromophenol	118-79-6	1	%	73.3	80.3	83.3	67.6	66.0	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	75.8	77.8	78.9	68.7	64.6	
Anthracene-d10	1719-06-8	1	%	82.4	82.3	83.8	72.5	71.8	
4-Terphenyl-d14	1718-51-0	1	%	87.5	86.6	85.1	75.5	73.3	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	101	98.0	101	94.2	96.4	
Toluene-D8	2037-26-5	2	%	92.3	89.6	92.4	85.8	87.9	
4-Bromofluorobenzene	460-00-4	2	%	97.0	89.6	95.5	92.5	92.8	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	98.9	----	----	----	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW23_11/07/17	GW22_11/07/17	QC304_11/07/17	GW29_11/07/17	GW05_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-006	EM1709106-007	EM1709106-008	EM1709106-009	EM1709106-010	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	6.55	6.58	----	7.60	7.89	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	2190	782	----	878	1290	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	82	90	----	408	1070	
Total Alkalinity as CaCO3	----	1	mg/L	82	90	----	408	1070	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	682	200	----	227	<5	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	999	348	----	306	60	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	762	51	----	109	163	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	181	61	----	162	100	
Magnesium	7439-95-4	1	mg/L	76	23	----	28	117	
Sodium	7440-23-5	1	mg/L	459	52	----	96	238	
Potassium	7440-09-7	1	mg/L	26	7	----	8	56	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.03	0.10	----	<0.01	<0.01	
Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	----	0.001	0.007	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.003	0.007	----	<0.001	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	0.002	----	<0.001	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	0.002	----	<0.001	<0.001	
Manganese	7439-96-5	0.001	mg/L	0.434	0.110	----	0.017	0.369	
Nickel	7440-02-0	0.001	mg/L	0.008	0.005	----	0.035	0.009	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	----	<0.01	<0.01	
Zinc	7440-66-6	0.005	mg/L	0.372	0.088	----	0.012	0.006	
Iron	7439-89-6	0.05	mg/L	16.3	2.86	----	0.91	11.4	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	3.84	13.5	<0.01	2.81	21.9	
Arsenic	7440-38-2	0.001	mg/L	0.018	0.029	<0.001	0.017	0.040	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW23_11/07/17	GW22_11/07/17	QC304_11/07/17	GW29_11/07/17	GW05_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-006	EM1709106-007	EM1709106-008	EM1709106-009	EM1709106-010	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0001	<0.0001	<0.0001	0.0031	
Chromium	7440-47-3	0.001	mg/L	0.019	0.042	<0.001	0.012	0.079	
Copper	7440-50-8	0.001	mg/L	0.006	0.013	<0.001	0.005	1.63	
Nickel	7440-02-0	0.001	mg/L	0.013	0.013	<0.001	0.069	0.466	
Lead	7439-92-1	0.001	mg/L	0.011	0.113	<0.001	0.055	5.15	
Zinc	7440-66-6	0.005	mg/L	0.419	0.151	<0.005	0.061	2.44	
Manganese	7439-96-5	0.001	mg/L	0.472	0.117	----	0.042	0.717	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	34.1	19.5	<0.05	15.9	66.2	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.3	0.1	----	0.3	0.6	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	1.71	0.42	----	0.02	6.14	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	0.01	0.01	----	0.02	<0.01	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	0.02	----	0.24	<0.01	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	0.01	0.03	----	0.26	<0.01	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	----	<0.01	<0.01	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	37.3	7.40	----	16.0	26.0	
Total Cations	----	0.01	meq/L	35.9	7.38	----	14.8	26.4	
Ionic Balance	----	0.01	%	1.93	0.16	----	3.85	0.82	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	9	23	----	13	17	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	<1	----	<1	<1	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW23_11/07/17	GW22_11/07/17	QC304_11/07/17	GW29_11/07/17	GW05_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-006	EM1709106-007	EM1709106-008	EM1709106-009	EM1709106-010	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	<1	----	<1	<1	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	----	<1	<1	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	----	<1	<1	
Styrene	100-42-5	1	µg/L	<1	<1	----	<1	<1	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	----	<1	<1	
Isopropylbenzene	98-82-8	1	µg/L	<1	<1	----	<1	<1	
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	----	<1	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	----	<1	<1	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	----	<1	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	----	<1	<1	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	----	<1	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	----	<1	<1	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	----	<1	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	----	<10	<10	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	----	<10	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	----	<10	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	----	<10	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	----	<10	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	<1	----	<1	<1	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	----	<1	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	----	<1	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	----	<2	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	----	<2	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	----	<1	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	----	<10	<10	
Chloromethane	74-87-3	10	µg/L	<10	<10	----	<10	<10	
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	----	<10.0	<10.0	
Vinyl chloride	75-01-4	10.0	µg/L	----	----	----	<10.0	----	
Bromomethane	74-83-9	10	µg/L	<10	<10	----	<10	<10	
Chloroethane	75-00-3	10	µg/L	<10	<10	----	<10	<10	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW23_11/07/17	GW22_11/07/17	QC304_11/07/17	GW29_11/07/17	GW05_11/07/17
Client sampling date / time					11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709106-006	EM1709106-007	EM1709106-008	EM1709106-009	EM1709106-010	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	----	<10	<10	
1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	----	<1	<1	
Iodomethane	74-88-4	1	µg/L	<1	<1	----	<1	<1	
Methylene chloride	75-09-2	4	µg/L	<4	<4	----	<4	<4	
trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	<1	----	<1	<1	
1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	----	<1	<1	
cis-1.2-Dichloroethene	156-59-2	1	µg/L	2	<1	----	<1	<1	
1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	----	<1	<1	
1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	----	<1	<1	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	----	<1	<1	
1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	----	<1	<1	
Trichloroethene	79-01-6	1	µg/L	<1	<1	----	<1	<1	
Dibromomethane	74-95-3	1	µg/L	<1	<1	----	<1	<1	
1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	----	<1	<1	
1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	----	<1	<1	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	----	<1	<1	
1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	----	<1	<1	
trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	----	<1	<1	
cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	----	<1	<1	
1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	----	<1	<1	
1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	----	<1	<1	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	----	<1	<1	
1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	----	<1	<1	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	----	----	<1.0	
Hexachlorobutadiene	87-68-3	1.0	µg/L	----	----	----	<1.0	----	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	<1	----	<1	<1	
Bromobenzene	108-86-1	1	µg/L	<1	<1	----	<1	<1	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	----	<1	<1	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	----	<1	<1	
1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	----	<1	<1	
1.4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	<1.0	----	----	<1.0	
1.4-Dichlorobenzene	106-46-7	1.0	µg/L	----	----	----	<1.0	----	
1.2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	----	<1	<1	
1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	----	<1	<1	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW23_11/07/17	GW22_11/07/17	QC304_11/07/17	GW29_11/07/17	GW05_11/07/17
Client sampling date / time					11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709106-006	EM1709106-007	EM1709106-008	EM1709106-009	EM1709106-010	EM1709106-010
				Result	Result	Result	Result	Result	Result
<b>EP074F: Halogenated Aromatic Compounds - Continued</b>									
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	----	<1	<1	<1
<b>EP074G: Trihalomethanes</b>									
Chloroform	67-66-3	1	µg/L	<1	<1	----	<1	<1	<1
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	----	<1	<1	<1
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	----	<1	<1	<1
Bromoform	75-25-2	1	µg/L	<1	<1	----	<1	<1	<1
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	<5	----	<5	<5	<5
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	<1.0
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	<1.0
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	<1.0
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	<1.0
Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	<1.0
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5	<0.5
Indeno(1,2,3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	<1.0
Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	<1.0
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5	<0.5
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW23_11/07/17	GW22_11/07/17	QC304_11/07/17	GW29_11/07/17	GW05_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-006	EM1709106-007	EM1709106-008	EM1709106-009	EM1709106-010	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	97.4	94.6	----	93.3	93.2	
Toluene-D8	2037-26-5	1	%	99.2	96.1	----	97.9	93.8	
4-Bromofluorobenzene	460-00-4	1	%	100	96.7	----	98.2	96.6	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	30.3	34.7	----	35.9	30.5	
2-Chlorophenol-D4	93951-73-6	1	%	84.8	90.7	----	88.9	78.8	
2,4,6-Tribromophenol	118-79-6	1	%	80.8	80.1	----	80.1	79.7	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	78.5	80.9	----	80.9	72.6	
Anthracene-d10	1719-06-8	1	%	85.6	87.5	----	86.8	83.1	
4-Terphenyl-d14	1718-51-0	1	%	90.0	92.6	----	94.9	87.0	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	99.5	96.5	95.5	96.4	95.2	
Toluene-D8	2037-26-5	2	%	92.5	89.7	84.7	88.6	87.5	
4-Bromofluorobenzene	460-00-4	2	%	98.8	93.9	90.1	94.2	91.1	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW09_11/07/17	GW03_11/07/17	GW04_11/07/17	QC203_11/07/17	GW11_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-011	EM1709106-012	EM1709106-013	EM1709106-014	EM1709106-015	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.71	7.76	7.80	7.81	7.79	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	985	1410	814	916	629	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	391	912	601	603	272	
Total Alkalinity as CaCO3	----	1	mg/L	391	912	601	603	272	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	318	259	182	178	189	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	518	497	122	278	305	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	84	136	30	28	13	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	167	202	189	189	155	
Magnesium	7439-95-4	1	mg/L	32	113	49	48	11	
Sodium	7440-23-5	1	mg/L	117	173	54	54	26	
Potassium	7440-09-7	1	mg/L	24	47	13	13	9	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.03	<0.01	<0.01	<0.01	<0.01	
Arsenic	7440-38-2	0.001	mg/L	<0.001	0.007	0.002	0.002	0.005	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.001	0.002	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Manganese	7439-96-5	0.001	mg/L	0.269	0.645	0.162	0.160	0.130	
Nickel	7440-02-0	0.001	mg/L	0.010	0.012	0.022	0.021	0.012	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Zinc	7440-66-6	0.005	mg/L	<0.005	0.012	0.079	0.074	<0.005	
Iron	7439-89-6	0.05	mg/L	9.89	8.56	0.67	0.67	1.98	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.93	1.70	27.5	30.4	0.32	
Arsenic	7440-38-2	0.001	mg/L	0.002	0.010	0.071	0.080	0.008	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW09_11/07/17	GW03_11/07/17	GW04_11/07/17	QC203_11/07/17	GW11_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-011	EM1709106-012	EM1709106-013	EM1709106-014	EM1709106-015	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0002	0.0013	0.0016	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.003	0.004	0.069	0.075	0.002	
Copper	7440-50-8	0.001	mg/L	0.001	0.013	0.100	0.109	<0.001	
Nickel	7440-02-0	0.001	mg/L	0.011	0.016	0.075	0.083	0.012	
Lead	7439-92-1	0.001	mg/L	0.003	0.153	0.186	0.203	0.001	
Zinc	7440-66-6	0.005	mg/L	0.008	0.150	1.23	1.37	<0.005	
Manganese	7439-96-5	0.001	mg/L	0.300	0.700	1.38	1.52	0.135	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	16.1	11.7	69.8	78.1	3.32	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.3	0.5	0.4	0.4	0.2	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	5.13	0.78	0.02	0.03	0.37	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	0.35	<0.01	0.01	<0.01	0.01	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	0.35	<0.01	0.01	<0.01	0.01	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	16.8	27.4	16.6	16.5	9.74	
Total Cations	----	0.01	meq/L	16.7	28.1	16.1	16.1	10.0	
Ionic Balance	----	0.01	%	0.40	1.18	1.52	1.47	1.34	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	12	11	4	4	7	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW09_11/07/17	GW03_11/07/17	GW04_11/07/17	QC203_11/07/17	GW11_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-011	EM1709106-012	EM1709106-013	EM1709106-014	EM1709106-015	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	<1	<1	<1	<1	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	<1	<1	<1	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	<1	<1	<1	
Styrene	100-42-5	1	µg/L	<1	<1	<1	<1	<1	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	<1	<1	<1	
Isopropylbenzene	98-82-8	1	µg/L	<1	<1	<1	<1	<1	
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	<1	<1	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	<1	<1	<1	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	<1	<1	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	<1	<1	<1	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	<1	<1	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	<1	<1	<1	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	<10	<10	<10	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	<10	<10	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	<10	<10	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	<10	<10	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	<10	<10	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	<10	<10	<10	
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	<10	
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	<10.0	<10.0	<10.0	
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	<10	
Chloroethane	75-00-3	10	µg/L	<10	<10	<10	<10	<10	
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	<10	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW09_11/07/17	GW03_11/07/17	GW04_11/07/17	QC203_11/07/17	GW11_11/07/17
Client sampling date / time					11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709106-011	EM1709106-012	EM1709106-013	EM1709106-014	EM1709106-015	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	<1	
Iodomethane	74-88-4	1	µg/L	<1	<1	<1	<1	<1	
Methylene chloride	75-09-2	4	µg/L	<4	<4	<4	<4	<4	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	<1	<1	<1	
1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	<1	<1	<1	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	<1	<1	7	
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	<1	
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	<1	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	<1	
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	<1	
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	<1	
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	<1	
1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	<1	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	<1	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	<1	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	<1	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	<1	<1	<1	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	<1	
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	<1	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	<1	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	<1	<1	<1	<1	
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	<1	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	<1	<1	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	<1	
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	<1	<1	<1	
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	<1	<1	<1	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	<1	<1	<1	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074G: Trihalomethanes</b>									



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW09_11/07/17	GW03_11/07/17	GW04_11/07/17	QC203_11/07/17	GW11_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-011	EM1709106-012	EM1709106-013	EM1709106-014	EM1709106-015	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	<1	<1	<1	<1	<1	
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	<1	<1	<1	
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	<1	
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<b>260</b>	
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<b>260</b>	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW09_11/07/17	GW03_11/07/17	GW04_11/07/17	QC203_11/07/17	GW11_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-011	EM1709106-012	EM1709106-013	EM1709106-014	EM1709106-015	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	330	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	330	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	330	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	----	<0.02	----	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	----	<0.02	----	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	----	<0.02	----	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	----	<0.02	----	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	----	<0.01	----	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	----	<0.02	----	----	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	----	<0.1	----	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	----	<0.02	----	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	----	<0.02	----	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	----	<0.02	----	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW09_11/07/17	GW03_11/07/17	GW04_11/07/17	QC203_11/07/17	GW11_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-011	EM1709106-012	EM1709106-013	EM1709106-014	EM1709106-015	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	----	<0.01	----	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	----	<0.02	----	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	----	<0.02	----	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	----	<0.02	----	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	----	<0.02	----	----	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	----	----	<0.02	----	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	----	<0.05	----	----	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	----	<0.02	----	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	----	<0.05	----	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	----	<0.05	----	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	----	----	<0.05	----	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	----	<0.05	----	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	----	<0.02	----	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	----	<0.02	----	----	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	----	<0.05	----	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	----	<0.05	----	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	----	<0.05	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW09_11/07/17	GW03_11/07/17	GW04_11/07/17	QC203_11/07/17	GW11_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-011	EM1709106-012	EM1709106-013	EM1709106-014	EM1709106-015	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	----	<0.05	----	----	
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	----	----	<0.01	----	----	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	----	<0.01	----	----	
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	----	<0.01	----	----	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	92.5	94.7	94.2	92.8	93.0	
Toluene-D8	2037-26-5	1	%	94.4	89.6	94.9	91.4	92.4	
4-Bromofluorobenzene	460-00-4	1	%	93.7	91.0	96.4	97.8	96.7	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	35.3	32.6	35.6	30.3	35.4	
2-Chlorophenol-D4	93951-73-6	1	%	87.2	90.0	87.1	89.2	92.5	
2,4,6-Tribromophenol	118-79-6	1	%	78.7	70.9	81.6	71.3	76.5	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	80.2	69.4	74.0	81.8	71.0	
Anthracene-d10	1719-06-8	1	%	85.6	78.1	90.0	91.2	83.3	
4-Terphenyl-d14	1718-51-0	1	%	90.4	80.4	93.5	97.9	85.5	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	94.4	96.6	96.0	94.7	94.8	
Toluene-D8	2037-26-5	2	%	87.9	83.6	88.6	85.2	86.3	
4-Bromofluorobenzene	460-00-4	2	%	93.4	90.1	95.0	93.7	91.5	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	----	----	97.1	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW06_11/07/17	QC205_11/07/17	QC202_11/07/17	QC206_11/07/17	GW39_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-016	EM1709106-017	EM1709106-018	EM1709106-019	EM1709106-020	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.68	----	----	----	6.91	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	2350	----	----	----	1310	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	621	----	----	----	227	
Total Alkalinity as CaCO3	----	1	mg/L	621	----	----	----	227	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	728	----	----	----	140	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	1150	----	----	----	191	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	494	----	----	----	594	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	263	----	----	----	93	
Magnesium	7439-95-4	1	mg/L	83	----	----	----	38	
Sodium	7440-23-5	1	mg/L	422	----	----	----	283	
Potassium	7440-09-7	1	mg/L	54	----	----	----	19	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.04	----	----	----	0.09	
Arsenic	7440-38-2	0.001	mg/L	0.036	----	----	----	0.022	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.002	----	----	----	0.003	
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	<0.001	
Manganese	7439-96-5	0.001	mg/L	0.504	----	----	----	0.043	
Nickel	7440-02-0	0.001	mg/L	0.015	----	----	----	0.026	
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	----	<0.01	
Zinc	7440-66-6	0.005	mg/L	0.011	----	----	----	0.009	
Iron	7439-89-6	0.05	mg/L	24.8	----	----	----	4.76	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.44	----	<0.01	----	1.32	
Arsenic	7440-38-2	0.001	mg/L	0.080	----	<0.001	----	0.109	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW06_11/07/17	QC205_11/07/17	QC202_11/07/17	QC206_11/07/17	GW39_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-016	EM1709106-017	EM1709106-018	EM1709106-019	EM1709106-020	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	<0.0001	----	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<b>0.005</b>	----	<0.001	----	<b>0.007</b>	
Copper	7440-50-8	0.001	mg/L	<b>0.003</b>	----	<0.001	----	<b>0.005</b>	
Nickel	7440-02-0	0.001	mg/L	<b>0.018</b>	----	<0.001	----	<b>0.029</b>	
Lead	7439-92-1	0.001	mg/L	<b>0.007</b>	----	<0.001	----	<b>0.010</b>	
Zinc	7440-66-6	0.005	mg/L	<b>0.010</b>	----	<0.005	----	<b>0.013</b>	
Manganese	7439-96-5	0.001	mg/L	<b>0.546</b>	----	----	----	<b>0.049</b>	
Selenium	7782-49-2	0.01	mg/L	<0.01	----	<0.01	----	<0.01	
Iron	7439-89-6	0.05	mg/L	<b>34.4</b>	----	<0.05	----	<b>16.1</b>	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	<0.0001	----	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	<b>0.5</b>	----	----	----	<b>0.2</b>	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	<b>8.49</b>	----	----	----	<b>1.41</b>	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	----	----	----	<0.01	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<b>0.28</b>	----	----	----	<0.01	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<b>0.28</b>	----	----	----	<0.01	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	----	----	----	<b>0.02</b>	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	<b>41.5</b>	----	----	----	<b>24.2</b>	
Total Cations	----	0.01	meq/L	<b>39.7</b>	----	----	----	<b>20.6</b>	
Ionic Balance	----	0.01	%	<b>2.23</b>	----	----	----	<b>8.14</b>	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	<b>46</b>	----	----	----	<b>29</b>	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	----	----	----	<1	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW06_11/07/17	QC205_11/07/17	QC202_11/07/17	QC206_11/07/17	GW39_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-016	EM1709106-017	EM1709106-018	EM1709106-019	EM1709106-020	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	----	----	----	----	<1
Ethylbenzene	100-41-4	1	µg/L	<1	----	----	----	----	<1
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	----	----	----	----	<1
Styrene	100-42-5	1	µg/L	<1	----	----	----	----	<1
ortho-Xylene	95-47-6	1	µg/L	<1	----	----	----	----	<1
Isopropylbenzene	98-82-8	1	µg/L	<1	----	----	----	----	<1
n-Propylbenzene	103-65-1	1	µg/L	<1	----	----	----	----	<1
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	----	----	----	----	<1
sec-Butylbenzene	135-98-8	1	µg/L	<1	----	----	----	----	<1
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	----	----	----	----	<1
tert-Butylbenzene	98-06-6	1	µg/L	<1	----	----	----	----	<1
p-Isopropyltoluene	99-87-6	1	µg/L	<1	----	----	----	----	<1
n-Butylbenzene	104-51-8	1	µg/L	<1	----	----	----	----	<1
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	----	----	----	----	<10
Vinyl Acetate	108-05-4	10	µg/L	<10	----	----	----	----	<10
2-Butanone (MEK)	78-93-3	10	µg/L	<10	----	----	----	----	<10
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	----	----	----	----	<10
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	----	----	----	----	<10
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	----	----	----	----	<1
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	----	----	----	----	<1
1,2-Dichloropropane	78-87-5	1	µg/L	<1	----	----	----	----	<1
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	----	----	----	----	<2
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	----	----	----	----	<2
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	----	----	----	----	<1
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	----	----	----	----	<10
Chloromethane	74-87-3	10	µg/L	<10	----	----	----	----	<10
Vinyl chloride	75-01-4	10	µg/L	<10.0	----	----	----	----	<10.0
Bromomethane	74-83-9	10	µg/L	<10	----	----	----	----	<10
Chloroethane	75-00-3	10	µg/L	<10	----	----	----	----	<10
Trichlorofluoromethane	75-69-4	10	µg/L	<10	----	----	----	----	<10



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW06_11/07/17	QC205_11/07/17	QC202_11/07/17	QC206_11/07/17	GW39_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-016	EM1709106-017	EM1709106-018	EM1709106-019	EM1709106-020	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	----	----	----	----	<1
Iodomethane	74-88-4	1	µg/L	<1	----	----	----	----	<1
Methylene chloride	75-09-2	4	µg/L	<4	----	----	----	----	<4
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	----	----	----	----	<1
1,1-Dichloroethane	75-34-3	1	µg/L	<1	----	----	----	----	<1
cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	----	----	----	----	7
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	----	----	----	----	<1
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	----	----	----	----	<1
Carbon Tetrachloride	56-23-5	1	µg/L	<1	----	----	----	----	<1
1,2-Dichloroethane	107-06-2	1	µg/L	<1	----	----	----	----	<1
Trichloroethene	79-01-6	1	µg/L	<1	----	----	----	----	<1
Dibromomethane	74-95-3	1	µg/L	<1	----	----	----	----	<1
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	----	----	----	----	<1
1,3-Dichloropropane	142-28-9	1	µg/L	<1	----	----	----	----	<1
Tetrachloroethene	127-18-4	1	µg/L	<1	----	----	----	----	<1
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	----	----	----	----	<1
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	----	----	----	----	<1
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	----	----	----	----	<1
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	----	----	----	----	<1
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	----	----	----	----	<1
Pentachloroethane	76-01-7	1	µg/L	<1	----	----	----	----	<1
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	----	----	----	----	<1
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	----	----	----	----	<1.0
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	----	----	----	----	<1
Bromobenzene	108-86-1	1	µg/L	<1	----	----	----	----	<1
2-Chlorotoluene	95-49-8	1	µg/L	<1	----	----	----	----	<1
4-Chlorotoluene	106-43-4	1	µg/L	<1	----	----	----	----	<1
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	----	----	----	----	<1
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	----	----	----	----	<1.0
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	----	----	----	----	<1
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	----	----	----	----	<1
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	----	----	----	----	<1
<b>EP074G: Trihalomethanes</b>									







## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW06_11/07/17	QC205_11/07/17	QC202_11/07/17	QC206_11/07/17	GW39_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-016	EM1709106-017	EM1709106-018	EM1709106-019	EM1709106-020	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	----	<100	----	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	----	<100	----	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	----	<100	----	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	<100	----	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	<100	----	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	95.0	----	----	----	91.9	
Toluene-D8	2037-26-5	1	%	93.1	----	----	----	89.8	
4-Bromofluorobenzene	460-00-4	1	%	96.4	----	----	----	95.4	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	33.8	----	----	----	35.5	
2-Chlorophenol-D4	93951-73-6	1	%	89.6	----	----	----	82.5	
2,4,6-Tribromophenol	118-79-6	1	%	91.8	----	----	----	72.4	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	91.1	----	----	----	70.0	
Anthracene-d10	1719-06-8	1	%	94.0	----	----	----	79.8	
4-Terphenyl-d14	1718-51-0	1	%	98.6	----	----	----	80.6	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	96.9	94.3	97.3	94.6	93.6	
Toluene-D8	2037-26-5	2	%	86.9	86.0	87.6	86.3	83.7	
4-Bromofluorobenzene	460-00-4	2	%	92.7	91.6	91.1	90.5	91.7	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW40_11/07/17	GW50_11/07/17	GW44_11/07/17	GW49_11/07/17	QC102_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-021	EM1709106-022	EM1709106-023	EM1709106-024	EM1709106-025	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	6.45	7.60	7.74	7.31	----	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	2990	13800	11500	254	----	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	142	1170	790	59	----	
Total Alkalinity as CaCO3	----	1	mg/L	142	1170	790	59	----	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1480	1260	1200	3	----	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	2370	1990	1800	8	----	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	710	7410	6580	6	----	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	286	477	293	8	----	
Magnesium	7439-95-4	1	mg/L	118	444	575	6	----	
Sodium	7440-23-5	1	mg/L	518	3830	3500	6	----	
Potassium	7440-09-7	1	mg/L	16	148	129	3	----	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.03	0.05	<0.01	0.10	----	
Arsenic	7440-38-2	0.001	mg/L	0.006	0.017	<0.001	0.001	----	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----	
Chromium	7440-47-3	0.001	mg/L	<0.001	0.005	0.004	0.002	----	
Copper	7440-50-8	0.001	mg/L	<0.001	0.002	<0.001	<0.001	----	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----	
Manganese	7439-96-5	0.001	mg/L	0.742	0.869	0.043	0.020	----	
Nickel	7440-02-0	0.001	mg/L	0.039	0.049	0.064	0.014	----	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----	
Zinc	7440-66-6	0.005	mg/L	0.156	0.015	0.007	0.007	----	
Iron	7439-89-6	0.05	mg/L	63.0	21.2	0.78	1.26	----	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	39.1	43.7	1.16	8.13	<0.01	
Arsenic	7440-38-2	0.001	mg/L	0.053	0.086	0.003	0.006	<0.001	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW40_11/07/17	GW50_11/07/17	GW44_11/07/17	GW49_11/07/17	QC102_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-021	EM1709106-022	EM1709106-023	EM1709106-024	EM1709106-025	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	0.0007	0.0016	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.085	0.139	0.008	0.026	<0.001	
Copper	7440-50-8	0.001	mg/L	0.059	0.079	0.002	0.003	<0.001	
Nickel	7440-02-0	0.001	mg/L	0.115	0.142	0.064	0.026	<0.001	
Lead	7439-92-1	0.001	mg/L	0.039	0.075	0.001	0.005	<0.001	
Zinc	7440-66-6	0.005	mg/L	0.432	0.278	0.010	0.030	<0.005	
Manganese	7439-96-5	0.001	mg/L	0.812	1.11	0.054	0.048	----	
Selenium	7782-49-2	0.01	mg/L	0.01	0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	106	91.9	2.74	12.1	<0.05	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	<0.1	1.3	0.4	1.0	----	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	3.99	13.4	12.2	0.17	----	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.02	<0.01	0.01	----	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	0.42	0.32	0.01	----	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.44	0.32	0.02	----	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	2.21	0.03	----	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	53.7	259	226	1.41	----	
Total Cations	----	0.01	meq/L	----	----	----	1.30	----	
Total Cations	----	0.01	meq/L	46.9	231	217	----	----	
Ionic Balance	----	0.01	%	----	----	----	4.18	----	
Ionic Balance	----	0.01	%	6.71	5.70	2.00	----	----	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	19	64	46	5	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW40_11/07/17	GW50_11/07/17	GW44_11/07/17	GW49_11/07/17	QC102_11/07/17
Client sampling date / time					11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709106-021	EM1709106-022	EM1709106-023	EM1709106-024	EM1709106-025	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	----	
Toluene	108-88-3	1	µg/L	<1	<1	<1	<1	----	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	<1	<1	----	
meta- & para-Xylene	108-38-3	106-42-3	1	µg/L	<1	<1	<1	----	
Styrene	100-42-5	1	µg/L	<1	<1	<1	<1	----	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	<1	<1	----	
Isopropylbenzene	98-82-8	1	µg/L	<1	<1	<1	<1	----	
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	<1	<1	----	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	<1	<1	----	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	<1	<1	----	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	<1	<1	----	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	<1	<1	----	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	<1	<1	----	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	<1	<1	----	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	<10	<10	----	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	<10	<10	----	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	<10	<10	----	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	<10	<10	----	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	<10	<10	----	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	<1	2	<1	----	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	----	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	----	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	----	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	----	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	----	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	<10	<10	----	
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	----	
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	<10.0	<10.0	----	
Bromomethane	74-83-9	10	µg/L	<10	<10	10	<10	----	
Chloroethane	75-00-3	10	µg/L	<10	<10	<10	<10	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW40_11/07/17	GW50_11/07/17	GW44_11/07/17	GW49_11/07/17	QC102_11/07/17
Client sampling date / time					11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709106-021	EM1709106-022	EM1709106-023	EM1709106-024	EM1709106-025	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	----	
1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	----	
Iodomethane	74-88-4	1	µg/L	<1	<1	<1	<1	----	
Methylene chloride	75-09-2	4	µg/L	<4	<4	<4	<4	----	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	<1	<1	----	
1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	49	<1	----	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	<1	3	----	
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	----	
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	----	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	----	
1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	----	
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	----	
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	----	
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	----	
1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	----	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	----	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	----	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	----	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	<1	<1	----	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	----	
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	----	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	<1	<1	----	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	----	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	<1	<1	<1	----	
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	----	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	<1	----	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	----	
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	<1	<1	----	
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	<1	<1	----	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	<1	<1	----	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	<1	<1	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW40_11/07/17	GW50_11/07/17	GW44_11/07/17	GW49_11/07/17	QC102_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-021	EM1709106-022	EM1709106-023	EM1709106-024	EM1709106-025	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes</b>									
Chloroform	67-66-3	1	µg/L	<1	<1	<1	<1	----	
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	<1	<1	----	
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	----	
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	----	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<b>30</b>	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW40_11/07/17	GW50_11/07/17	GW44_11/07/17	GW49_11/07/17	QC102_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-021	EM1709106-022	EM1709106-023	EM1709106-024	EM1709106-025	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	----	----	<0.02	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	----	----	<0.02	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	----	----	<0.02	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	----	----	<0.02	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	----	----	<0.01	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	----	----	<0.02	----	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	----	----	<0.1	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	----	----	<0.02	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	----	----	<0.02	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	----	----	<0.02	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW40_11/07/17	GW50_11/07/17	GW44_11/07/17	GW49_11/07/17	QC102_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-021	EM1709106-022	EM1709106-023	EM1709106-024	EM1709106-025	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	----	----	<0.01	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	----	----	<0.02	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	----	----	<0.02	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	----	----	<0.02	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	----	----	<0.02	----	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	----	----	----	<0.02	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	----	----	<0.05	----	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	----	----	<0.02	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	----	----	<0.05	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	----	----	<0.05	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	----	----	----	<0.05	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	----	----	<0.05	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	----	----	<0.02	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	----	----	<0.02	----	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	----	----	<0.05	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	----	----	<0.05	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	----	----	<0.05	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW40_11/07/17	GW50_11/07/17	GW44_11/07/17	GW49_11/07/17	QC102_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-021	EM1709106-022	EM1709106-023	EM1709106-024	EM1709106-025	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	----	----	<0.05	----	
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	----	----	----	<0.01	----	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	----	----	<0.01	----	
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	----	----	<0.01	----	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	96.5	97.5	98.6	92.9	----	
Toluene-D8	2037-26-5	1	%	97.8	92.1	96.6	94.0	----	
4-Bromofluorobenzene	460-00-4	1	%	96.5	97.0	97.1	98.3	----	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	33.9	36.4	32.4	34.6	----	
2-Chlorophenol-D4	93951-73-6	1	%	82.3	84.9	79.3	88.0	----	
2,4,6-Tribromophenol	118-79-6	1	%	64.6	86.0	67.9	83.2	----	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	59.1	83.1	68.7	85.8	----	
Anthracene-d10	1719-06-8	1	%	68.8	93.0	70.6	86.0	----	
4-Terphenyl-d14	1718-51-0	1	%	73.4	99.3	75.0	92.8	----	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	98.5	99.4	100	94.6	94.3	
Toluene-D8	2037-26-5	2	%	91.3	86.0	90.1	87.7	83.8	
4-Bromofluorobenzene	460-00-4	2	%	95.9	91.6	95.2	93.6	86.8	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	----	----	----	100	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Client sample ID			GW54_11/07/17	----	----	----	----
Client sampling date / time		11-Jul-2017 00:00			----	----	----	----	
Compound	CAS Number	LOR	Unit	EM1709106-026	-----	-----	-----	-----	
				Result	----	----	----	----	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.05	----	----	----	----	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	1670	----	----	----	----	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	680	----	----	----	----	
Total Alkalinity as CaCO3	----	1	mg/L	680	----	----	----	----	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	137	----	----	----	----	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	354	----	----	----	----	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	500	----	----	----	----	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	158	----	----	----	----	
Magnesium	7439-95-4	1	mg/L	77	----	----	----	----	
Sodium	7440-23-5	1	mg/L	362	----	----	----	----	
Potassium	7440-09-7	1	mg/L	21	----	----	----	----	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.41	----	----	----	----	
Arsenic	7440-38-2	0.001	mg/L	0.033	----	----	----	----	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----	
Chromium	7440-47-3	0.001	mg/L	0.007	----	----	----	----	
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----	
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----	
Manganese	7439-96-5	0.001	mg/L	0.554	----	----	----	----	
Nickel	7440-02-0	0.001	mg/L	0.012	----	----	----	----	
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	----	----	
Zinc	7440-66-6	0.005	mg/L	0.008	----	----	----	----	
Iron	7439-89-6	0.05	mg/L	2.10	----	----	----	----	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	117	----	----	----	----	
Arsenic	7440-38-2	0.001	mg/L	0.258	----	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Client sample ID			GW54_11/07/17	----	----	----	----
		Client sampling date / time			11-Jul-2017 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM1709106-026	-----	-----	-----	-----	-----
				Result	----	----	----	----	----
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	0.0012	----	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	0.393	----	----	----	----	----
Copper	7440-50-8	0.001	mg/L	0.106	----	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	0.243	----	----	----	----	----
Lead	7439-92-1	0.001	mg/L	0.239	----	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	0.391	----	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	1.12	----	----	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.10	----	----	----	----	----
Iron	7439-89-6	0.05	mg/L	97.2	----	----	----	----	----
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----	----
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----	----
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	<0.1	----	----	----	----	----
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	6.90	----	----	----	----	----
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	----	----	----	----	----
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	----	----	----	----	----
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	----	----	----	----	----
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.05	----	----	----	----	----
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	30.5	----	----	----	----	----
Total Cations	----	0.01	meq/L	30.5	----	----	----	----	----
Ionic Balance	----	0.01	%	0.06	----	----	----	----	----
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	75	----	----	----	----	----
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	----	----	----	----	----





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW54_11/07/17	----	----	----	----
Client sampling date / time				11-Jul-2017 00:00	----	----	----	----	
Compound	CAS Number	LOR	Unit	EM1709106-026	-----	-----	-----	-----	
				Result	----	----	----	----	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	----	----	----	----	
Ethylbenzene	100-41-4	1	µg/L	<1	----	----	----	----	
meta- & para-Xylene	108-38-3	106-42-3	1	µg/L	<1	----	----	----	
Styrene	100-42-5	1	µg/L	<1	----	----	----	----	
ortho-Xylene	95-47-6	1	µg/L	<1	----	----	----	----	
Isopropylbenzene	98-82-8	1	µg/L	<1	----	----	----	----	
n-Propylbenzene	103-65-1	1	µg/L	<1	----	----	----	----	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	----	----	----	----	
sec-Butylbenzene	135-98-8	1	µg/L	<1	----	----	----	----	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	----	----	----	----	
tert-Butylbenzene	98-06-6	1	µg/L	<1	----	----	----	----	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	----	----	----	----	
n-Butylbenzene	104-51-8	1	µg/L	<1	----	----	----	----	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	----	----	----	----	
Vinyl Acetate	108-05-4	10	µg/L	<10	----	----	----	----	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	----	----	----	----	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	----	----	----	----	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	----	----	----	----	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	----	----	----	----	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	----	----	----	----	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	----	----	----	----	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	----	----	----	----	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	----	----	----	----	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	----	----	----	----	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	----	----	----	----	
Chloromethane	74-87-3	10	µg/L	<10	----	----	----	----	
Vinyl chloride	75-01-4	10	µg/L	<10.0	----	----	----	----	
Bromomethane	74-83-9	10	µg/L	<10	----	----	----	----	
Chloroethane	75-00-3	10	µg/L	<10	----	----	----	----	
Trichlorofluoromethane	75-69-4	10	µg/L	<10	----	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW54_11/07/17	----	----	----	----
Client sampling date / time				11-Jul-2017 00:00	----	----	----	----	----
Compound	CAS Number	LOR	Unit	EM1709106-026	-----	-----	-----	-----	-----
				Result	----	----	----	----	----
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	----	----	----	----	----
Iodomethane	74-88-4	1	µg/L	<1	----	----	----	----	----
Methylene chloride	75-09-2	5	µg/L	<5	----	----	----	----	----
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	----	----	----	----	----
1,1-Dichloroethane	75-34-3	1	µg/L	<1	----	----	----	----	----
cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	----	----	----	----	----
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	----	----	----	----	----
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	----	----	----	----	----
Carbon Tetrachloride	56-23-5	1	µg/L	<1	----	----	----	----	----
1,2-Dichloroethane	107-06-2	1	µg/L	<1	----	----	----	----	----
Trichloroethene	79-01-6	1	µg/L	<1	----	----	----	----	----
Dibromomethane	74-95-3	1	µg/L	<1	----	----	----	----	----
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	----	----	----	----	----
1,3-Dichloropropane	142-28-9	1	µg/L	<1	----	----	----	----	----
Tetrachloroethene	127-18-4	1	µg/L	<1	----	----	----	----	----
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	----	----	----	----	----
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	----	----	----	----	----
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	----	----	----	----	----
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	----	----	----	----	----
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	----	----	----	----	----
Pentachloroethane	76-01-7	1	µg/L	<1	----	----	----	----	----
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	----	----	----	----	----
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	----	----	----	----	----
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	----	----	----	----	----
Bromobenzene	108-86-1	1	µg/L	<1	----	----	----	----	----
2-Chlorotoluene	95-49-8	1	µg/L	<1	----	----	----	----	----
4-Chlorotoluene	106-43-4	1	µg/L	<1	----	----	----	----	----
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	----	----	----	----	----
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	----	----	----	----	----
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	----	----	----	----	----
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	----	----	----	----	----
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	----	----	----	----	----
<b>EP074G: Trihalomethanes</b>									



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Client sample ID			GW54_11/07/17	----	----	----	----
		Client sampling date / time			11-Jul-2017 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM1709106-026	-----	-----	-----	-----	-----
				Result	----	----	----	----	----
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	<1	----	----	----	----	----
Bromodichloromethane	75-27-4	1	µg/L	<1	----	----	----	----	----
Dibromochloromethane	124-48-1	1	µg/L	<1	----	----	----	----	----
Bromoform	75-25-2	1	µg/L	<1	----	----	----	----	----
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	----	----	----	----	----
Acenaphthylene	208-96-8	1	µg/L	<1.0	----	----	----	----	----
Acenaphthene	83-32-9	1	µg/L	<1.0	----	----	----	----	----
Fluorene	86-73-7	1	µg/L	<1.0	----	----	----	----	----
Phenanthrene	85-01-8	1	µg/L	<1.0	----	----	----	----	----
Anthracene	120-12-7	1	µg/L	<1.0	----	----	----	----	----
Fluoranthene	206-44-0	1	µg/L	<1.0	----	----	----	----	----
Pyrene	129-00-0	1	µg/L	<1.0	----	----	----	----	----
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	----	----	----	----	----
Chrysene	218-01-9	1	µg/L	<1.0	----	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	----	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	----	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	----	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	----	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	----	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	----	----	----	----	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	----	----	----	----	----
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----	----
C15 - C28 Fraction	----	100	µg/L	<b>200</b>	----	----	----	----	----
C29 - C36 Fraction	----	50	µg/L	<b>100</b>	----	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<b>300</b>	----	----	----	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	----	----	----	----	----





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW54_11/07/17	----	----	----	----
Client sampling date / time				11-Jul-2017 00:00	----	----	----	----	
Compound	CAS Number	LOR	Unit	EM1709106-026	-----	-----	-----	-----	
				Result	----	----	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	----	----	----	----	
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	----	----	
>C16 - C34 Fraction	----	100	µg/L	250	----	----	----	----	
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	250	----	----	----	----	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	----	----	----	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	----	----	----	----	
Toluene	108-88-3	2	µg/L	<2	----	----	----	----	
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	----	----	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	----	----	----	
ortho-Xylene	95-47-6	2	µg/L	<2	----	----	----	----	
^ Total Xylenes	1330-20-7	2	µg/L	<2	----	----	----	----	
^ Sum of BTEX	----	1	µg/L	<1	----	----	----	----	
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	103	----	----	----	----	
Toluene-D8	2037-26-5	1	%	109	----	----	----	----	
4-Bromofluorobenzene	460-00-4	1	%	105	----	----	----	----	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	27.2	----	----	----	----	
2-Chlorophenol-D4	93951-73-6	1	%	75.5	----	----	----	----	
2,4,6-Tribromophenol	118-79-6	1	%	74.6	----	----	----	----	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	75.3	----	----	----	----	
Anthracene-d10	1719-06-8	1	%	79.0	----	----	----	----	
4-Terphenyl-d14	1718-51-0	1	%	84.4	----	----	----	----	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	100	----	----	----	----	
Toluene-D8	2037-26-5	2	%	99.0	----	----	----	----	
4-Bromofluorobenzene	460-00-4	2	%	101	----	----	----	----	



## Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	72	120
Toluene-D8	2037-26-5	70	130
4-Bromofluorobenzene	460-00-4	70	128
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	10	46
2-Chlorophenol-D4	93951-73-6	23	104
2,4,6-Tribromophenol	118-79-6	28	130
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129
<b>EP231S: PFAS Surrogate</b>			
13C4-PFOS	----	60	130

## QUALITY CONTROL REPORT

<b>Work Order</b>	: <b>EM1709106</b>	<b>Page</b>	: 1 of 44
<b>Amendment</b>	: <b>1</b>		
<b>Client</b>	: <b>AECOM Australia Pty Ltd</b>	<b>Laboratory</b>	: Environmental Division Melbourne
<b>Contact</b>	: <b>MS AVERYLL COYNE</b>	<b>Contact</b>	: Carol Walsh
<b>Address</b>	: <b>COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004</b>	<b>Address</b>	: 4 Westall Rd Springvale VIC Australia 3171
<b>Telephone</b>	: +61 03 9653 1234	<b>Telephone</b>	: +61-3-8549 9608
<b>Project</b>	: 60537182	<b>Date Samples Received</b>	: 12-Jul-2017
<b>Order number</b>	: Task 3.2	<b>Date Analysis Commenced</b>	: 13-Jul-2017
<b>C-O-C number</b>	: ----	<b>Issue Date</b>	: 03-Aug-2017
<b>Sampler</b>	: BH, BP, JM		
<b>Site</b>	: ----		
<b>Quote number</b>	: ME/199/16		
<b>No. of samples received</b>	: 28		
<b>No. of samples analysed</b>	: 26		



Accreditation No. 825  
Accredited for compliance with  
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Chris Lemaitre	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	Senior Semivolatile Instrument Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC





## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :  
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot  
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
 LOR = Limit of reporting  
 RPD = Relative Percentage Difference  
 # = Indicates failed QC

## Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA005P: pH by PC Titrator (QC Lot: 994067)</b>									
EM1709085-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.42	7.52	1.34	0% - 20%
EM1709088-010	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	5.66	5.61	0.887	0% - 20%
<b>EA005P: pH by PC Titrator (QC Lot: 994070)</b>									
EM1709106-006	GW23_11/07/17	EA005-P: pH Value	----	0.01	pH Unit	6.55	6.47	1.23	0% - 20%
EM1709106-020	GW39_11/07/17	EA005-P: pH Value	----	0.01	pH Unit	6.91	6.74	2.49	0% - 20%
<b>EA005P: pH by PC Titrator (QC Lot: 999214)</b>									
EM1709167-002	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	9.47	9.47	0.00	0% - 20%
EM1709149-049	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	6.09	5.72	6.26	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 993900)</b>									
EM1709061-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	1590	1580	0.503	0% - 20%
EM1709106-001	GW38_11/07/17	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	3530	3610	2.21	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 993905)</b>									
EM1709106-013	GW04_11/07/17	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	814	883	8.13	0% - 20%
EM1709107-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	686	692	1.02	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 996492)</b>									
EM1709106-026	GW54_11/07/17	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	1670	1640	1.93	0% - 20%
EM1709144-011	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	<10	0.00	No Limit
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 994066)</b>									
EM1709088-010	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	7	6	24.6	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	7	6	24.6	No Limit
EM1709106-006	GW23_11/07/17	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 994066) - continued</b>									
EM1709106-006	GW23_11/07/17	ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	82	81	1.63	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	82	81	1.63	0% - 20%
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 994072)</b>									
EM1709107-008	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	32	27	15.9	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	32	27	16.9	0% - 20%
EM1709106-020	GW39_11/07/17	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	227	223	2.00	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	227	223	2.00	0% - 20%
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 999215)</b>									
EM1709163-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	305	298	2.32	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	305	298	2.32	0% - 20%
EM1709188-004	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	654	657	0.485	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	654	657	0.485	0% - 20%
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 993991)</b>									
EM1709088-010	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	2	2	0.00	No Limit
EM1709106-006	GW23_11/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	682	673	1.29	0% - 20%
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 993995)</b>									
EM1709106-011	GW09_11/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	318	283	11.6	0% - 20%
EM1709106-022	GW50_11/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1260	1250	0.836	0% - 20%
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 996588)</b>									
EM1709163-004	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1870	1870	0.00	0% - 20%
EM1709106-026	GW54_11/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	137	136	0.757	0% - 20%
<b>ED043: Total Oxidised Sulfur as SO4 2- (QC Lot: 996723)</b>									
EM1709106-001	GW38_11/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	1690	1610	4.99	0% - 20%
EM1709106-011	GW09_11/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	518	520	0.326	0% - 20%
<b>ED043: Total Oxidised Sulfur as SO4 2- (QC Lot: 996724)</b>									
EM1709106-026	GW54_11/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	354	343	3.14	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 993992)</b>									
EM1709088-010	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	7	7	0.00	No Limit
EM1709106-006	GW23_11/07/17	ED045G: Chloride	16887-00-6	1	mg/L	762	743	2.47	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 993996)</b>									



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 993996) - continued</b>									
EM1709110-006	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	7	7	0.00	No Limit
EM1709106-022	GW50_11/07/17	ED045G: Chloride	16887-00-6	1	mg/L	7410	7330	1.08	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 996587)</b>									
EM1709163-004	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	7230	7180	0.662	0% - 20%
EM1709106-026	GW54_11/07/17	ED045G: Chloride	16887-00-6	1	mg/L	500	502	0.397	0% - 20%
<b>ED093F: Dissolved Major Cations (QC Lot: 994606)</b>									
EM1709106-002	GW33_11/07/17	ED093F: Calcium	7440-70-2	1	mg/L	205	211	3.11	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	98	101	3.48	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	224	232	3.25	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	29	30	0.00	0% - 20%
EM1709106-011	GW09_11/07/17	ED093F: Calcium	7440-70-2	1	mg/L	167	172	2.98	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	32	33	0.00	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	117	119	1.64	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	24	24	0.00	0% - 20%
<b>ED093F: Dissolved Major Cations (QC Lot: 996717)</b>									
EM1709186-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	1240	1250	0.493	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	181	180	0.854	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	6650	6670	0.394	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	537	530	1.20	0% - 20%
EM1709188-007	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	109	106	3.38	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	168	162	3.74	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	1330	1290	3.16	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	20	18	14.3	0% - 20%
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 994604)</b>									
EM1709106-001	GW38_11/07/17	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.003	0.003	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.059	0.058	0.00	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.017	0.017	0.00	0% - 50%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.108	0.107	1.44	0% - 20%
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.02	0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit
		EM1709106-011	GW09_11/07/17	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001
EG020A-F: Arsenic	7440-38-2			0.001	mg/L	<0.001	<0.001	0.00	No Limit
EG020A-F: Chromium	7440-47-3			0.001	mg/L	<0.001	<0.001	0.00	No Limit
EG020A-F: Copper	7440-50-8			0.001	mg/L	<0.001	<0.001	0.00	No Limit





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 994604) - continued</b>									
EM1709106-011	GW09_11/07/17	EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.269	0.280	3.86	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.010	0.010	0.00	0% - 50%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.03	<0.01	90.6	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	9.89	10.2	3.66	0% - 20%
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 996715)</b>									
EM1709106-026	GW54_11/07/17	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.033	0.032	3.13	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.007	0.007	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.554	0.544	1.85	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.012	0.012	0.00	0% - 50%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.008	0.008	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.41	0.37	10.4	0% - 20%
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	2.10	2.09	0.783	0% - 20%
EM1709192-010	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.004	0.005	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.417	0.430	3.07	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	0.002	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.01	<0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	12.9	13.2	2.22	0% - 20%
<b>EG020T: Total Metals by ICP-MS (QC Lot: 994613)</b>									
EM1709106-001	GW38_11/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0002	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.011	0.013	12.7	0% - 50%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.092	0.100	7.67	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.035	0.038	8.34	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.065	0.064	0.00	0% - 20%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.537	0.550	2.38	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.128	0.131	2.35	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.248	0.257	3.61	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	20.9	22.9	9.16	0% - 20%



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020T: Total Metals by ICP-MS (QC Lot: 994613) - continued</b>									
EM1709106-001	GW38_11/07/17	EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	38.2	41.4	8.17	0% - 20%
EM1709106-010	GW05_11/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0031	0.0028	9.29	0% - 20%
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.040	0.041	2.65	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.079	0.083	4.30	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	1.63	1.75	7.36	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	5.15	5.36	3.89	0% - 20%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.717	0.745	3.80	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.466	0.500	6.84	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	2.44	2.56	4.79	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	21.9	22.0	0.618	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-T: Iron	7439-89-6	0.05	mg/L	66.2	67.4	1.84	0% - 20%		
<b>EG020T: Total Metals by ICP-MS (QC Lot: 994614)</b>									
EM1709106-023	GW44_11/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.003	0.003	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.008	0.008	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.003	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.054	0.052	3.51	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.064	0.063	2.74	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.010	0.010	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	1.16	1.23	5.69	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-T: Iron	7439-89-6	0.05	mg/L	2.74	2.62	4.75	0% - 20%		
EM1709168-005	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0002	<0.0002	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.002	<0.002	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.002	<0.002	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.003	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.002	<0.002	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.006	0.007	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.002	<0.002	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.016	0.020	24.1	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.03	0.05	29.9	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.02	<0.02	0.00	No Limit
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit		
<b>EG020T: Total Metals by ICP-MS (QC Lot: 996704)</b>									
EM1709066-038	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)		
<b>EG020T: Total Metals by ICP-MS (QC Lot: 996704) - continued</b>											
EM1709066-038	Anonymous	EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.002	0.002	0.00	No Limit		
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit		
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.03	0.03	0.00	No Limit		
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit		
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit		
EM1709175-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit		
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.616	0.610	1.07	0% - 20%		
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.003	0.003	0.00	No Limit		
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.002	0.002	0.00	No Limit		
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.542	0.533	1.77	0% - 20%		
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.623	0.599	3.88	0% - 20%		
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.02	0.02	0.00	No Limit		
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit		
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit		
		<b>EG020T: Total Metals by ICP-MS (QC Lot: 997181)</b>									
EM1709106-025	QC102_11/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit		
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.004	114	No Limit		
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit		
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.03	87.0	No Limit		
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit		
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.05	0.00	No Limit		
		EM1709206-002	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0006	0.0004	28.9	No Limit
				EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.049	0.047	2.85	0% - 20%
EG020A-T: Chromium	7440-47-3			0.001	mg/L	0.128	0.122	4.57	0% - 20%		
EG020A-T: Copper	7440-50-8			0.001	mg/L	0.339	0.328	3.24	0% - 20%		
EG020A-T: Lead	7439-92-1			0.001	mg/L	0.062	0.060	3.47	0% - 20%		
EG020A-T: Manganese	7439-96-5			0.001	mg/L	1.28	1.24	3.76	0% - 20%		
EG020A-T: Nickel	7440-02-0			0.001	mg/L	0.090	0.090	0.00	0% - 20%		
EG020A-T: Zinc	7440-66-6			0.005	mg/L	0.570	0.559	1.92	0% - 20%		
EG020A-T: Aluminium	7429-90-5			0.01	mg/L	53.4	51.9	2.80	0% - 20%		





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020T: Total Metals by ICP-MS (QC Lot: 997181) - continued</b>									
EM1709206-002	Anonymous	EG020A-T: Selenium	7782-49-2	0.01	mg/L	0.02	0.02	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	77.6	74.5	4.06	0% - 20%
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 994605)</b>									
EM1709106-012	GW03_11/07/17	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709106-001	GW38_11/07/17	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 996716)</b>									
EM1709106-026	GW54_11/07/17	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709192-010	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 996941)</b>									
EM1709001-019	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709106-008	QC304_11/07/17	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 996942)</b>									
EM1709106-021	GW40_11/07/17	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709187-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 999799)</b>									
EM1709009-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EK040P: Fluoride by PC Titrator (QC Lot: 994065)</b>									
EM1709088-010	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	<0.1	0.00	No Limit
EM1709106-006	GW23_11/07/17	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.3	0.2	0.00	No Limit
<b>EK040P: Fluoride by PC Titrator (QC Lot: 994071)</b>									
EM1709107-008	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.7	<0.1	150	No Limit
EM1709106-020	GW39_11/07/17	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.2	0.1	0.00	No Limit
<b>EK040P: Fluoride by PC Titrator (QC Lot: 999216)</b>									
EM1709192-006	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.4	0.4	0.00	No Limit
EM1709192-019	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.4	0.5	0.00	No Limit
<b>EK055G: Ammonia as N by Discrete Analyser (QC Lot: 994091)</b>									
EM1709106-002	GW33_11/07/17	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	7.86	8.44	7.08	0% - 20%
EM1709061-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.38	0.37	0.00	0% - 20%
<b>EK055G: Ammonia as N by Discrete Analyser (QC Lot: 994094)</b>									
EM1709106-014	QC203_11/07/17	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.03	0.02	58.8	No Limit
<b>EK055G: Ammonia as N by Discrete Analyser (QC Lot: 996684)</b>									
EM1709201-003	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.02	0.05	75.8	No Limit
EM1709106-026	GW54_11/07/17	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	6.90	5.02	31.7	0% - 50%
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 993990)</b>									
EM1709088-010	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EM1709106-006	GW23_11/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.01	0.01	0.00	No Limit
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 993994)</b>									
EM1709106-011	GW09_11/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.01	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 993994) - continued</b>										
EM1709106-022	GW50_11/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.02	0.02	0.00	No Limit	
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 996586)</b>										
EM1709163-004	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.04	0.04	0.00	No Limit	
EM1709106-026	GW54_11/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 994093)</b>										
EM1709106-001	GW38_11/07/17	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	2.18	2.11	3.20	0% - 20%	
EM1709106-011	GW09_11/07/17	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.35	0.35	0.00	0% - 20%	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 996683)</b>										
EM1709163-004	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	12.6	12.3	2.31	0% - 20%	
EM1709106-026	GW54_11/07/17	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 993993)</b>										
EM1709106-011	GW09_11/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit	
EM1709106-006	GW23_11/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 996585)</b>										
EM1709192-010	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit	
EM1709106-026	GW54_11/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.05	0.04	35.3	No Limit	
<b>EP005: Total Organic Carbon (TOC) (QC Lot: 1000199)</b>										
EM1709009-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	3	3	0.00	No Limit	
EM1709106-007	GW22_11/07/17	EP005: Total Organic Carbon	----	1	mg/L	23	28	19.5	0% - 20%	
<b>EP005: Total Organic Carbon (TOC) (QC Lot: 1000200)</b>										
EM1709106-022	GW50_11/07/17	EP005: Total Organic Carbon	----	1	mg/L	64	68	5.90	0% - 20%	
EM1709192-006	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	11	11	0.00	0% - 50%	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 993596)</b>										
EM1709106-001	GW38_11/07/17	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit			
EM1709106-012	GW03_11/07/17	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 993596) - continued</b>										
EM1709106-012	GW03_11/07/17	EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit			
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 993599)</b>										
EM1709106-021	GW40_11/07/17	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit			
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit			
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 996244)</b>										
EM1709106-026	GW54_11/07/17	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit			





Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 996244) - continued</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 993596)</b>									
EM1709106-001	GW38_11/07/17	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit
EM1709106-012	GW03_11/07/17	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 993599)</b>									
EM1709106-021	GW40_11/07/17	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 996244)</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 993596)</b>									
EM1709106-001	GW38_11/07/17	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
EM1709106-012	GW03_11/07/17	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 993599)</b>									
EM1709106-021	GW40_11/07/17	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 996244)</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
<b>EP074D: Fumigants (QC Lot: 993596)</b>									
EM1709106-001	GW38_11/07/17	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074D: Fumigants (QC Lot: 993596) - continued</b>									
EM1709106-001	GW38_11/07/17	EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
EM1709106-012	GW03_11/07/17	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
<b>EP074D: Fumigants (QC Lot: 993599)</b>									
EM1709106-021	GW40_11/07/17	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
<b>EP074D: Fumigants (QC Lot: 996244)</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 993596)</b>									
EM1709106-001	GW38_11/07/17	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 993596) - continued</b>									
EM1709106-001	GW38_11/07/17	EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit
EM1709106-012	GW03_11/07/17	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit

**EP074E: Halogenated Aliphatic Compounds (QC Lot: 993599)**





Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 993599) - continued</b>									
EM1709106-021	GW40_11/07/17	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit		
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit		
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit		
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 996244)</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 996244) - continued</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit		
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<5	<5	0.00	No Limit		
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 993596)</b>									
EM1709106-001	GW38_11/07/17	EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
		EM1709106-012	GW03_11/07/17	EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0
EP074-WF: Chlorobenzene	108-90-7			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: Bromobenzene	108-86-1			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 2-Chlorotoluene	95-49-8			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 4-Chlorotoluene	106-43-4			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 1,3-Dichlorobenzene	541-73-1			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 1,2-Dichlorobenzene	95-50-1			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6			1	µg/L	<1	<1	0.00	No Limit
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 993599)</b>									
EM1709106-021	GW40_11/07/17	EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 993599) - continued</b>									
EM1709106-021	GW40_11/07/17	EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 996244)</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: 1.4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 993596)</b>									
EM1709106-001	GW38_11/07/17	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
EM1709106-012	GW03_11/07/17	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 993599)</b>									
EM1709106-021	GW40_11/07/17	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 996244)</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
<b>EP074H: Naphthalene (QC Lot: 993596)</b>									
EM1709106-001	GW38_11/07/17	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit





Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EP074H: Naphthalene (QC Lot: 993596) - continued</b>										
EM1709106-012	GW03_11/07/17	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
<b>EP074H: Naphthalene (QC Lot: 993599)</b>										
EM1709106-021	GW40_11/07/17	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
<b>EP074H: Naphthalene (QC Lot: 996244)</b>										
EM1709106-026	GW54_11/07/17	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 996507)</b>										
EM1709210-005	Anonymous	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.00	No Limit	
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	1	µg/L	<1.0	<1.0	0.00	No Limit	
			205-82-3							
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.00	No Limit	
EP075(SIM): Dibenzo(a,h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.00	No Limit			
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.00	No Limit			
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 993595)</b>										
EM1709106-001	GW38_11/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit	
EM1709106-012	GW03_11/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 993598)</b>										
EM1709106-021	GW40_11/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 996243)</b>										
EM1709106-026	GW54_11/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 996508)</b>										
EM1709210-005	Anonymous	EP071: C15 - C28 Fraction	----	100	µg/L	<100	<100	0.00	No Limit	
		EP071: C10 - C14 Fraction	----	50	µg/L	<50	<50	0.00	No Limit	
		EP071: C29 - C36 Fraction	----	50	µg/L	<50	<50	0.00	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 993595)</b>										
EM1709106-001	GW38_11/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
EM1709106-012	GW03_11/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 993598)</b>										



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 993598) - continued</b>									
EM1709106-021	GW40_11/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 996243)</b>									
EM1709106-026	GW54_11/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 996508)</b>									
EM1709210-005	Anonymous	EP071: >C10 - C16 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: >C16 - C34 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
<b>EP080: BTEXN (QC Lot: 993595)</b>									
EM1709106-001	GW38_11/07/17	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EM1709106-012	GW03_11/07/17	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP080: BTEXN (QC Lot: 993598)</b>									
EM1709106-021	GW40_11/07/17	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP080: BTEXN (QC Lot: 996243)</b>									
EM1709106-026	GW54_11/07/17	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 996762)</b>									



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 996762) - continued</b>									
EB1714168-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.24	0.24	0.00	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
ES1717106-006	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 996762)</b>									
EB1714168-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.14	0.14	0.00	0% - 50%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.04	0.04	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.03	0.03	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		ES1717106-006	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3			0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4			0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9			0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluorononanoic acid (PFNA)	375-95-1			0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2			0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8			0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1			0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8			0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7			0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4			0.1	µg/L	<0.1	<0.1	0.00	No Limit
<b>EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 996762)</b>									
EB1714168-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	0.04	0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 996762) - continued</b>									
EB1714168-001	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
ES1717106-006	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 996762)</b>									
EB1714168-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
ES1717106-006	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231P: PFAS Sums (QC Lot: 996762)</b>									

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 Client : AECOM Australia Pty Ltd  
 Project : 60537182



Sub-Matrix: **WATER**

				<i>Laboratory Duplicate (DUP) Report</i>					
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>LOR</i>	<i>Unit</i>	<i>Original Result</i>	<i>Duplicate Result</i>	<i>RPD (%)</i>	<i>Recovery Limits (%)</i>
<b>EP231P: PFAS Sums (QC Lot: 996762) - continued</b>									
EB1714168-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.49	0.50	2.02	0% - 20%
ES1717106-006	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit



### Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 993900)</b>									
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	100	95	105	
				<10	293 mg/L	96.9	95	105	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 993905)</b>									
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	101	95	105	
				<10	293 mg/L	105	95	105	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 996492)</b>									
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	101	95	105	
				<10	293 mg/L	97.6	95	105	
<b>ED037P: Alkalinity by PC Titrator (QCLot: 994066)</b>									
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	90.6	88	109	
<b>ED037P: Alkalinity by PC Titrator (QCLot: 994072)</b>									
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	97.6	88	109	
<b>ED037P: Alkalinity by PC Titrator (QCLot: 999215)</b>									
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	95.6	88	109	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 993991)</b>									
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	109	92	115	
				<1	100 mg/L	104	92	115	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 993995)</b>									
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	109	92	115	
				<1	100 mg/L	105	92	115	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 996588)</b>									
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	111	92	115	
				<1	100 mg/L	103	92	115	
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 996723)</b>									
ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	<1	500 mg/L	113	82	122	
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 996724)</b>									
ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	<1	500 mg/L	122	82	122	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 993992)</b>									
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	108	88	118	
				<1	1000 mg/L	106	88	118	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 993996)</b>									
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	109	88	118	
				<1	1000 mg/L	106	88	118	





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 996587)</b>									
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	113	88	118	
				<1	1000 mg/L	103	88	118	
<b>ED093F: Dissolved Major Cations (QCLot: 994606)</b>									
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	109	93	110	
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	108	91	110	
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	102	90	109	
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	102	89	109	
<b>ED093F: Dissolved Major Cations (QCLot: 996717)</b>									
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	103	93	110	
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	103	91	110	
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	107	90	109	
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	106	89	109	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 994604)</b>									
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	101	93	105	
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	97.7	91	107	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	102	84	104	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	96.3	83	103	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	94.2	82	103	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	98.0	83	105	
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	98.0	83	105	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.7	82	106	
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	96.8	82	109	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	97.0	85	109	
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	98.1	94	106	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 996715)</b>									
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	98.0	93	105	
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	96.3	91	107	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	92.9	84	104	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	90.8	83	103	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	93.3	82	103	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	92.2	83	105	
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	91.8	83	105	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	93.9	82	106	
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	91.8	82	109	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	97.1	85	109	
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	99.5	94	106	
<b>EG020T: Total Metals by ICP-MS (QCLot: 994613)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	106	80	120	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EG020T: Total Metals by ICP-MS (QCLot: 994613) - continued</b>									
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	102	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.3	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	98.9	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	97.4	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	101	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	101	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	101	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	101	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	100	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	101	80	120	
<b>EG020T: Total Metals by ICP-MS (QCLot: 994614)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	102	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	102	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.4	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	102	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	101	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	101	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	103	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	106	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	102	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	99.7	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	104	80	120	
<b>EG020T: Total Metals by ICP-MS (QCLot: 996704)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	99.4	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	101	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	98.3	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	95.7	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	97.8	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	100	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	100	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	96.4	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	94.8	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	99.2	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	99.1	80	120	
<b>EG020T: Total Metals by ICP-MS (QCLot: 997181)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	96.2	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	104	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	92.4	86	111	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EG020T: Total Metals by ICP-MS (QCLot: 997181) - continued</b>									
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	102	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	99.1	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	95.2	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	99.9	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	98.6	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	94.0	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	100	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	108	80	120	
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 994605)</b>									
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	87.4	81	114	
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 996716)</b>									
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	94.4	81	114	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 996941)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	84.7	81	114	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 996942)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	85.4	81	114	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 999799)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	93.7	81	114	
<b>EK040P: Fluoride by PC Titrator (QCLot: 994065)</b>									
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	107	85	112	
<b>EK040P: Fluoride by PC Titrator (QCLot: 994071)</b>									
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	108	85	112	
<b>EK040P: Fluoride by PC Titrator (QCLot: 999216)</b>									
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	92.4	85	112	
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 994091)</b>									
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	102	80	115	
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 994094)</b>									
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	95.2	80	115	
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 996684)</b>									
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	105	80	115	
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 993990)</b>									
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	95.8	94	107	
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 993994)</b>									
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	105	94	107	
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 996586)</b>									
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	102	94	107	





Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 994093)</b>									
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	110	89	114	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 996683)</b>									
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	109	89	114	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 993993)</b>									
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	102	94	108	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 996585)</b>									
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	104	94	108	
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1000199)</b>									
EP005: Total Organic Carbon	----	1	mg/L	<1	100 mg/L	92.9	81	109	
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1000200)</b>									
EP005: Total Organic Carbon	----	1	mg/L	<1	100 mg/L	94.0	81	109	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1031120)</b>									
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	98.7	81	119	
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	97.4	84	117	
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	97.1	83	114	
EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	40 µg/L	96.4	81	116	
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	101	82	118	
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	98.9	85	115	
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	95.8	81	113	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	93.9	76	111	
EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	92.8	79	109	
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	93.6	77	111	
EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	91.6	79	108	
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	95.6	80	110	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	90.0	75	111	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	86.2	68	111	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 993596)</b>									
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	98.7	81	119	
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	97.4	84	117	
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	97.1	83	114	
EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	40 µg/L	96.4	81	116	
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	101	82	118	
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	98.9	85	115	
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	95.8	81	113	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	93.9	76	111	
EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	92.8	79	109	



Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 993596) - continued</b>									
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	93.6	77	111	
EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	91.6	79	108	
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	95.6	80	110	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	90.0	75	111	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	86.2	68	111	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 993599)</b>									
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	92.0	81	119	
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	92.5	84	117	
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	90.6	83	114	
EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	40 µg/L	90.0	81	116	
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	95.5	82	118	
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	93.5	85	115	
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	89.5	81	113	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	88.1	76	111	
EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	87.4	79	109	
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	87.2	77	111	
EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	87.1	79	108	
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	89.8	80	110	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	85.9	75	111	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	81.4	68	111	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 996244)</b>									
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	98.5	81	119	
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	99.6	84	117	
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	98.5	83	114	
EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	40 µg/L	97.9	81	116	
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	100	82	118	
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	99.6	85	115	
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	99.1	81	113	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	94.7	76	111	
EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	94.1	79	109	
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	96.9	77	111	
EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	92.3	79	108	
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	95.6	80	110	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	93.4	75	111	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	89.2	68	111	
<b>EP074B: Oxygenated Compounds (QCLot: 1031120)</b>									



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP074B: Oxygenated Compounds (QCLot: 1031120) - continued</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	78.8	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	101	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	97.3	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	113	73	128	
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	101	75	129	
<b>EP074B: Oxygenated Compounds (QCLot: 993596)</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	78.8	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	101	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	97.3	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	113	73	128	
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	101	75	129	
<b>EP074B: Oxygenated Compounds (QCLot: 993599)</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	80.3	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	93.8	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	96.2	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	109	73	128	
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	99.7	75	129	
<b>EP074B: Oxygenated Compounds (QCLot: 996244)</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	108	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	92.6	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	105	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	101	73	128	
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	105	75	129	
<b>EP074C: Sulfonated Compounds (QCLot: 1031120)</b>									
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	92.5	64	119	
<b>EP074C: Sulfonated Compounds (QCLot: 993596)</b>									
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	92.5	64	119	
<b>EP074C: Sulfonated Compounds (QCLot: 993599)</b>									
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	82.4	64	119	
<b>EP074C: Sulfonated Compounds (QCLot: 996244)</b>									
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	91.9	64	119	
<b>EP074D: Fumigants (QCLot: 1031120)</b>									
EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	94.5	74	117	
EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	98.3	83	118	
EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	96.0	74	109	
EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	98.6	70	109	
EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	97.6	81	116	





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074D: Fumigants (QCLot: 993596)</b>									
EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	94.5	74	117	
EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	98.3	83	118	
EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	96.0	74	109	
EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	98.6	70	109	
EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	97.6	81	116	
<b>EP074D: Fumigants (QCLot: 993599)</b>									
EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	82.6	74	117	
EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	93.2	83	118	
EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	89.4	74	109	
EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	92.5	70	109	
EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	96.7	81	116	
<b>EP074D: Fumigants (QCLot: 996244)</b>									
EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	94.2	74	117	
EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	96.7	83	118	
EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	90.2	74	109	
EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	89.7	70	109	
EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	97.2	81	116	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1031120)</b>									
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	105	61	137	
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	106	66	137	
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	99.4	67	135	
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	93.8	52	128	
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	88.8	76	125	
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	95.6	74	123	
EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	94.9	75	120	
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	67.5	37	120	
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	20 µg/L	118	72	159	
EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	94.7	78	117	
EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	97.0	81	118	
EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	96.5	83	118	
EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	94.9	76	115	
EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	94.4	75	117	
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	90.2	72	111	
EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	101	81	120	
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	87.4	78	116	
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	99.5	79	116	
EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	98.3	85	119	
EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	102	85	119	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1031120) - continued</b>									
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	92.1	76	120	
EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	93.1	78	110	
EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	114	64	118	
EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	102	51	113	
EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	104	85	121	
EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	106	84	118	
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	89.8	64	109	
EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	101	65	115	
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	91.0	70	121	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 993596)</b>									
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	105	61	137	
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	106	66	137	
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	99.4	67	135	
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	93.8	52	128	
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	88.8	76	125	
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	95.6	74	123	
EP074-WF: 1.1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	94.9	75	120	
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	67.5	37	120	
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	20 µg/L	118	72	159	
EP074-WF: trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	94.7	78	117	
EP074-WF: 1.1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	97.0	81	118	
EP074-WF: cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	96.5	83	118	
EP074-WF: 1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	94.9	76	115	
EP074-WF: 1.1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	94.4	75	117	
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	90.2	72	111	
EP074-WF: 1.2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	101	81	120	
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	87.4	78	116	
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	99.5	79	116	
EP074-WF: 1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	98.3	85	119	
EP074-WF: 1.3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	102	85	119	
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	92.1	76	120	
EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	93.1	78	110	
EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	114	64	118	
EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	102	51	113	
EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	104	85	121	
EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	106	84	118	
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	89.8	64	109	
EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	101	65	115	
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	91.0	70	121	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 993599)</b>									
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	86.1	61	137	
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	91.4	66	137	
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	82.7	67	135	
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	78.3	52	128	
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	78.7	76	125	
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	86.1	74	123	
EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	86.7	75	120	
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	61.8	37	120	
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	20 µg/L	107	72	159	
EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	87.2	78	117	
EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	89.9	81	118	
EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	90.3	83	118	
EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	87.6	76	115	
EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	87.3	75	117	
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	82.3	72	111	
EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	96.3	81	120	
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	80.5	78	116	
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	96.5	79	116	
EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	95.2	85	119	
EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	97.3	85	119	
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	87.9	76	120	
EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	87.4	78	110	
EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	103	64	118	
EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	92.5	51	113	
EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	98.8	85	121	
EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	100	84	118	
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	81.3	64	109	
EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	97.9	65	115	
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	83.6	70	121	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 996244)</b>									
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	98.9	61	137	
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	86.1	66	137	
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	92.7	67	135	
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	74.1	52	128	
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	87.8	76	125	
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	98.7	74	123	
EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	101	75	120	
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	40.8	37	120	
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	20 µg/L	110	72	159	





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 996244) - continued</b>									
EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	99.6	78	117	
EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	101	81	118	
EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	100	83	118	
EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	96.6	76	115	
EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	96.5	75	117	
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	91.0	72	111	
EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	100	81	120	
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	90.2	78	116	
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	98.0	79	116	
EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	99.2	85	119	
EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	100.0	85	119	
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	93.0	76	120	
EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	92.5	78	110	
EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	93.0	64	118	
EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	84.2	51	113	
EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	101	85	121	
EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	103	84	118	
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	86.8	64	109	
EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	89.5	65	115	
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	88.6	70	121	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 1031120)</b>									
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	99.1	85	115	
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	87.8	82	116	
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	95.5	81	112	
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	94.6	80	110	
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	92.4	80	110	
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	92.9	80	112	
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	97.2	84	111	
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	85.7	70	114	
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	92.0	78	116	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 993596)</b>									
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	99.1	85	115	
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	87.8	82	116	
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	95.5	81	112	
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	94.6	80	110	
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	92.4	80	110	
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	92.9	80	112	
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	97.2	84	111	
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	85.7	70	114	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 993596) - continued</b>									
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	92.0	78	116	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 993599)</b>									
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	93.1	85	115	
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	84.9	82	116	
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	90.6	81	112	
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	89.6	80	110	
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	86.4	80	110	
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	88.8	80	112	
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	91.4	84	111	
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	82.0	70	114	
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	89.0	78	116	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 996244)</b>									
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	99.6	85	115	
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	87.6	82	116	
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	95.3	81	112	
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	94.1	80	110	
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	91.8	80	110	
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	92.3	80	112	
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	94.3	84	111	
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	82.6	70	114	
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	88.9	78	116	
<b>EP074G: Trihalomethanes (QCLot: 1031120)</b>									
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	95.3	82	118	
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	95.7	75	112	
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	89.9	73	108	
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	91.8	68	107	
<b>EP074G: Trihalomethanes (QCLot: 993596)</b>									
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	95.3	82	118	
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	95.7	75	112	
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	89.9	73	108	
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	91.8	68	107	
<b>EP074G: Trihalomethanes (QCLot: 993599)</b>									
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	89.8	82	118	
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	89.6	75	112	
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	84.3	73	108	
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	84.4	68	107	
<b>EP074G: Trihalomethanes (QCLot: 996244)</b>									
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	101	82	118	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074G: Trihalomethanes (QCLot: 996244) - continued</b>									
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	90.2	75	112	
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	85.7	73	108	
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	82.7	68	107	
<b>EP074H: Naphthalene (QCLot: 1031120)</b>									
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	99.3	80	116	
<b>EP074H: Naphthalene (QCLot: 993596)</b>									
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	99.3	80	116	
<b>EP074H: Naphthalene (QCLot: 993599)</b>									
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	96.2	80	116	
<b>EP074H: Naphthalene (QCLot: 996244)</b>									
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	95.4	80	116	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 993928)</b>									
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	79.2	39	110	
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	79.0	40	124	
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	82.5	47	117	
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	83.6	51	118	
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	86.9	53	119	
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	63.3	51	113	
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	87.2	59	123	
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	86.4	58	123	
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	78.1	52	126	
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	84.3	55	123	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	84.2	52	131	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	89.5	57	126	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	83.5	56	126	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	89.9	53	123	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	88.8	53	125	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	88.4	53	125	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 993929)</b>									
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	93.4	39	110	
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	91.1	40	124	
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	98.2	47	117	
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	102	51	118	
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	99.9	53	119	
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	68.5	51	113	
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	103	59	123	
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	101	58	123	





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 993929) - continued</b>									
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	94.4	52	126	
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	103	55	123	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	98.3	52	131	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	104	57	126	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	94.6	56	126	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	99.5	53	123	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	99.8	53	125	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	103	53	125	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 996507)</b>									
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	82.7	39	110	
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	86.2	40	124	
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	87.9	47	117	
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	89.4	51	118	
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	92.0	53	119	
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	65.8	51	113	
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	94.0	59	123	
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	95.0	58	123	
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	91.4	52	126	
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	98.0	55	123	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	96.4	52	131	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	101	57	126	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	92.2	56	126	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	93.6	53	123	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	93.1	53	125	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	94.8	53	125	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 993595)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	88.5	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 993598)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	86.4	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 993927)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	101	53	123	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	100	57	133	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	90.9	55	141	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 993930)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	89.8	53	123	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	91.1	57	133	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 993930) - continued</b>									
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	82.7	55	141	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996243)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	95.0	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996508)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	87.8	53	123	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	86.0	57	133	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	77.2	55	141	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 993595)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	87.5	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 993598)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	84.4	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 993927)</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	98.2	54	122	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	93.4	56	132	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	96.5	51	137	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 993930)</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	88.8	54	122	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	85.8	56	132	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	88.3	51	137	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996243)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	94.3	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996508)</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	67.6	54	122	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	80.9	56	132	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	83.5	51	137	
<b>EP080: BTEXN (QCLot: 993595)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	96.8	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	94.8	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	93.4	72	124	
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	91.9	72	130	
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	96.5	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	94.0	71	129	
<b>EP080: BTEXN (QCLot: 993598)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	92.6	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	92.3	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	91.6	72	124	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP080: BTEXN (QCLot: 993598) - continued</b>									
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	89.9	72	130	
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	93.4	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	99.2	71	129	
<b>EP080: BTEXN (QCLot: 996243)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	97.1	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	98.3	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	95.3	72	124	
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	94.8	72	130	
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	98.0	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	99.2	71	129	
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 996762)</b>									
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.5 µg/L	82.4	70	130	
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.5 µg/L	91.8	70	130	
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.5 µg/L	103	70	130	
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.5 µg/L	113	70	130	
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.5 µg/L	111	70	130	
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	111	70	130	
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 996762)</b>									
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	2.5 µg/L	92.6	70	130	
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	87.6	70	130	
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	97.2	70	130	
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	101	70	130	
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	111	70	130	
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	116	70	130	
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	113	70	130	
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	114	70	130	
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	113	70	130	
EP231X: Perfluorotridecanoic acid (PFTriDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	127	70	130	
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	132	70	150	
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 996762)</b>									
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	130	70	130	
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	106	70	150	
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	123	70	150	
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	1.25 µg/L	107	70	150	





Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 996762) - continued</b>								
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	111	70	150
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	92.6	70	130
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	102	70	130
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 996762)</b>								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.5 µg/L	98.2	70	130
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.5 µg/L	130	70	130
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.5 µg/L	127	70	130
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.5 µg/L	126	70	130

### Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
				Concentration	MS	Low	High
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 993991)</b>							
EM1709099-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	85.3	70	130
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 993995)</b>							
EM1709106-023	GW44_11/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70	130
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 996588)</b>							
EM1709162-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	73.6	70	130
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 996723)</b>							
EM1709106-002	GW33_11/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	500 mg/L	114	70	130
<b>ED045G: Chloride by Discrete Analyser (QCLot: 993992)</b>							
EM1709099-001	Anonymous	ED045G: Chloride	16887-00-6	400 mg/L	97.4	70	130
<b>ED045G: Chloride by Discrete Analyser (QCLot: 993996)</b>							
EM1709106-023	GW44_11/07/17	ED045G: Chloride	16887-00-6	400 mg/L	# Not Determined	70	130
<b>ED045G: Chloride by Discrete Analyser (QCLot: 996587)</b>							
EM1709162-001	Anonymous	ED045G: Chloride	16887-00-6	400 mg/L	85.6	70	130
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 994604)</b>							



Sub-Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Concentration	Spike Recovery(%) MS	Recovery Limits (%) Low High	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 994604) - continued</b>							
EM1709106-001	GW38_11/07/17	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	108	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	111	81	133
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	103	71	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	104	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	104	75	133
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	104	64	134
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	104	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	105	75	131
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 996715)</b>							
EM1709106-026	GW54_11/07/17	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	103	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	97.3	81	133
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	96.5	71	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	95.7	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	95.2	75	133
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	80.0	64	134
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	98.5	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	97.0	75	131
<b>EG020T: Total Metals by ICP-MS (QCLot: 994613)</b>							
EM1709106-001	GW38_11/07/17	EG020A-T: Arsenic	7440-38-2	1 mg/L	98.1	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	93.5	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	95.5	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	97.7	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	101	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	96.7	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	102	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	98.7	74	116
<b>EG020T: Total Metals by ICP-MS (QCLot: 994614)</b>							
EM1709106-023	GW44_11/07/17	EG020A-T: Arsenic	7440-38-2	1 mg/L	109	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	92.2	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	98.6	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	101	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	103	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	98.1	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	104	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	96.0	74	116
<b>EG020T: Total Metals by ICP-MS (QCLot: 996704)</b>							
EM1709066-038	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	91.9	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	88.5	75	129



Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EG020T: Total Metals by ICP-MS (QCLot: 996704) - continued</b>							
EM1709066-038	Anonymous	EG020A-T: Chromium	7440-47-3	1 mg/L	89.4	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	88.7	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	93.2	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	90.4	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	89.5	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	88.5	74	116
<b>EG020T: Total Metals by ICP-MS (QCLot: 997181)</b>							
EM1709106-025	QC102_11/07/17	EG020A-T: Arsenic	7440-38-2	1 mg/L	103	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	97.2	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	101	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	101	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	102	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	97.8	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	104	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	102	74	116
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 994605)</b>							
EM1709106-003	GW36_11/07/17	EG035F: Mercury	7439-97-6	0.01 mg/L	87.3	70	120
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 996716)</b>							
EM1709191-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	84.8	70	120
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 996941)</b>							
EM1709099-001	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	85.2	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 996942)</b>							
EM1709106-022	GW50_11/07/17	EG035T: Mercury	7439-97-6	0.01 mg/L	85.8	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 999799)</b>							
EM1709009-002	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	84.4	70	130
<b>EK040P: Fluoride by PC Titrator (QCLot: 994065)</b>							
EM1709088-004	Anonymous	EK040P: Fluoride	16984-48-8	5 mg/L	94.0	70	130
<b>EK040P: Fluoride by PC Titrator (QCLot: 994071)</b>							
EM1709106-012	GW03_11/07/17	EK040P: Fluoride	16984-48-8	5 mg/L	108	70	130
<b>EK040P: Fluoride by PC Titrator (QCLot: 999216)</b>							
EM1709192-001	Anonymous	EK040P: Fluoride	16984-48-8	5 mg/L	95.2	70	130
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 994091)</b>							
EM1709088-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	102	70	130
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 994094)</b>							
EM1709106-015	GW11_11/07/17	EK055G: Ammonia as N	7664-41-7	1 mg/L	118	70	130





Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 996684)</b>							
EM1709162-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	83.2	70	130
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 993990)</b>							
EM1709106-002	GW33_11/07/17	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	96.1	80	114
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 993994)</b>							
EM1709106-012	GW03_11/07/17	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	94.6	80	114
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 996586)</b>							
EM1709161-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	110	80	114
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 994093)</b>							
EM1709106-002	GW33_11/07/17	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	106	70	130
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 993993)</b>							
EM1709106-002	GW33_11/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	102	79	123
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 996585)</b>							
EM1709191-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	102	79	123
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1000199)</b>							
EM1709009-002	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	94.0	80	114
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1000200)</b>							
EM1709106-023	GW44_11/07/17	EP005: Total Organic Carbon	----	100 mg/L	95.0	80	114
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 993596)</b>							
EM1709106-002	GW33_11/07/17	EP074-WF: Benzene	71-43-2	20 µg/L	99.9	76	128
		EP074-WF: Toluene	108-88-3	20 µg/L	98.9	72	132
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 993599)</b>							
EM1709106-022	GW50_11/07/17	EP074-WF: Benzene	71-43-2	20 µg/L	114	76	128
		EP074-WF: Toluene	108-88-3	20 µg/L	115	72	132
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 996244)</b>							
EM1709191-001	Anonymous	EP074-WF: Benzene	71-43-2	20 µg/L	94.5	76	128
		EP074-WF: Toluene	108-88-3	20 µg/L	97.6	72	132
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 993596)</b>							
EM1709106-002	GW33_11/07/17	EP074-WF: 1,1-Dichloroethene	75-35-4	20 µg/L	100	63	129
		EP074-WF: Trichloroethene	79-01-6	20 µg/L	86.0	64	126
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 993599)</b>							
EM1709106-022	GW50_11/07/17	EP074-WF: 1,1-Dichloroethene	75-35-4	20 µg/L	# 122	63	129
		EP074-WF: Trichloroethene	79-01-6	20 µg/L	96.6	64	126
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 996244)</b>							
EM1709191-001	Anonymous	EP074-WF: 1,1-Dichloroethene	75-35-4	20 µg/L	99.0	63	129



Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 996244) - continued</b>							
EM1709191-001	Anonymous	EP074-WF: Trichloroethene	79-01-6	20 µg/L	81.0	64	126
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 993596)</b>							
EM1709106-002	GW33_11/07/17	EP074-WF: Chlorobenzene	108-90-7	20 µg/L	101	81	119
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 993599)</b>							
EM1709106-022	GW50_11/07/17	EP074-WF: Chlorobenzene	108-90-7	20 µg/L	95.7	81	119
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 996244)</b>							
EM1709191-001	Anonymous	EP074-WF: Chlorobenzene	108-90-7	20 µg/L	95.8	81	119
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 996507)</b>							
EM1709210-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	5 µg/L	94.8	42	122
		EP075(SIM): Pyrene	129-00-0	5 µg/L	98.5	40	136
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 993595)</b>							
EM1709106-002	GW33_11/07/17	EP080: C6 - C9 Fraction	----	280 µg/L	75.1	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 993598)</b>							
EM1709106-022	GW50_11/07/17	EP080: C6 - C9 Fraction	----	280 µg/L	83.5	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996243)</b>							
EM1709191-001	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	67.7	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996508)</b>							
EM1709210-003	Anonymous	EP071: C10 - C14 Fraction	----	3368 µg/L	100	50	130
		EP071: C15 - C28 Fraction	----	14735 µg/L	98.9	54	136
		EP071: C29 - C36 Fraction	----	7856 µg/L	89.3	50	142
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 993595)</b>							
EM1709106-002	GW33_11/07/17	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	73.8	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 993598)</b>							
EM1709106-022	GW50_11/07/17	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	79.7	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996243)</b>							
EM1709191-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	67.8	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996508)</b>							
EM1709210-003	Anonymous	EP071: >C10 - C16 Fraction	----	5225 µg/L	97.3	50	128
		EP071: >C16 - C34 Fraction	----	19994 µg/L	93.0	50	150
		EP071: >C34 - C40 Fraction	----	1449 µg/L	96.8	51	159
<b>EP080: BTEXN (QCLot: 993595)</b>							
EM1709106-002	GW33_11/07/17	EP080: Benzene	71-43-2	20 µg/L	98.7	68	130
		EP080: Toluene	108-88-3	20 µg/L	94.4	72	132
<b>EP080: BTEXN (QCLot: 993598)</b>							



Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EP080: BTEXN (QCLot: 993598) - continued</b>							
EM1709106-022	GW50_11/07/17	EP080: Benzene	71-43-2	20 µg/L	113	68	130
		EP080: Toluene	108-88-3	20 µg/L	110	72	132
<b>EP080: BTEXN (QCLot: 996243)</b>							
EM1709191-001	Anonymous	EP080: Benzene	71-43-2	20 µg/L	91.2	68	130
		EP080: Toluene	108-88-3	20 µg/L	92.0	72	132
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 996762)</b>							
EB1714168-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.5 µg/L	102	50	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.5 µg/L	110	50	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.5 µg/L	110	50	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.5 µg/L	118	50	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	119	50	130
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.5 µg/L	125	50	130
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 996762)</b>							
EB1714168-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	91.8	50	130
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	108	50	130
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	106	50	130
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	120	50	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	117	50	130
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	117	50	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	120	50	130
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	128	50	130
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	125	50	130
		EP231X: Perfluorotridecanoic acid (PFTTrDA)	72629-94-8	0.5 µg/L	121	50	130
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	108	50	150
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 996762)</b>							
EB1714168-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	117	50	130
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	123	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	122	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	1.25 µg/L	117	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	117	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	109	50	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	130	50	130
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 996762)</b>							





Sub-Matrix: **WATER**

				<i>Matrix Spike (MS) Report</i>			
				<i>Spike</i>	<i>SpikeRecovery(%)</i>	<i>Recovery Limits (%)</i>	
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Concentration</i>	<i>MS</i>	<i>Low</i>	<i>High</i>
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 996762) - continued</b>							
EB1714168-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.5 µg/L	121	50	130
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.5 µg/L	117	50	130
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.5 µg/L	109	50	130
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.5 µg/L	120	50	130

## QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM1709106	Page	: 1 of 22
Amendment	: 1		
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: MS AVERYLL COYNE	Telephone	: +61-3-8549 9608
Project	: 60537182	Date Samples Received	: 12-Jul-2017
Site	: ----	Issue Date	: 03-Aug-2017
Sampler	: BH, BP, JM	No. of samples received	: 28
Order number	: Task 3.2	No. of samples analysed	: 26

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

### Summary of Outliers

#### Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

#### Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

#### Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



### Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: WATER

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
<b>Matrix Spike (MS) Recoveries</b>							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	EM1709106--023	GW44_11/07/17	Sulfate as SO4 - Turbidimetric	14808-79-8	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
ED045G: Chloride by Discrete Analyser	EM1709106--023	GW44_11/07/17	Chloride	16887-00-6	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EP074E: Halogenated Aliphatic Compounds	EM1709106--022	GW50_11/07/17	1.1-Dichloroethene	75-35-4	122 %	63-129%	Recovery greater than upper control limit

### Outliers : Analysis Holding Time Compliance

Matrix: WATER

Method	Extraction / Preparation			Analysis			
	Container / Client Sample ID(s)	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EA005P: pH by PC Titrator</b>							
<b>Clear Plastic Bottle - Natural</b>							
GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	----	----	----	13-Jul-2017	11-Jul-2017	2
<b>Clear Plastic Bottle - Natural</b>							
GW54_11/07/17		----	----	----	17-Jul-2017	11-Jul-2017	6
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>							
<b>Amber VOC Vial - Sulfuric Acid</b>							
GW29_11/07/17		02-Aug-2017	25-Jul-2017	8	02-Aug-2017	25-Jul-2017	8
<b>EP074B: Oxygenated Compounds</b>							
<b>Amber VOC Vial - Sulfuric Acid</b>							
GW29_11/07/17		02-Aug-2017	25-Jul-2017	8	02-Aug-2017	25-Jul-2017	8
<b>EP074C: Sulfonated Compounds</b>							
<b>Amber VOC Vial - Sulfuric Acid</b>							
GW29_11/07/17		02-Aug-2017	25-Jul-2017	8	02-Aug-2017	25-Jul-2017	8
<b>EP074D: Fumigants</b>							
<b>Amber VOC Vial - Sulfuric Acid</b>							
GW29_11/07/17		02-Aug-2017	25-Jul-2017	8	02-Aug-2017	25-Jul-2017	8





Matrix: **WATER**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EP074E: Halogenated Aliphatic Compounds</b>						
Amber VOC Vial - Sulfuric Acid GW29_11/07/17	02-Aug-2017	25-Jul-2017	8	02-Aug-2017	25-Jul-2017	8
<b>EP074F: Halogenated Aromatic Compounds</b>						
Amber VOC Vial - Sulfuric Acid GW29_11/07/17	02-Aug-2017	25-Jul-2017	8	02-Aug-2017	25-Jul-2017	8
<b>EP074G: Trihalomethanes</b>						
Amber VOC Vial - Sulfuric Acid GW29_11/07/17	02-Aug-2017	25-Jul-2017	8	02-Aug-2017	25-Jul-2017	8
<b>EP074H: Naphthalene</b>						
Amber VOC Vial - Sulfuric Acid GW29_11/07/17	02-Aug-2017	25-Jul-2017	8	02-Aug-2017	25-Jul-2017	8

**Outliers : Frequency of Quality Control Samples**

Matrix: **WATER**

Quality Control Sample Type Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
<b>Laboratory Duplicates (DUP)</b>					
PAH/Phenols (GC/MS - SIM)	1	38	2.63	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	1	58	1.72	10.00	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>					
Nitrite and Nitrate as N (NOx) by Discrete Analyser	1	32	3.13	5.00	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	1	38	2.63	5.00	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	1	21	4.76	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	1	58	1.72	5.00	NEPM 2013 B3 & ALS QC Standard

**Analysis Holding Time Compliance**

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation



Matrix: WATER

Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EA005P: pH by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural (EA005-P)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	11-Jul-2017	✘
<b>Clear Plastic Bottle - Natural (EA005-P)</b> GW54_11/07/17		11-Jul-2017	----	----	----	17-Jul-2017	11-Jul-2017	✘
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>								
<b>Clear Plastic Bottle - Natural (EA015H)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	18-Jul-2017	✔
<b>Clear Plastic Bottle - Natural (EA015H)</b> GW54_11/07/17		11-Jul-2017	----	----	----	14-Jul-2017	18-Jul-2017	✔
<b>ED037P: Alkalinity by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural (ED037-P)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	25-Jul-2017	✔
<b>Clear Plastic Bottle - Natural (ED037-P)</b> GW54_11/07/17		11-Jul-2017	----	----	----	17-Jul-2017	25-Jul-2017	✔



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>								
<b>Clear Plastic Bottle - Natural (ED041G)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	08-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (ED041G)</b> GW54_11/07/17		11-Jul-2017	----	----	----	14-Jul-2017	08-Aug-2017	✓
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>								
<b>Clear Plastic Bottle - Natural (ED043)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17, GW54_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	14-Jul-2017	08-Aug-2017	✓	14-Jul-2017	08-Aug-2017	✓
<b>ED045G: Chloride by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Natural (ED045G)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	08-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (ED045G)</b> GW54_11/07/17		11-Jul-2017	----	----	----	14-Jul-2017	08-Aug-2017	✓





Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>ED093F: Dissolved Major Cations</b>								
<b>Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17, GW54_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	17-Jul-2017	08-Aug-2017	✓
<b>EG020F: Dissolved Metals by ICP-MS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	07-Jan-2018	✓
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)</b> GW54_11/07/17		11-Jul-2017	----	----	----	14-Jul-2017	07-Jan-2018	✓
<b>EG020T: Total Metals by ICP-MS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, QC202_11/07/17, GW40_11/07/17, GW44_11/07/17, GW54_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, QC304_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	14-Jul-2017	07-Jan-2018	✓	14-Jul-2017	07-Jan-2018	✓
<b>Clear Plastic Bottle - Nitric Acid; Unspecified (EG020A-T)</b> QC102_11/07/17		11-Jul-2017	17-Jul-2017	07-Jan-2018	✓	17-Jul-2017	07-Jan-2018	✓



Matrix: WATER

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EG035F: Dissolved Mercury by FIMS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)</b> GW38_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	11-Jul-2017	----	----	----	14-Jul-2017	08-Aug-2017	✓
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)</b> GW54_11/07/17		11-Jul-2017	----	----	----	17-Jul-2017	08-Aug-2017	✓
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)</b> GW38_11/07/17, GW37_11/07/17, GW23_11/07/17, QC304_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, QC202_11/07/17, GW40_11/07/17, GW44_11/07/17, GW54_11/07/17	11-Jul-2017	----	----	----	17-Jul-2017	08-Aug-2017	✓
<b>Clear Plastic Bottle - Nitric Acid; Unspecified (EG035T)</b> QC102_11/07/17		11-Jul-2017	----	----	----	17-Jul-2017	08-Aug-2017	✓
<b>EK040P: Fluoride by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural (EK040P)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	08-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (EK040P)</b> GW54_11/07/17		11-Jul-2017	----	----	----	17-Jul-2017	08-Aug-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EK055G: Ammonia as N by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Sulfuric Acid (EK055G)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	08-Aug-2017	✓
<b>Clear Plastic Bottle - Sulfuric Acid (EK055G)</b> GW54_11/07/17		11-Jul-2017	----	----	----	17-Jul-2017	08-Aug-2017	✓
<b>EK057G: Nitrite as N by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Natural (EK057G)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17, GW54_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	13-Jul-2017	✓
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Sulfuric Acid (EK059G)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	08-Aug-2017	✓
<b>Clear Plastic Bottle - Sulfuric Acid (EK059G)</b> GW54_11/07/17		11-Jul-2017	----	----	----	14-Jul-2017	08-Aug-2017	✓





Matrix: WATER

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>								
<b>Clear Plastic Bottle - Natural (EK071G)</b>								
GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17, GW54_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	13-Jul-2017	✓
<b>EP005: Total Organic Carbon (TOC)</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP005)</b>								
GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17, GW54_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	17-Jul-2017	08-Aug-2017	✓
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b>								
GW29_11/07/17		11-Jul-2017	02-Aug-2017	25-Jul-2017	*	02-Aug-2017	25-Jul-2017	*
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b>								
GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	11-Jul-2017	13-Jul-2017	25-Jul-2017	✓	13-Jul-2017	25-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b>								
GW54_11/07/17		11-Jul-2017	14-Jul-2017	25-Jul-2017	✓	14-Jul-2017	25-Jul-2017	✓



Matrix: **WATER** Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP074B: Oxygenated Compounds</b>							
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW29_11/07/17	11-Jul-2017	02-Aug-2017	25-Jul-2017	✘	02-Aug-2017	25-Jul-2017	✘
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17 GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	11-Jul-2017	13-Jul-2017	25-Jul-2017	✔	13-Jul-2017	25-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW54_11/07/17	11-Jul-2017	14-Jul-2017	25-Jul-2017	✔	14-Jul-2017	25-Jul-2017	✔
<b>EP074C: Sulfonated Compounds</b>							
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW29_11/07/17	11-Jul-2017	02-Aug-2017	25-Jul-2017	✘	02-Aug-2017	25-Jul-2017	✘
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17 GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	11-Jul-2017	13-Jul-2017	25-Jul-2017	✔	13-Jul-2017	25-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW54_11/07/17	11-Jul-2017	14-Jul-2017	25-Jul-2017	✔	14-Jul-2017	25-Jul-2017	✔



Matrix: **WATER** Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP074D: Fumigants</b>							
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW29_11/07/17	11-Jul-2017	02-Aug-2017	25-Jul-2017	✘	02-Aug-2017	25-Jul-2017	✘
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17 GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	11-Jul-2017	13-Jul-2017	25-Jul-2017	✔	13-Jul-2017	25-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW54_11/07/17	11-Jul-2017	14-Jul-2017	25-Jul-2017	✔	14-Jul-2017	25-Jul-2017	✔
<b>EP074E: Halogenated Aliphatic Compounds</b>							
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW29_11/07/17	11-Jul-2017	02-Aug-2017	25-Jul-2017	✘	02-Aug-2017	25-Jul-2017	✘
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17 GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	11-Jul-2017	13-Jul-2017	25-Jul-2017	✔	13-Jul-2017	25-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW54_11/07/17	11-Jul-2017	14-Jul-2017	25-Jul-2017	✔	14-Jul-2017	25-Jul-2017	✔





Matrix: **WATER** Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP074F: Halogenated Aromatic Compounds</b>							
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW29_11/07/17	11-Jul-2017	02-Aug-2017	25-Jul-2017	✘	02-Aug-2017	25-Jul-2017	✘
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17 GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	11-Jul-2017	13-Jul-2017	25-Jul-2017	✔	13-Jul-2017	25-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW54_11/07/17	11-Jul-2017	14-Jul-2017	25-Jul-2017	✔	14-Jul-2017	25-Jul-2017	✔
<b>EP074G: Trihalomethanes</b>							
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW29_11/07/17	11-Jul-2017	02-Aug-2017	25-Jul-2017	✘	02-Aug-2017	25-Jul-2017	✘
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17 GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	11-Jul-2017	13-Jul-2017	25-Jul-2017	✔	13-Jul-2017	25-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW54_11/07/17	11-Jul-2017	14-Jul-2017	25-Jul-2017	✔	14-Jul-2017	25-Jul-2017	✔



Matrix: **WATER** Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP074H: Naphthalene</b>							
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW29_11/07/17	11-Jul-2017	02-Aug-2017	25-Jul-2017	✘	02-Aug-2017	25-Jul-2017	✘
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17 GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	11-Jul-2017	13-Jul-2017	25-Jul-2017	✔	13-Jul-2017	25-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW54_11/07/17	11-Jul-2017	14-Jul-2017	25-Jul-2017	✔	14-Jul-2017	25-Jul-2017	✔
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>							
<b>Amber Glass Bottle - Unpreserved (EP075(SIM))</b> GW44_11/07/17, GW49_11/07/17	11-Jul-2017	13-Jul-2017	18-Jul-2017	✔	17-Jul-2017	22-Aug-2017	✔
<b>Amber Glass Bottle - Unpreserved (EP075(SIM))</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17 GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17	11-Jul-2017	17-Jul-2017	18-Jul-2017	✔	18-Jul-2017	26-Aug-2017	✔
<b>Amber Glass Bottle - Unpreserved (EP075(SIM))</b> GW54_11/07/17	11-Jul-2017	18-Jul-2017	18-Jul-2017	✔	19-Jul-2017	27-Aug-2017	✔



Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW44_11/07/17, QC102_11/07/17	GW49_11/07/17,	11-Jul-2017	13-Jul-2017	18-Jul-2017	✓	17-Jul-2017	22-Aug-2017	✓
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, QC202_11/07/17, GW40_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, QC304_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW39_11/07/17, GW50_11/07/17	11-Jul-2017	17-Jul-2017	18-Jul-2017	✓	18-Jul-2017	26-Aug-2017	✓
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW54_11/07/17		11-Jul-2017	18-Jul-2017	18-Jul-2017	✓	19-Jul-2017	27-Aug-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, QC205_11/07/17, QC206_11/07/17, GW40_11/07/17, GW44_11/07/17, QC102_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, QC304_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, QC202_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17,	11-Jul-2017	13-Jul-2017	25-Jul-2017	✓	13-Jul-2017	25-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW54_11/07/17		11-Jul-2017	14-Jul-2017	25-Jul-2017	✓	14-Jul-2017	25-Jul-2017	✓





Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>							
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW44_11/07/17, QC102_11/07/17	GW49_11/07/17,	11-Jul-2017	13-Jul-2017	18-Jul-2017 ✓	17-Jul-2017	22-Aug-2017	✓
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, QC202_11/07/17, GW40_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, QC304_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW39_11/07/17, GW50_11/07/17	11-Jul-2017	17-Jul-2017	18-Jul-2017 ✓	18-Jul-2017	26-Aug-2017	✓
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW54_11/07/17		11-Jul-2017	18-Jul-2017	18-Jul-2017 ✓	19-Jul-2017	27-Aug-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, QC205_11/07/17, QC206_11/07/17, GW40_11/07/17, GW44_11/07/17, QC102_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, QC304_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, QC202_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17,	11-Jul-2017	13-Jul-2017	25-Jul-2017 ✓	13-Jul-2017	25-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW54_11/07/17		11-Jul-2017	14-Jul-2017	25-Jul-2017 ✓	14-Jul-2017	25-Jul-2017	✓



Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080: BTEXN</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, QC205_11/07/17, QC206_11/07/17, GW40_11/07/17, GW44_11/07/17, QC102_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, QC304_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, QC202_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17,	11-Jul-2017	13-Jul-2017	25-Jul-2017	✓	13-Jul-2017	25-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW54_11/07/17		11-Jul-2017	14-Jul-2017	25-Jul-2017	✓	14-Jul-2017	25-Jul-2017	✓
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW38_11/07/17, GW49_11/07/17	GW04_11/07/17,	11-Jul-2017	----	----	----	18-Jul-2017	07-Jan-2018	✓
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW38_11/07/17, GW49_11/07/17	GW04_11/07/17,	11-Jul-2017	----	----	----	18-Jul-2017	07-Jan-2018	✓
<b>EP231C: Perfluoroalkyl Sulfonamides</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW38_11/07/17, GW49_11/07/17	GW04_11/07/17,	11-Jul-2017	----	----	----	18-Jul-2017	07-Jan-2018	✓
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW38_11/07/17, GW49_11/07/17	GW04_11/07/17,	11-Jul-2017	----	----	----	18-Jul-2017	07-Jan-2018	✓
<b>EP231P: PFAS Sums</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW38_11/07/17, GW49_11/07/17	GW04_11/07/17,	11-Jul-2017	----	----	----	18-Jul-2017	07-Jan-2018	✓



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Laboratory Duplicates (DUP)</b>							
Alkalinity by PC Titrator	ED037-P	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	5	39	12.82	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	6	55	10.91	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	4	32	12.50	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	6	52	11.54	10.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	38	2.63	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	19	10.53	10.00	✔	NEPM 2013 B3 & ALS QC Standard
pH by PC Titrator	EA005-P	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	5	42	11.90	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	8	73	10.96	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	3	21	14.29	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	58	1.72	10.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	27	14.81	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	4	22	18.18	10.00	✔	NEPM 2013 B3 & ALS QC Standard
<b>Laboratory Control Samples (LCS)</b>							
Alkalinity by PC Titrator	ED037-P	3	60	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	3	39	7.69	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	6	55	10.91	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	3	60	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	32	6.25	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	3	52	5.77	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	3	38	7.89	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard





Matrix: **WATER** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Control Samples (LCS) - Continued</b>							
Total Dissolved Solids (High Level)	EA015H	6	60	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	42	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	4	73	5.48	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	2	21	9.52	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	58	5.17	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	27	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	4	22	18.18	5.00	✓	NEPM 2013 B3 & ALS QC Standard
<b>Method Blanks (MB)</b>							
Ammonia as N by Discrete analyser	EK055G	3	39	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	3	55	5.45	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	3	60	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	32	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	3	52	5.77	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	3	38	7.89	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	3	60	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	3	60	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	42	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	4	73	5.48	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	2	21	9.52	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	58	5.17	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	27	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	4	22	18.18	5.00	✓	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>							
Ammonia as N by Discrete analyser	EK055G	3	39	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	3	55	5.45	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	3	60	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	32	3.13	5.00	*	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	3	52	5.77	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	38	2.63	5.00	*	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Matrix Spikes (MS) - Continued</b>							
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	3	60	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	42	7.14	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	4	73	5.48	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	1	21	4.76	5.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	58	1.72	5.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	27	11.11	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	3	22	13.64	5.00	✔	NEPM 2013 B3 & ALS QC Standard



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by PC Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of 'filterable' residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM (2013) Schedule B(3)
Alkalinity by PC Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM (2013) Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Oxidised Sulfur as SO4 2-	ED043	WATER	In house: The sample is treated with Peroxide to convert all Sulfur species to Sulfate. Sulfate in the sample can then be determined by ICPAES and reported as TOS as SO4 2-.
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm APHA 21st edition seal method 2 017-1-L april 2003
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM (2013) Schedule B(3)  Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM (2013) Schedule B(3)  Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM (2013) Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.





Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Fluoride by PC Titrator	EK040P	WATER	In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3)
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO <sub>2</sub> - B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO <sub>3</sub> - F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined separately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite and Nitrate as N (NO <sub>x</sub> ) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO <sub>3</sub> - F. Combined oxidised Nitrogen (NO <sub>2</sub> +NO <sub>3</sub> ) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with orthophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM (2013) Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Volatile Organic Compounds WF Detection Limits	EP074-WF	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)



<i>Analytical Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with methanol. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers.
<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Total Oxidisable Sulfur as SO4 2- Prep	ED043-PR	WATER	In house
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (2013) Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

## CERTIFICATE OF ANALYSIS

<b>Work Order</b> : <b>EM1709106</b> <b>Amendment</b> : <b>2</b> <b>Client</b> : <b>AECOM Australia Pty Ltd</b> <b>Contact</b> : <b>MS AVERYLL COYNE</b> <b>Address</b> : <b>COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004</b> <b>Telephone</b> : <b>+61 03 9653 1234</b> <b>Project</b> : <b>60537182</b> <b>Order number</b> : <b>Task 3.2</b> <b>C-O-C number</b> : <b>----</b> <b>Sampler</b> : <b>BH, BP, JM</b> <b>Site</b> : <b>----</b> <b>Quote number</b> : <b>ME/199/16</b> <b>No. of samples received</b> : <b>28</b> <b>No. of samples analysed</b> : <b>28</b>	<b>Page</b> : 1 of 45  <b>Laboratory</b> : Environmental Division Melbourne <b>Contact</b> : Carol Walsh <b>Address</b> : 4 Westall Rd Springvale VIC Australia 3171  <b>Telephone</b> : +61-3-8549 9608 <b>Date Samples Received</b> : 12-Jul-2017 09:50 <b>Date Analysis Commenced</b> : 13-Jul-2017 <b>Issue Date</b> : 11-Aug-2017 13:23
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Accreditation No. 825  
Accredited for compliance with  
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

**Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.**

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Chris Lemaitre	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	Senior Semivolatile Instrument Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC





## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
LOR = Limit of reporting  
^ = This result is computed from individual analyte detections at or above the level of reporting  
ø = ALS is not NATA accredited for these tests.  
~ = Indicates an estimated value.

- TDS by method EA-015 for EM1709106 #7,24 may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- EP074-WF: Minor VOC hits have been confirmed by re-analysis.
- EP074-WF: Minor Carbon disulfide hit confirmed by re-analysis.
- It is recognised that Nitrite +Nitrate as N is less than Nitrite as N for sample #3. However, the difference is within experimental variation of the methods.
- It is recognised that total metals are less than dissolved metals for samples #4 and #16. However, the difference is within experimental variation of the methods.
- ED041G: Samples EM1709106-002 and 010 have been diluted prior to analysis due to sample matrix and LORs have been raised accordingly.
- Amendment (2/8/17): This report has been amended and re-released to allow the reporting of additional analytical data.
- Amendment (07/08/2017): This report has been amended and re-released to allow the reporting of additional analytical data.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- Ionic balances were calculated using: major anions - chloride, alkalinity, sulfate; and major cations - calcium, magnesium, potassium, sodium and iron for #24.
- ED045G: The presence of thiocyanate can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- EG020T: EM1709106-026 required dilution prior to Total Metal analysis. LOR values have been raised accordingly.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW38_11/07/17	GW33_11/07/17	GW36_11/07/17	GW37_11/07/17	GW28_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-001	EM1709106-002	EM1709106-003	EM1709106-004	EM1709106-005	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	8.12	6.70	6.88	7.65	7.94	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	3530	1600	797	739	1420	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	900	828	370	586	819	
Total Alkalinity as CaCO3	----	1	mg/L	900	828	370	586	819	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	971	<5	38	95	225	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	1690	12	57	132	415	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	860	539	169	21	160	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	9	205	70	25	61	
Magnesium	7439-95-4	1	mg/L	32	98	29	37	46	
Sodium	7440-23-5	1	mg/L	1260	224	128	204	444	
Potassium	7440-09-7	1	mg/L	25	29	20	31	33	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.02	0.02	0.04	0.01	0.02	
Arsenic	7440-38-2	0.001	mg/L	0.003	----	0.011	0.001	<0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	----	0.002	<0.001	0.002	
Copper	7440-50-8	0.001	mg/L	0.001	----	<0.001	<0.001	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	----	<0.001	<0.001	<0.001	
Manganese	7439-96-5	0.001	mg/L	0.059	0.566	0.417	0.314	0.166	
Nickel	7440-02-0	0.001	mg/L	0.017	----	0.020	0.012	0.016	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Zinc	7440-66-6	0.005	mg/L	0.108	----	0.171	0.235	0.008	
Iron	7439-89-6	0.05	mg/L	<0.05	27.4	10.4	<0.05	0.61	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	20.9	3.36	2.20	0.66	3.23	
Arsenic	7440-38-2	0.001	mg/L	0.011	----	0.018	0.004	0.002	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW38_11/07/17	GW33_11/07/17	GW36_11/07/17	GW37_11/07/17	GW28_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-001	EM1709106-002	EM1709106-003	EM1709106-004	EM1709106-005	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	0.0002	----	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.092	----	0.008	0.002	0.008	
Copper	7440-50-8	0.001	mg/L	0.035	----	0.007	0.002	0.003	
Nickel	7440-02-0	0.001	mg/L	0.128	----	0.021	0.011	0.020	
Lead	7439-92-1	0.001	mg/L	0.065	----	0.004	<0.001	0.002	
Zinc	7440-66-6	0.005	mg/L	0.248	----	0.223	0.202	0.026	
Manganese	7439-96-5	0.001	mg/L	0.537	0.622	0.441	0.319	0.188	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	38.2	38.3	17.6	0.89	2.93	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	<0.0001	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	1.7	0.2	0.9	1.0	1.5	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	0.02	7.86	2.83	0.48	8.20	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	0.01	<0.01	0.01	0.03	<0.01	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	2.17	0.02	<0.01	0.10	<0.01	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	2.18	0.02	<0.01	0.13	<0.01	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.37	0.03	<0.01	<0.01	0.85	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	62.4	31.7	13.0	14.3	25.6	
Total Cations	----	0.01	meq/L	58.5	28.8	12.0	14.0	27.0	
Ionic Balance	----	0.01	%	3.25	4.90	3.98	1.13	2.71	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	9	9	30	4	28	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW38_11/07/17	GW33_11/07/17	GW36_11/07/17	GW37_11/07/17	GW28_11/07/17
Client sampling date / time					11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709106-001	EM1709106-002	EM1709106-003	EM1709106-004	EM1709106-005	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	<1	<1	<1	<1	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	<1	<1	<1	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	<1	<1	<1	
Styrene	100-42-5	1	µg/L	<1	<1	<1	<1	<1	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	<1	<1	<1	
Isopropylbenzene	98-82-8	1	µg/L	<1	<1	<1	<1	<1	
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	<1	<1	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	<1	<1	<1	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	<1	<1	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	<1	<1	<1	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	<1	<1	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	<1	<1	<1	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	<10	<10	<10	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	<10	<10	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	<10	<10	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	<10	<10	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	<10	<10	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	1	<1	<1	1	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	<10	<10	<10	
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	<10	
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	<10.0	<10.0	<10.0	
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	<10	
Chloroethane	75-00-3	10	µg/L	<10	<10	<10	<10	<10	
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	<10	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW38_11/07/17	GW33_11/07/17	GW36_11/07/17	GW37_11/07/17	GW28_11/07/17
Client sampling date / time					11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709106-001	EM1709106-002	EM1709106-003	EM1709106-004	EM1709106-005	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	<1	
Iodomethane	74-88-4	1	µg/L	<1	<1	<1	<1	<1	
Methylene chloride	75-09-2	4	µg/L	<4	<4	----	<4	<4	
Methylene chloride	75-09-2	5	µg/L	----	----	<5	----	----	
trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	<1	<1	<1	<1	
1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	<1	<1	<1	
cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	<1	<1	<1	<1	
1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	<1	
1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	<1	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	<1	
1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	<1	
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	<1	
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	<1	
1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	<1	
1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	<1	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	<1	
1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	<1	
trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	<1	
cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	<1	<1	<1	
1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	<1	
1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	<1	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	<1	<1	<1	
1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	<1	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	<1	<1	<1	<1	
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	<1	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	<1	<1	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	<1	
1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	<1	<1	<1	
1.4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
1.2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	<1	<1	<1	
1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	<1	<1	<1	
1.2.3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	<1	<1	<1	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW38_11/07/17	GW33_11/07/17	GW36_11/07/17	GW37_11/07/17	GW28_11/07/17
Client sampling date / time					11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709106-001	EM1709106-002	EM1709106-003	EM1709106-004	EM1709106-005	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes</b>									
Chloroform	67-66-3	1	µg/L	<1	<1	<1	<1	<1	
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	<1	<1	<1	
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	<1	
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW38_11/07/17	GW33_11/07/17	GW36_11/07/17	GW37_11/07/17	GW28_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-001	EM1709106-002	EM1709106-003	EM1709106-004	EM1709106-005	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	----	----	----	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	----	----	----	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	----	----	----	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	----	----	----	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	----	----	----	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	----	----	----	----	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	----	----	----	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	----	----	----	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	----	----	----	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	----	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW38_11/07/17	GW33_11/07/17	GW36_11/07/17	GW37_11/07/17	GW28_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-001	EM1709106-002	EM1709106-003	EM1709106-004	EM1709106-005	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	----	----	----	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	----	----	----	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	----	----	----	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	----	----	----	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	----	----	----	----	
Perfluorotridecanoic acid (PFTTrDA)	72629-94-8	0.02	µg/L	<0.02	----	----	----	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	----	----	----	----	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	----	----	----	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	----	----	----	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	----	----	----	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	----	----	----	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	----	----	----	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	----	----	----	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	----	----	----	----	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	----	----	----	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	----	----	----	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	----	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW38_11/07/17	GW33_11/07/17	GW36_11/07/17	GW37_11/07/17	GW28_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-001	EM1709106-002	EM1709106-003	EM1709106-004	EM1709106-005	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	----	----	----	----	----
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	<0.01	----	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	<0.01	----	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	<0.01	----	----	----	----	----
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	99.1	96.1	99.2	92.3	94.5	
Toluene-D8	2037-26-5	1	%	98.8	95.9	99.0	91.8	94.1	
4-Bromofluorobenzene	460-00-4	1	%	99.9	92.3	99.5	94.5	94.3	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	35.6	34.5	34.5	27.6	26.0	
2-Chlorophenol-D4	93951-73-6	1	%	90.7	87.5	90.2	78.6	79.2	
2,4,6-Tribromophenol	118-79-6	1	%	73.3	80.3	83.3	67.6	66.0	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	75.8	77.8	78.9	68.7	64.6	
Anthracene-d10	1719-06-8	1	%	82.4	82.3	83.8	72.5	71.8	
4-Terphenyl-d14	1718-51-0	1	%	87.5	86.6	85.1	75.5	73.3	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	101	98.0	101	94.2	96.4	
Toluene-D8	2037-26-5	2	%	92.3	89.6	92.4	85.8	87.9	
4-Bromofluorobenzene	460-00-4	2	%	97.0	89.6	95.5	92.5	92.8	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	98.9	----	----	----	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW23_11/07/17	GW22_11/07/17	QC304_11/07/17	GW29_11/07/17	GW05_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-006	EM1709106-007	EM1709106-008	EM1709106-009	EM1709106-010	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	6.55	6.58	----	7.60	7.89	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	2190	782	----	878	1290	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	82	90	----	408	1070	
Total Alkalinity as CaCO3	----	1	mg/L	82	90	----	408	1070	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	682	200	----	227	<5	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	999	348	----	306	60	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	762	51	----	109	163	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	181	61	----	162	100	
Magnesium	7439-95-4	1	mg/L	76	23	----	28	117	
Sodium	7440-23-5	1	mg/L	459	52	----	96	238	
Potassium	7440-09-7	1	mg/L	26	7	----	8	56	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.03	0.10	----	<0.01	<0.01	
Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	----	0.001	0.007	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.003	0.007	----	<0.001	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	0.002	----	<0.001	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	0.002	----	<0.001	<0.001	
Manganese	7439-96-5	0.001	mg/L	0.434	0.110	----	0.017	0.369	
Nickel	7440-02-0	0.001	mg/L	0.008	0.005	----	0.035	0.009	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	----	<0.01	<0.01	
Zinc	7440-66-6	0.005	mg/L	0.372	0.088	----	0.012	0.006	
Iron	7439-89-6	0.05	mg/L	16.3	2.86	----	0.91	11.4	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	3.84	13.5	<0.01	2.81	21.9	
Arsenic	7440-38-2	0.001	mg/L	0.018	0.029	<0.001	0.017	0.040	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW23_11/07/17	GW22_11/07/17	QC304_11/07/17	GW29_11/07/17	GW05_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-006	EM1709106-007	EM1709106-008	EM1709106-009	EM1709106-010	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0001	<0.0001	<0.0001	0.0031	
Chromium	7440-47-3	0.001	mg/L	0.019	0.042	<0.001	0.012	0.079	
Copper	7440-50-8	0.001	mg/L	0.006	0.013	<0.001	0.005	1.63	
Nickel	7440-02-0	0.001	mg/L	0.013	0.013	<0.001	0.069	0.466	
Lead	7439-92-1	0.001	mg/L	0.011	0.113	<0.001	0.055	5.15	
Zinc	7440-66-6	0.005	mg/L	0.419	0.151	<0.005	0.061	2.44	
Manganese	7439-96-5	0.001	mg/L	0.472	0.117	----	0.042	0.717	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	34.1	19.5	<0.05	15.9	66.2	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.3	0.1	----	0.3	0.6	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	1.71	0.42	----	0.02	6.14	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	0.01	0.01	----	0.02	<0.01	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	0.02	----	0.24	<0.01	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	0.01	0.03	----	0.26	<0.01	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	----	<0.01	<0.01	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	37.3	7.40	----	16.0	26.0	
Total Cations	----	0.01	meq/L	35.9	7.38	----	14.8	26.4	
Ionic Balance	----	0.01	%	1.93	0.16	----	3.85	0.82	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	9	23	----	13	17	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	<1	----	<1	<1	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW23_11/07/17	GW22_11/07/17	QC304_11/07/17	GW29_11/07/17	GW05_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-006	EM1709106-007	EM1709106-008	EM1709106-009	EM1709106-010	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	<1	----	<1	<1	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	----	<1	<1	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	----	<1	<1	
Styrene	100-42-5	1	µg/L	<1	<1	----	<1	<1	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	----	<1	<1	
Isopropylbenzene	98-82-8	1	µg/L	<1	<1	----	<1	<1	
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	----	<1	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	----	<1	<1	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	----	<1	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	----	<1	<1	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	----	<1	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	----	<1	<1	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	----	<1	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	----	<10	<10	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	----	<10	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	----	<10	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	----	<10	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	----	<10	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	<1	----	<1	<1	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	----	<1	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	----	<1	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	----	<2	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	----	<2	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	----	<1	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	----	<10	<10	
Chloromethane	74-87-3	10	µg/L	<10	<10	----	<10	<10	
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	----	<10.0	<10.0	
Vinyl chloride	75-01-4	10.0	µg/L	----	----	----	<10.0	----	
Bromomethane	74-83-9	10	µg/L	<10	<10	----	<10	<10	
Chloroethane	75-00-3	10	µg/L	<10	<10	----	<10	<10	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW23_11/07/17	GW22_11/07/17	QC304_11/07/17	GW29_11/07/17	GW05_11/07/17
Client sampling date / time					11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709106-006	EM1709106-007	EM1709106-008	EM1709106-009	EM1709106-010	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	----	<10	<10	
1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	----	<1	<1	
Iodomethane	74-88-4	1	µg/L	<1	<1	----	<1	<1	
Methylene chloride	75-09-2	4	µg/L	<4	<4	----	<4	<4	
trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	<1	----	<1	<1	
1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	----	<1	<1	
cis-1.2-Dichloroethene	156-59-2	1	µg/L	2	<1	----	<1	<1	
1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	----	<1	<1	
1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	----	<1	<1	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	----	<1	<1	
1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	----	<1	<1	
Trichloroethene	79-01-6	1	µg/L	<1	<1	----	<1	<1	
Dibromomethane	74-95-3	1	µg/L	<1	<1	----	<1	<1	
1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	----	<1	<1	
1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	----	<1	<1	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	----	<1	<1	
1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	----	<1	<1	
trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	----	<1	<1	
cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	----	<1	<1	
1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	----	<1	<1	
1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	----	<1	<1	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	----	<1	<1	
1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	----	<1	<1	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	----	----	<1.0	
Hexachlorobutadiene	87-68-3	1.0	µg/L	----	----	----	<1.0	----	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	<1	----	<1	<1	
Bromobenzene	108-86-1	1	µg/L	<1	<1	----	<1	<1	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	----	<1	<1	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	----	<1	<1	
1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	----	<1	<1	
1.4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	<1.0	----	----	<1.0	
1.4-Dichlorobenzene	106-46-7	1.0	µg/L	----	----	----	<1.0	----	
1.2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	----	<1	<1	
1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	----	<1	<1	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW23_11/07/17	GW22_11/07/17	QC304_11/07/17	GW29_11/07/17	GW05_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-006	EM1709106-007	EM1709106-008	EM1709106-009	EM1709106-010	
				Result	Result	Result	Result	Result	
<b>EP074F: Halogenated Aromatic Compounds - Continued</b>									
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	----	<1	<1	
<b>EP074G: Trihalomethanes</b>									
Chloroform	67-66-3	1	µg/L	<1	<1	----	<1	<1	
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	----	<1	<1	
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	----	<1	<1	
Bromoform	75-25-2	1	µg/L	<1	<1	----	<1	<1	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	<5	----	<5	<5	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5	
Indeno(1,2,3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	
Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	----	<1.0	<1.0	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	----	<0.5	<0.5	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW23_11/07/17	GW22_11/07/17	QC304_11/07/17	GW29_11/07/17	GW05_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-006	EM1709106-007	EM1709106-008	EM1709106-009	EM1709106-010	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	97.4	94.6	----	93.3	93.2	
Toluene-D8	2037-26-5	1	%	99.2	96.1	----	97.9	93.8	
4-Bromofluorobenzene	460-00-4	1	%	100	96.7	----	98.2	96.6	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	30.3	34.7	----	35.9	30.5	
2-Chlorophenol-D4	93951-73-6	1	%	84.8	90.7	----	88.9	78.8	
2,4,6-Tribromophenol	118-79-6	1	%	80.8	80.1	----	80.1	79.7	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	78.5	80.9	----	80.9	72.6	
Anthracene-d10	1719-06-8	1	%	85.6	87.5	----	86.8	83.1	
4-Terphenyl-d14	1718-51-0	1	%	90.0	92.6	----	94.9	87.0	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	99.5	96.5	95.5	96.4	95.2	
Toluene-D8	2037-26-5	2	%	92.5	89.7	84.7	88.6	87.5	
4-Bromofluorobenzene	460-00-4	2	%	98.8	93.9	90.1	94.2	91.1	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW09_11/07/17	GW03_11/07/17	GW04_11/07/17	QC203_11/07/17	GW11_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-011	EM1709106-012	EM1709106-013	EM1709106-014	EM1709106-015	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.71	7.76	7.80	7.81	7.79	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	985	1410	814	916	629	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	391	912	601	603	272	
Total Alkalinity as CaCO3	----	1	mg/L	391	912	601	603	272	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	318	259	182	178	189	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	518	497	122	278	305	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	84	136	30	28	13	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	167	202	189	189	155	
Magnesium	7439-95-4	1	mg/L	32	113	49	48	11	
Sodium	7440-23-5	1	mg/L	117	173	54	54	26	
Potassium	7440-09-7	1	mg/L	24	47	13	13	9	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.03	<0.01	<0.01	<0.01	<0.01	
Arsenic	7440-38-2	0.001	mg/L	<0.001	0.007	0.002	0.002	0.005	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.001	0.002	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Manganese	7439-96-5	0.001	mg/L	0.269	0.645	0.162	0.160	0.130	
Nickel	7440-02-0	0.001	mg/L	0.010	0.012	0.022	0.021	0.012	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Zinc	7440-66-6	0.005	mg/L	<0.005	0.012	0.079	0.074	<0.005	
Iron	7439-89-6	0.05	mg/L	9.89	8.56	0.67	0.67	1.98	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.93	1.70	27.5	30.4	0.32	
Arsenic	7440-38-2	0.001	mg/L	0.002	0.010	0.071	0.080	0.008	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW09_11/07/17	GW03_11/07/17	GW04_11/07/17	QC203_11/07/17	GW11_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-011	EM1709106-012	EM1709106-013	EM1709106-014	EM1709106-015	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0002	0.0013	0.0016	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.003	0.004	0.069	0.075	0.002	
Copper	7440-50-8	0.001	mg/L	0.001	0.013	0.100	0.109	<0.001	
Nickel	7440-02-0	0.001	mg/L	0.011	0.016	0.075	0.083	0.012	
Lead	7439-92-1	0.001	mg/L	0.003	0.153	0.186	0.203	0.001	
Zinc	7440-66-6	0.005	mg/L	0.008	0.150	1.23	1.37	<0.005	
Manganese	7439-96-5	0.001	mg/L	0.300	0.700	1.38	1.52	0.135	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	16.1	11.7	69.8	78.1	3.32	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.3	0.5	0.4	0.4	0.2	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	5.13	0.78	0.02	0.03	0.37	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	0.35	<0.01	0.01	<0.01	0.01	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	0.35	<0.01	0.01	<0.01	0.01	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	16.8	27.4	16.6	16.5	9.74	
Total Cations	----	0.01	meq/L	16.7	28.1	16.1	16.1	10.0	
Ionic Balance	----	0.01	%	0.40	1.18	1.52	1.47	1.34	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	12	11	4	4	7	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW09_11/07/17	GW03_11/07/17	GW04_11/07/17	QC203_11/07/17	GW11_11/07/17
Client sampling date / time					11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709106-011	EM1709106-012	EM1709106-013	EM1709106-014	EM1709106-015	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	<1	<1	<1	<1	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	<1	<1	<1	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	<1	<1	<1	
Styrene	100-42-5	1	µg/L	<1	<1	<1	<1	<1	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	<1	<1	<1	
Isopropylbenzene	98-82-8	1	µg/L	<1	<1	<1	<1	<1	
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	<1	<1	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	<1	<1	<1	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	<1	<1	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	<1	<1	<1	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	<1	<1	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	<1	<1	<1	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	<10	<10	<10	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	<10	<10	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	<10	<10	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	<10	<10	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	<10	<10	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	<10	<10	<10	
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	<10	
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	<10.0	<10.0	<10.0	
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	<10	
Chloroethane	75-00-3	10	µg/L	<10	<10	<10	<10	<10	
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	<10	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW09_11/07/17	GW03_11/07/17	GW04_11/07/17	QC203_11/07/17	GW11_11/07/17
Client sampling date / time					11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709106-011	EM1709106-012	EM1709106-013	EM1709106-014	EM1709106-015	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	<1	
Iodomethane	74-88-4	1	µg/L	<1	<1	<1	<1	<1	
Methylene chloride	75-09-2	4	µg/L	<4	<4	<4	<4	<4	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	<1	<1	<1	
1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	<1	<1	<1	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	<1	<1	7	
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	<1	
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	<1	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	<1	
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	<1	
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	<1	
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	<1	
1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	<1	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	<1	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	<1	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	<1	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	<1	<1	<1	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	<1	
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	<1	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	<1	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	<1	<1	<1	<1	
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	<1	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	<1	<1	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	<1	
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	<1	<1	<1	
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	<1	<1	<1	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	<1	<1	<1	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074G: Trihalomethanes</b>									



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW09_11/07/17	GW03_11/07/17	GW04_11/07/17	QC203_11/07/17	GW11_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-011	EM1709106-012	EM1709106-013	EM1709106-014	EM1709106-015	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	<1	<1	<1	<1	<1	
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	<1	<1	<1	
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	<1	
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<b>260</b>	
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<b>260</b>	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW09_11/07/17	GW03_11/07/17	GW04_11/07/17	QC203_11/07/17	GW11_11/07/17
Client sampling date / time					11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709106-011	EM1709106-012	EM1709106-013	EM1709106-014	EM1709106-015	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	330	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	330	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	330	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	----	<0.02	----	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	----	<0.02	----	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	----	<0.02	----	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	----	<0.02	----	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	----	<0.01	----	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	----	<0.02	----	----	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	----	<0.1	----	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	----	<0.02	----	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	----	<0.02	----	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	----	<0.02	----	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW09_11/07/17	GW03_11/07/17	GW04_11/07/17	QC203_11/07/17	GW11_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-011	EM1709106-012	EM1709106-013	EM1709106-014	EM1709106-015	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	----	<0.01	----	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	----	<0.02	----	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	----	<0.02	----	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	----	<0.02	----	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	----	<0.02	----	----	
Perfluorotridecanoic acid (PFTTrDA)	72629-94-8	0.02	µg/L	----	----	<0.02	----	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	----	<0.05	----	----	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	----	<0.02	----	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	----	<0.05	----	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	----	<0.05	----	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	----	----	<0.05	----	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	----	<0.05	----	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	----	<0.02	----	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	----	<0.02	----	----	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	----	<0.05	----	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	----	<0.05	----	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	----	<0.05	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW09_11/07/17	GW03_11/07/17	GW04_11/07/17	QC203_11/07/17	GW11_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-011	EM1709106-012	EM1709106-013	EM1709106-014	EM1709106-015	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	----	<0.05	----	----	
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	----	----	<0.01	----	----	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	----	<0.01	----	----	
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	----	<0.01	----	----	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	92.5	94.7	94.2	92.8	93.0	
Toluene-D8	2037-26-5	1	%	94.4	89.6	94.9	91.4	92.4	
4-Bromofluorobenzene	460-00-4	1	%	93.7	91.0	96.4	97.8	96.7	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	35.3	32.6	35.6	30.3	35.4	
2-Chlorophenol-D4	93951-73-6	1	%	87.2	90.0	87.1	89.2	92.5	
2,4,6-Tribromophenol	118-79-6	1	%	78.7	70.9	81.6	71.3	76.5	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	80.2	69.4	74.0	81.8	71.0	
Anthracene-d10	1719-06-8	1	%	85.6	78.1	90.0	91.2	83.3	
4-Terphenyl-d14	1718-51-0	1	%	90.4	80.4	93.5	97.9	85.5	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	94.4	96.6	96.0	94.7	94.8	
Toluene-D8	2037-26-5	2	%	87.9	83.6	88.6	85.2	86.3	
4-Bromofluorobenzene	460-00-4	2	%	93.4	90.1	95.0	93.7	91.5	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	----	----	97.1	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW06_11/07/17	QC205_11/07/17	QC202_11/07/17	QC206_11/07/17	GW39_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-016	EM1709106-017	EM1709106-018	EM1709106-019	EM1709106-020	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.68	----	----	----	6.91	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	2350	----	----	----	1310	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	621	----	----	----	227	
Total Alkalinity as CaCO3	----	1	mg/L	621	----	----	----	227	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	728	----	----	----	140	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	1150	----	----	----	191	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	494	----	----	----	594	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	263	----	----	----	93	
Magnesium	7439-95-4	1	mg/L	83	----	----	----	38	
Sodium	7440-23-5	1	mg/L	422	----	----	----	283	
Potassium	7440-09-7	1	mg/L	54	----	----	----	19	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.04	----	----	----	0.09	
Arsenic	7440-38-2	0.001	mg/L	0.036	----	----	----	0.022	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.002	----	----	----	0.003	
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	<0.001	
Manganese	7439-96-5	0.001	mg/L	0.504	----	----	----	0.043	
Nickel	7440-02-0	0.001	mg/L	0.015	----	----	----	0.026	
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	----	<0.01	
Zinc	7440-66-6	0.005	mg/L	0.011	----	----	----	0.009	
Iron	7439-89-6	0.05	mg/L	24.8	----	----	----	4.76	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.44	----	<0.01	----	1.32	
Arsenic	7440-38-2	0.001	mg/L	0.080	----	<0.001	----	0.109	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW06_11/07/17	QC205_11/07/17	QC202_11/07/17	QC206_11/07/17	GW39_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-016	EM1709106-017	EM1709106-018	EM1709106-019	EM1709106-020	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	<0.0001	----	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<b>0.005</b>	----	<0.001	----	<b>0.007</b>	
Copper	7440-50-8	0.001	mg/L	<b>0.003</b>	----	<0.001	----	<b>0.005</b>	
Nickel	7440-02-0	0.001	mg/L	<b>0.018</b>	----	<0.001	----	<b>0.029</b>	
Lead	7439-92-1	0.001	mg/L	<b>0.007</b>	----	<0.001	----	<b>0.010</b>	
Zinc	7440-66-6	0.005	mg/L	<b>0.010</b>	----	<0.005	----	<b>0.013</b>	
Manganese	7439-96-5	0.001	mg/L	<b>0.546</b>	----	----	----	<b>0.049</b>	
Selenium	7782-49-2	0.01	mg/L	<0.01	----	<0.01	----	<0.01	
Iron	7439-89-6	0.05	mg/L	<b>34.4</b>	----	<0.05	----	<b>16.1</b>	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	<0.0001	----	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	<b>0.5</b>	----	----	----	<b>0.2</b>	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	<b>8.49</b>	----	----	----	<b>1.41</b>	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	----	----	----	<0.01	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<b>0.28</b>	----	----	----	<0.01	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<b>0.28</b>	----	----	----	<0.01	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	----	----	----	<b>0.02</b>	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	<b>41.5</b>	----	----	----	<b>24.2</b>	
Total Cations	----	0.01	meq/L	<b>39.7</b>	----	----	----	<b>20.6</b>	
Ionic Balance	----	0.01	%	<b>2.23</b>	----	----	----	<b>8.14</b>	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	<b>46</b>	----	----	----	<b>29</b>	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	----	----	----	<1	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW06_11/07/17	QC205_11/07/17	QC202_11/07/17	QC206_11/07/17	GW39_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-016	EM1709106-017	EM1709106-018	EM1709106-019	EM1709106-020	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	----	----	----	----	<1
Ethylbenzene	100-41-4	1	µg/L	<1	----	----	----	----	<1
meta- & para-Xylene	108-38-3	106-42-3	1	µg/L	<1	----	----	----	<1
Styrene	100-42-5	1	µg/L	<1	----	----	----	----	<1
ortho-Xylene	95-47-6	1	µg/L	<1	----	----	----	----	<1
Isopropylbenzene	98-82-8	1	µg/L	<1	----	----	----	----	<1
n-Propylbenzene	103-65-1	1	µg/L	<1	----	----	----	----	<1
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	----	----	----	----	<1
sec-Butylbenzene	135-98-8	1	µg/L	<1	----	----	----	----	<1
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	----	----	----	----	<1
tert-Butylbenzene	98-06-6	1	µg/L	<1	----	----	----	----	<1
p-Isopropyltoluene	99-87-6	1	µg/L	<1	----	----	----	----	<1
n-Butylbenzene	104-51-8	1	µg/L	<1	----	----	----	----	<1
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	----	----	----	----	<10
Vinyl Acetate	108-05-4	10	µg/L	<10	----	----	----	----	<10
2-Butanone (MEK)	78-93-3	10	µg/L	<10	----	----	----	----	<10
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	----	----	----	----	<10
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	----	----	----	----	<10
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	----	----	----	----	<1
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	----	----	----	----	<1
1,2-Dichloropropane	78-87-5	1	µg/L	<1	----	----	----	----	<1
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	----	----	----	----	<2
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	----	----	----	----	<2
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	----	----	----	----	<1
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	----	----	----	----	<10
Chloromethane	74-87-3	10	µg/L	<10	----	----	----	----	<10
Vinyl chloride	75-01-4	10	µg/L	<10.0	----	----	----	----	<10.0
Bromomethane	74-83-9	10	µg/L	<10	----	----	----	----	<10
Chloroethane	75-00-3	10	µg/L	<10	----	----	----	----	<10
Trichlorofluoromethane	75-69-4	10	µg/L	<10	----	----	----	----	<10



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW06_11/07/17	QC205_11/07/17	QC202_11/07/17	QC206_11/07/17	GW39_11/07/17
Client sampling date / time					11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709106-016	EM1709106-017	EM1709106-018	EM1709106-019	EM1709106-020	EM1709106-020
				Result	Result	Result	Result	Result	Result
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	----	----	----	----	<1
Iodomethane	74-88-4	1	µg/L	<1	----	----	----	----	<1
Methylene chloride	75-09-2	4	µg/L	<4	----	----	----	----	<4
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	----	----	----	----	<1
1,1-Dichloroethane	75-34-3	1	µg/L	<1	----	----	----	----	<1
cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	----	----	----	----	7
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	----	----	----	----	<1
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	----	----	----	----	<1
Carbon Tetrachloride	56-23-5	1	µg/L	<1	----	----	----	----	<1
1,2-Dichloroethane	107-06-2	1	µg/L	<1	----	----	----	----	<1
Trichloroethene	79-01-6	1	µg/L	<1	----	----	----	----	<1
Dibromomethane	74-95-3	1	µg/L	<1	----	----	----	----	<1
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	----	----	----	----	<1
1,3-Dichloropropane	142-28-9	1	µg/L	<1	----	----	----	----	<1
Tetrachloroethene	127-18-4	1	µg/L	<1	----	----	----	----	<1
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	----	----	----	----	<1
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	----	----	----	----	<1
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	----	----	----	----	<1
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	----	----	----	----	<1
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	----	----	----	----	<1
Pentachloroethane	76-01-7	1	µg/L	<1	----	----	----	----	<1
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	----	----	----	----	<1
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	----	----	----	----	<1.0
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	----	----	----	----	<1
Bromobenzene	108-86-1	1	µg/L	<1	----	----	----	----	<1
2-Chlorotoluene	95-49-8	1	µg/L	<1	----	----	----	----	<1
4-Chlorotoluene	106-43-4	1	µg/L	<1	----	----	----	----	<1
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	----	----	----	----	<1
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	----	----	----	----	<1.0
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	----	----	----	----	<1
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	----	----	----	----	<1
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	----	----	----	----	<1
<b>EP074G: Trihalomethanes</b>									







## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW06_11/07/17	QC205_11/07/17	QC202_11/07/17	QC206_11/07/17	GW39_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-016	EM1709106-017	EM1709106-018	EM1709106-019	EM1709106-020	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	----	<100	----	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	----	<100	----	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	----	<100	----	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	<100	----	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	<100	----	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	95.0	----	----	----	91.9	
Toluene-D8	2037-26-5	1	%	93.1	----	----	----	89.8	
4-Bromofluorobenzene	460-00-4	1	%	96.4	----	----	----	95.4	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	33.8	----	----	----	35.5	
2-Chlorophenol-D4	93951-73-6	1	%	89.6	----	----	----	82.5	
2,4,6-Tribromophenol	118-79-6	1	%	91.8	----	----	----	72.4	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	91.1	----	----	----	70.0	
Anthracene-d10	1719-06-8	1	%	94.0	----	----	----	79.8	
4-Terphenyl-d14	1718-51-0	1	%	98.6	----	----	----	80.6	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	96.9	94.3	97.3	94.6	93.6	
Toluene-D8	2037-26-5	2	%	86.9	86.0	87.6	86.3	83.7	
4-Bromofluorobenzene	460-00-4	2	%	92.7	91.6	91.1	90.5	91.7	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW40_11/07/17	GW50_11/07/17	GW44_11/07/17	GW49_11/07/17	QC102_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-021	EM1709106-022	EM1709106-023	EM1709106-024	EM1709106-025	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	6.45	7.60	7.74	7.31	----	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	2990	13800	11500	254	----	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	142	1170	790	59	----	
Total Alkalinity as CaCO3	----	1	mg/L	142	1170	790	59	----	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1480	1260	1200	3	----	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	2370	1990	1800	8	----	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	710	7410	6580	6	----	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	286	477	293	8	----	
Magnesium	7439-95-4	1	mg/L	118	444	575	6	----	
Sodium	7440-23-5	1	mg/L	518	3830	3500	6	----	
Potassium	7440-09-7	1	mg/L	16	148	129	3	----	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.03	0.05	<0.01	0.10	----	
Arsenic	7440-38-2	0.001	mg/L	0.006	0.017	<0.001	0.001	----	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----	
Chromium	7440-47-3	0.001	mg/L	<0.001	0.005	0.004	0.002	----	
Copper	7440-50-8	0.001	mg/L	<0.001	0.002	<0.001	<0.001	----	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----	
Manganese	7439-96-5	0.001	mg/L	0.742	0.869	0.043	0.020	----	
Nickel	7440-02-0	0.001	mg/L	0.039	0.049	0.064	0.014	----	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----	
Zinc	7440-66-6	0.005	mg/L	0.156	0.015	0.007	0.007	----	
Iron	7439-89-6	0.05	mg/L	63.0	21.2	0.78	1.26	----	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	39.1	43.7	1.16	8.13	<0.01	
Arsenic	7440-38-2	0.001	mg/L	0.053	0.086	0.003	0.006	<0.001	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW40_11/07/17	GW50_11/07/17	GW44_11/07/17	GW49_11/07/17	QC102_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-021	EM1709106-022	EM1709106-023	EM1709106-024	EM1709106-025	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	0.0007	0.0016	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.085	0.139	0.008	0.026	<0.001	
Copper	7440-50-8	0.001	mg/L	0.059	0.079	0.002	0.003	<0.001	
Nickel	7440-02-0	0.001	mg/L	0.115	0.142	0.064	0.026	<0.001	
Lead	7439-92-1	0.001	mg/L	0.039	0.075	0.001	0.005	<0.001	
Zinc	7440-66-6	0.005	mg/L	0.432	0.278	0.010	0.030	<0.005	
Manganese	7439-96-5	0.001	mg/L	0.812	1.11	0.054	0.048	----	
Selenium	7782-49-2	0.01	mg/L	0.01	0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	106	91.9	2.74	12.1	<0.05	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	<0.1	1.3	0.4	1.0	----	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	3.99	13.4	12.2	0.17	----	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.02	<0.01	0.01	----	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	0.42	0.32	0.01	----	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.44	0.32	0.02	----	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	2.21	0.03	----	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	53.7	259	226	1.41	----	
Total Cations	----	0.01	meq/L	----	----	----	1.30	----	
Total Cations	----	0.01	meq/L	46.9	231	217	----	----	
Ionic Balance	----	0.01	%	----	----	----	4.18	----	
Ionic Balance	----	0.01	%	6.71	5.70	2.00	----	----	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	19	64	46	5	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW40_11/07/17	GW50_11/07/17	GW44_11/07/17	GW49_11/07/17	QC102_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-021	EM1709106-022	EM1709106-023	EM1709106-024	EM1709106-025	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	----	
1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	----	
Iodomethane	74-88-4	1	µg/L	<1	<1	<1	<1	----	
Methylene chloride	75-09-2	4	µg/L	<4	<4	<4	<4	----	
trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	<1	<1	<1	----	
1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	49	<1	----	
cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	<1	<1	3	----	
1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	----	
1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	----	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	----	
1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	----	
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	----	
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	----	
1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	----	
1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	----	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	----	
1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	----	
trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	----	
cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	<1	<1	----	
1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	----	
1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	----	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	<1	<1	----	
1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	----	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	<1	<1	<1	----	
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	----	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	<1	----	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	----	
1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	<1	<1	----	
1.4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
1.2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	<1	<1	----	
1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	<1	<1	----	
1.2.3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	<1	<1	----	







## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW40_11/07/17	GW50_11/07/17	GW44_11/07/17	GW49_11/07/17	QC102_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-021	EM1709106-022	EM1709106-023	EM1709106-024	EM1709106-025	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	----	----	<0.02	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	----	----	<0.02	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	----	----	<0.02	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	----	----	<0.02	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	----	----	<0.01	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	----	----	<0.02	----	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	----	----	<0.1	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	----	----	<0.02	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	----	----	<0.02	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	----	----	<0.02	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW40_11/07/17	GW50_11/07/17	GW44_11/07/17	GW49_11/07/17	QC102_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709106-021	EM1709106-022	EM1709106-023	EM1709106-024	EM1709106-025	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	----	----	<0.01	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	----	----	<0.02	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	----	----	<0.02	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	----	----	<0.02	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	----	----	<0.02	----	
Perfluorotridecanoic acid (PFTTrDA)	72629-94-8	0.02	µg/L	----	----	----	<0.02	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	----	----	<0.05	----	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	----	----	<0.02	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	----	----	<0.05	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	----	----	<0.05	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	----	----	----	<0.05	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	----	----	<0.05	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	----	----	<0.02	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	----	----	<0.02	----	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	----	----	<0.05	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	----	----	<0.05	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	----	----	<0.05	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW40_11/07/17	GW50_11/07/17	GW44_11/07/17	GW49_11/07/17	QC102_11/07/17
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709106-021	EM1709106-022	EM1709106-023	EM1709106-024	EM1709106-025	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	----	----	<0.05	----	
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	----	----	----	<0.01	----	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	----	----	<0.01	----	
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	----	----	<0.01	----	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	96.5	97.5	98.6	92.9	----	
Toluene-D8	2037-26-5	1	%	97.8	92.1	96.6	94.0	----	
4-Bromofluorobenzene	460-00-4	1	%	96.5	97.0	97.1	98.3	----	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	33.9	36.4	32.4	34.6	----	
2-Chlorophenol-D4	93951-73-6	1	%	82.3	84.9	79.3	88.0	----	
2,4,6-Tribromophenol	118-79-6	1	%	64.6	86.0	67.9	83.2	----	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	59.1	83.1	68.7	85.8	----	
Anthracene-d10	1719-06-8	1	%	68.8	93.0	70.6	86.0	----	
4-Terphenyl-d14	1718-51-0	1	%	73.4	99.3	75.0	92.8	----	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	98.5	99.4	100	94.6	94.3	
Toluene-D8	2037-26-5	2	%	91.3	86.0	90.1	87.7	83.8	
4-Bromofluorobenzene	460-00-4	2	%	95.9	91.6	95.2	93.6	86.8	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	----	----	----	100	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Client sample ID		GW54_11/07/17	QC305_11/07/17	QC306_11/07/17	----	----	
Client sampling date / time		11-Jul-2017 00:00		11-Jul-2017 00:00		11-Jul-2017 00:00		----	----
Compound	CAS Number	LOR	Unit	EM1709106-026	EM1709106-027	EM1709106-028	-----	-----	
				Result	Result	Result	----	----	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.05	----	----	----	----	----
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	1670	----	----	----	----	----
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	680	----	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	680	----	----	----	----	----
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	137	----	----	----	----	----
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	354	----	----	----	----	----
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	500	----	----	----	----	----
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	158	----	----	----	----	----
Magnesium	7439-95-4	1	mg/L	77	----	----	----	----	----
Sodium	7440-23-5	1	mg/L	362	----	----	----	----	----
Potassium	7440-09-7	1	mg/L	21	----	----	----	----	----
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.41	----	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	0.033	----	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	0.007	----	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	0.554	----	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	0.012	----	----	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	0.008	----	----	----	----	----
Iron	7439-89-6	0.05	mg/L	2.10	----	----	----	----	----
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	117	----	<0.01	----	----	----
Arsenic	7440-38-2	0.001	mg/L	0.258	----	<0.001	----	----	----



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW54_11/07/17	QC305_11/07/17	QC306_11/07/17	----	----
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	----	----	
Compound	CAS Number	LOR	Unit	EM1709106-026	EM1709106-027	EM1709106-028	-----	-----	
				Result	Result	Result	----	----	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	0.0012	----	<0.0001	----	----	
Chromium	7440-47-3	0.001	mg/L	0.393	----	<0.001	----	----	
Copper	7440-50-8	0.001	mg/L	0.106	----	<0.001	----	----	
Nickel	7440-02-0	0.001	mg/L	0.243	----	<0.001	----	----	
Lead	7439-92-1	0.001	mg/L	0.239	----	<0.001	----	----	
Zinc	7440-66-6	0.005	mg/L	0.391	----	<0.005	----	----	
Manganese	7439-96-5	0.001	mg/L	1.12	----	----	----	----	
Selenium	7782-49-2	0.01	mg/L	<0.10	----	<0.01	----	----	
Iron	7439-89-6	0.05	mg/L	97.2	----	<0.05	----	----	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	<0.0001	----	----	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	<0.1	----	----	----	----	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	6.90	----	----	----	----	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	----	----	----	----	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	----	----	----	----	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	----	----	----	----	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.05	----	----	----	----	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	30.5	----	----	----	----	
Total Cations	----	0.01	meq/L	30.5	----	----	----	----	
Ionic Balance	----	0.01	%	0.06	----	----	----	----	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	75	----	----	----	----	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	----	----	----	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW54_11/07/17	QC305_11/07/17	QC306_11/07/17	----	----
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	----	----	
Compound	CAS Number	LOR	Unit	EM1709106-026	EM1709106-027	EM1709106-028	-----	-----	
				Result	Result	Result	----	----	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	----	----	----	----	
Ethylbenzene	100-41-4	1	µg/L	<1	----	----	----	----	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	----	----	----	----	
Styrene	100-42-5	1	µg/L	<1	----	----	----	----	
ortho-Xylene	95-47-6	1	µg/L	<1	----	----	----	----	
Isopropylbenzene	98-82-8	1	µg/L	<1	----	----	----	----	
n-Propylbenzene	103-65-1	1	µg/L	<1	----	----	----	----	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	----	----	----	----	
sec-Butylbenzene	135-98-8	1	µg/L	<1	----	----	----	----	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	----	----	----	----	
tert-Butylbenzene	98-06-6	1	µg/L	<1	----	----	----	----	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	----	----	----	----	
n-Butylbenzene	104-51-8	1	µg/L	<1	----	----	----	----	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	----	----	----	----	
Vinyl Acetate	108-05-4	10	µg/L	<10	----	----	----	----	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	----	----	----	----	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	----	----	----	----	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	----	----	----	----	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	----	----	----	----	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	----	----	----	----	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	----	----	----	----	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	----	----	----	----	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	----	----	----	----	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	----	----	----	----	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	----	----	----	----	
Chloromethane	74-87-3	10	µg/L	<10	----	----	----	----	
Vinyl chloride	75-01-4	10	µg/L	<10.0	----	----	----	----	
Bromomethane	74-83-9	10	µg/L	<10	----	----	----	----	
Chloroethane	75-00-3	10	µg/L	<10	----	----	----	----	
Trichlorofluoromethane	75-69-4	10	µg/L	<10	----	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW54_11/07/17	QC305_11/07/17	QC306_11/07/17	----	----
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	----	----	
Compound	CAS Number	LOR	Unit	EM1709106-026	EM1709106-027	EM1709106-028	-----	-----	
				Result	Result	Result	----	----	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	----	----	----	----	
Iodomethane	74-88-4	1	µg/L	<1	----	----	----	----	
Methylene chloride	75-09-2	5	µg/L	<5	----	----	----	----	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	----	----	----	----	
1,1-Dichloroethane	75-34-3	1	µg/L	<1	----	----	----	----	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	----	----	----	----	
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	----	----	----	----	
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	----	----	----	----	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	----	----	----	----	
1,2-Dichloroethane	107-06-2	1	µg/L	<1	----	----	----	----	
Trichloroethene	79-01-6	1	µg/L	<1	----	----	----	----	
Dibromomethane	74-95-3	1	µg/L	<1	----	----	----	----	
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	----	----	----	----	
1,3-Dichloropropane	142-28-9	1	µg/L	<1	----	----	----	----	
Tetrachloroethene	127-18-4	1	µg/L	<1	----	----	----	----	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	----	----	----	----	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	----	----	----	----	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	----	----	----	----	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	----	----	----	----	
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	----	----	----	----	
Pentachloroethane	76-01-7	1	µg/L	<1	----	----	----	----	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	----	----	----	----	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	----	----	----	----	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	----	----	----	----	
Bromobenzene	108-86-1	1	µg/L	<1	----	----	----	----	
2-Chlorotoluene	95-49-8	1	µg/L	<1	----	----	----	----	
4-Chlorotoluene	106-43-4	1	µg/L	<1	----	----	----	----	
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	----	----	----	----	
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	----	----	----	----	
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	----	----	----	----	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	----	----	----	----	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	----	----	----	----	
<b>EP074G: Trihalomethanes</b>									



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW54_11/07/17	QC305_11/07/17	QC306_11/07/17	----	----
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	----	----	
Compound	CAS Number	LOR	Unit	EM1709106-026	EM1709106-027	EM1709106-028	-----	-----	
				Result	Result	Result	----	----	
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	<1	----	----	----	----	
Bromodichloromethane	75-27-4	1	µg/L	<1	----	----	----	----	
Dibromochloromethane	124-48-1	1	µg/L	<1	----	----	----	----	
Bromoform	75-25-2	1	µg/L	<1	----	----	----	----	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	----	----	----	----	
Acenaphthylene	208-96-8	1	µg/L	<1.0	----	----	----	----	
Acenaphthene	83-32-9	1	µg/L	<1.0	----	----	----	----	
Fluorene	86-73-7	1	µg/L	<1.0	----	----	----	----	
Phenanthrene	85-01-8	1	µg/L	<1.0	----	----	----	----	
Anthracene	120-12-7	1	µg/L	<1.0	----	----	----	----	
Fluoranthene	206-44-0	1	µg/L	<1.0	----	----	----	----	
Pyrene	129-00-0	1	µg/L	<1.0	----	----	----	----	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	----	----	----	----	
Chrysene	218-01-9	1	µg/L	<1.0	----	----	----	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	----	----	----	----	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	----	----	----	----	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	----	----	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	----	----	----	----	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	----	----	----	----	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	----	----	----	----	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	----	----	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	----	----	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	----	----	
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----	
C15 - C28 Fraction	----	100	µg/L	<b>200</b>	----	----	----	----	
C29 - C36 Fraction	----	50	µg/L	<b>100</b>	----	----	----	----	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<b>300</b>	----	----	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	----	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW54_11/07/17	QC305_11/07/17	QC306_11/07/17	----	----
Client sampling date / time				11-Jul-2017 00:00	11-Jul-2017 00:00	11-Jul-2017 00:00	----	----	
Compound	CAS Number	LOR	Unit	EM1709106-026	EM1709106-027	EM1709106-028	-----	-----	
				Result	Result	Result	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	----	----	
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	----	----	
>C16 - C34 Fraction	----	100	µg/L	250	----	----	----	----	
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	250	----	----	----	----	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	----	----	----	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	----	----	
Toluene	108-88-3	2	µg/L	<2	<2	<2	----	----	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	----	----	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	----	----	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	----	----	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	----	----	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	----	----	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	----	----	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	103	----	----	----	----	
Toluene-D8	2037-26-5	1	%	109	----	----	----	----	
4-Bromofluorobenzene	460-00-4	1	%	105	----	----	----	----	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	27.2	----	----	----	----	
2-Chlorophenol-D4	93951-73-6	1	%	75.5	----	----	----	----	
2,4,6-Tribromophenol	118-79-6	1	%	74.6	----	----	----	----	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	75.3	----	----	----	----	
Anthracene-d10	1719-06-8	1	%	79.0	----	----	----	----	
4-Terphenyl-d14	1718-51-0	1	%	84.4	----	----	----	----	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	100	101	100	----	----	
Toluene-D8	2037-26-5	2	%	99.0	93.6	90.1	----	----	
4-Bromofluorobenzene	460-00-4	2	%	101	95.2	92.0	----	----	



## Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	72	120
Toluene-D8	2037-26-5	70	130
4-Bromofluorobenzene	460-00-4	70	128
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	10	46
2-Chlorophenol-D4	93951-73-6	23	104
2,4,6-Tribromophenol	118-79-6	28	130
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129
<b>EP231S: PFAS Surrogate</b>			
13C4-PFOS	----	60	130

## QUALITY CONTROL REPORT

<b>Work Order</b>	: <b>EM1709106</b>	<b>Page</b>	: 1 of 45
<b>Amendment</b>	: <b>2</b>		
<b>Client</b>	: <b>AECOM Australia Pty Ltd</b>	<b>Laboratory</b>	: Environmental Division Melbourne
<b>Contact</b>	: <b>MS AVERYLL COYNE</b>	<b>Contact</b>	: Carol Walsh
<b>Address</b>	: <b>COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004</b>	<b>Address</b>	: 4 Westall Rd Springvale VIC Australia 3171
<b>Telephone</b>	: +61 03 9653 1234	<b>Telephone</b>	: +61-3-8549 9608
<b>Project</b>	: 60537182	<b>Date Samples Received</b>	: 12-Jul-2017
<b>Order number</b>	: Task 3.2	<b>Date Analysis Commenced</b>	: 13-Jul-2017
<b>C-O-C number</b>	: ----	<b>Issue Date</b>	: 11-Aug-2017
<b>Sampler</b>	: BH, BP, JM		
<b>Site</b>	: ----		
<b>Quote number</b>	: ME/199/16		
<b>No. of samples received</b>	: 28		
<b>No. of samples analysed</b>	: 28		



Accreditation No. 825  
Accredited for compliance with  
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Chris Lemaitre	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	Senior Semivolatile Instrument Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC





## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot  
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
 LOR = Limit of reporting  
 RPD = Relative Percentage Difference  
 # = Indicates failed QC

## Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA005P: pH by PC Titrator (QC Lot: 994067)</b>									
EM1709085-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.42	7.52	1.34	0% - 20%
EM1709088-010	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	5.66	5.61	0.887	0% - 20%
<b>EA005P: pH by PC Titrator (QC Lot: 994070)</b>									
EM1709106-006	GW23_11/07/17	EA005-P: pH Value	----	0.01	pH Unit	6.55	6.47	1.23	0% - 20%
EM1709106-020	GW39_11/07/17	EA005-P: pH Value	----	0.01	pH Unit	6.91	6.74	2.49	0% - 20%
<b>EA005P: pH by PC Titrator (QC Lot: 999214)</b>									
EM1709167-002	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	9.47	9.47	0.00	0% - 20%
EM1709149-049	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	6.09	5.72	6.26	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 993900)</b>									
EM1709061-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	1590	1580	0.503	0% - 20%
EM1709106-001	GW38_11/07/17	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	3530	3610	2.21	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 993905)</b>									
EM1709106-013	GW04_11/07/17	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	814	883	8.13	0% - 20%
EM1709107-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	686	692	1.02	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 996492)</b>									
EM1709106-026	GW54_11/07/17	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	1670	1640	1.93	0% - 20%
EM1709144-011	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	<10	0.00	No Limit
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 994066)</b>									
EM1709088-010	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	7	6	24.6	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	7	6	24.6	No Limit
EM1709106-006	GW23_11/07/17	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 994066) - continued</b>									
EM1709106-006	GW23_11/07/17	ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	82	81	1.63	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	82	81	1.63	0% - 20%
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 994072)</b>									
EM1709107-008	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	32	27	15.9	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	32	27	16.9	0% - 20%
EM1709106-020	GW39_11/07/17	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	227	223	2.00	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	227	223	2.00	0% - 20%
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 999215)</b>									
EM1709163-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	305	298	2.32	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	305	298	2.32	0% - 20%
EM1709188-004	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	654	657	0.485	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	654	657	0.485	0% - 20%
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 993991)</b>									
EM1709088-010	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	2	2	0.00	No Limit
EM1709106-006	GW23_11/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	682	673	1.29	0% - 20%
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 993995)</b>									
EM1709106-011	GW09_11/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	318	283	11.6	0% - 20%
EM1709106-022	GW50_11/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1260	1250	0.836	0% - 20%
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 996588)</b>									
EM1709163-004	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1870	1870	0.00	0% - 20%
EM1709106-026	GW54_11/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	137	136	0.757	0% - 20%
<b>ED043: Total Oxidised Sulfur as SO4 2- (QC Lot: 996723)</b>									
EM1709106-001	GW38_11/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	1690	1610	4.99	0% - 20%
EM1709106-011	GW09_11/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	518	520	0.326	0% - 20%
<b>ED043: Total Oxidised Sulfur as SO4 2- (QC Lot: 996724)</b>									
EM1709106-026	GW54_11/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	354	343	3.14	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 993992)</b>									
EM1709088-010	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	7	7	0.00	No Limit
EM1709106-006	GW23_11/07/17	ED045G: Chloride	16887-00-6	1	mg/L	762	743	2.47	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 993996)</b>									



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 993996) - continued</b>									
EM1709110-006	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	7	7	0.00	No Limit
EM1709106-022	GW50_11/07/17	ED045G: Chloride	16887-00-6	1	mg/L	7410	7330	1.08	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 996587)</b>									
EM1709163-004	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	7230	7180	0.662	0% - 20%
EM1709106-026	GW54_11/07/17	ED045G: Chloride	16887-00-6	1	mg/L	500	502	0.397	0% - 20%
<b>ED093F: Dissolved Major Cations (QC Lot: 994606)</b>									
EM1709106-002	GW33_11/07/17	ED093F: Calcium	7440-70-2	1	mg/L	205	211	3.11	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	98	101	3.48	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	224	232	3.25	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	29	30	0.00	0% - 20%
EM1709106-011	GW09_11/07/17	ED093F: Calcium	7440-70-2	1	mg/L	167	172	2.98	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	32	33	0.00	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	117	119	1.64	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	24	24	0.00	0% - 20%
<b>ED093F: Dissolved Major Cations (QC Lot: 996717)</b>									
EM1709186-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	1240	1250	0.493	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	181	180	0.854	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	6650	6670	0.394	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	537	530	1.20	0% - 20%
EM1709188-007	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	109	106	3.38	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	168	162	3.74	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	1330	1290	3.16	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	20	18	14.3	0% - 20%
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 994604)</b>									
EM1709106-001	GW38_11/07/17	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.003	0.003	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.059	0.058	0.00	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.017	0.017	0.00	0% - 50%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.108	0.107	1.44	0% - 20%
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.02	0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit
		EM1709106-011	GW09_11/07/17	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001
EG020A-F: Arsenic	7440-38-2			0.001	mg/L	<0.001	<0.001	0.00	No Limit
EG020A-F: Chromium	7440-47-3			0.001	mg/L	<0.001	<0.001	0.00	No Limit
EG020A-F: Copper	7440-50-8			0.001	mg/L	<0.001	<0.001	0.00	No Limit





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 994604) - continued</b>									
EM1709106-011	GW09_11/07/17	EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.269	0.280	3.86	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.010	0.010	0.00	0% - 50%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.03	<0.01	90.6	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	9.89	10.2	3.66	0% - 20%
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 996715)</b>									
EM1709106-026	GW54_11/07/17	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.033	0.032	3.13	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.007	0.007	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.554	0.544	1.85	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.012	0.012	0.00	0% - 50%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.008	0.008	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.41	0.37	10.4	0% - 20%
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	2.10	2.09	0.783	0% - 20%
EM1709192-010	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.004	0.005	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.417	0.430	3.07	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	0.002	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.01	<0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	12.9	13.2	2.22	0% - 20%
<b>EG020T: Total Metals by ICP-MS (QC Lot: 1040326)</b>									
EM1709371-009	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0002	0.0001	74.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.056	0.056	0.00	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.078	0.080	3.62	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.028	0.028	0.00	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.379	0.376	0.618	0% - 20%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.599	0.599	0.00	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.077	0.078	2.42	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.123	0.126	1.83	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	24.3	25.1	3.13	0% - 20%



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020T: Total Metals by ICP-MS (QC Lot: 1040326) - continued</b>									
EM1709371-009	Anonymous	EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	61.6	56.8	8.06	0% - 20%
EM1710441-003	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.217	0.217	0.00	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.04	0.04	0.00	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	2.63	2.60	0.898	0% - 20%
<b>EG020T: Total Metals by ICP-MS (QC Lot: 994613)</b>									
EM1709106-001	GW38_11/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0002	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.011	0.013	12.7	0% - 50%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.092	0.100	7.67	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.035	0.038	8.34	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.065	0.064	0.00	0% - 20%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.537	0.550	2.38	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.128	0.131	2.35	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.248	0.257	3.61	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	20.9	22.9	9.16	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	38.2	41.4	8.17	0% - 20%
EM1709106-010	GW05_11/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0031	0.0028	9.29	0% - 20%
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.040	0.041	2.65	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.079	0.083	4.30	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	1.63	1.75	7.36	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	5.15	5.36	3.89	0% - 20%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.717	0.745	3.80	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.466	0.500	6.84	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	2.44	2.56	4.79	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	21.9	22.0	0.618	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	66.2	67.4	1.84	0% - 20%
<b>EG020T: Total Metals by ICP-MS (QC Lot: 994614)</b>									
EM1709106-023	GW44_11/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.003	0.003	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.008	0.008	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020T: Total Metals by ICP-MS (QC Lot: 994614) - continued</b>									
EM1709106-023	GW44_11/07/17	EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.003	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.054	0.052	3.51	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.064	0.063	2.74	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.010	0.010	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	1.16	1.23	5.69	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	2.74	2.62	4.75	0% - 20%
EM1709168-005	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0002	<0.0002	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.002	<0.002	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.002	<0.002	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.003	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.002	<0.002	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.006	0.007	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.002	<0.002	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.016	0.020	24.1	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.03	0.05	29.9	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.02	<0.02	0.00	No Limit
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit		
<b>EG020T: Total Metals by ICP-MS (QC Lot: 996704)</b>									
EM1709066-038	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.03	0.03	0.00	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit
EM1709175-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.616	0.610	1.07	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.003	0.003	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.542	0.533	1.77	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.623	0.599	3.88	0% - 20%
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.02	0.02	0.00	No Limit		





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020T: Total Metals by ICP-MS (QC Lot: 996704) - continued</b>									
EM1709175-001	Anonymous	EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit
<b>EG020T: Total Metals by ICP-MS (QC Lot: 997181)</b>									
EM1709106-025	QC102_11/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.004	114	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.03	87.0	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.05	0.00	No Limit		
EM1709206-002	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0006	0.0004	28.9	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.049	0.047	2.85	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.128	0.122	4.57	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.339	0.328	3.24	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.062	0.060	3.47	0% - 20%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	1.28	1.24	3.76	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.090	0.090	0.00	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.570	0.559	1.92	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	53.4	51.9	2.80	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	0.02	0.02	0.00	No Limit
EG020A-T: Iron	7439-89-6	0.05	mg/L	77.6	74.5	4.06	0% - 20%		
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 994605)</b>									
EM1709106-012	GW03_11/07/17	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709106-001	GW38_11/07/17	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 996716)</b>									
EM1709106-026	GW54_11/07/17	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709192-010	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1042877)</b>									
EM1709106-028	QC306_11/07/17	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 996941)</b>									
EM1709001-019	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709106-008	QC304_11/07/17	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 996942)</b>									
EM1709106-021	GW40_11/07/17	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709187-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 999799)</b>									
EM1709009-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EK040P: Fluoride by PC Titrator (QC Lot: 994065)</b>									
EM1709088-010	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	<0.1	0.00	No Limit
EM1709106-006	GW23_11/07/17	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.3	0.2	0.00	No Limit
<b>EK040P: Fluoride by PC Titrator (QC Lot: 994071)</b>									
EM1709107-008	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.7	<0.1	150	No Limit
EM1709106-020	GW39_11/07/17	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.2	0.1	0.00	No Limit
<b>EK040P: Fluoride by PC Titrator (QC Lot: 999216)</b>									
EM1709192-006	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.4	0.4	0.00	No Limit
EM1709192-019	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.4	0.5	0.00	No Limit
<b>EK055G: Ammonia as N by Discrete Analyser (QC Lot: 994091)</b>									
EM1709106-002	GW33_11/07/17	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	7.86	8.44	7.08	0% - 20%
EM1709061-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.38	0.37	0.00	0% - 20%
<b>EK055G: Ammonia as N by Discrete Analyser (QC Lot: 994094)</b>									
EM1709106-014	QC203_11/07/17	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.03	0.02	58.8	No Limit
<b>EK055G: Ammonia as N by Discrete Analyser (QC Lot: 996684)</b>									
EM1709201-003	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.02	0.05	75.8	No Limit
EM1709106-026	GW54_11/07/17	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	6.90	5.02	31.7	0% - 50%
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 993990)</b>									
EM1709088-010	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EM1709106-006	GW23_11/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.01	0.01	0.00	No Limit
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 993994)</b>									
EM1709106-011	GW09_11/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.01	0.00	No Limit
EM1709106-022	GW50_11/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.02	0.02	0.00	No Limit
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 996586)</b>									
EM1709163-004	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.04	0.04	0.00	No Limit
EM1709106-026	GW54_11/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 994093)</b>									
EM1709106-001	GW38_11/07/17	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	2.18	2.11	3.20	0% - 20%
EM1709106-011	GW09_11/07/17	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.35	0.35	0.00	0% - 20%
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 996683)</b>									
EM1709163-004	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	12.6	12.3	2.31	0% - 20%
EM1709106-026	GW54_11/07/17	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 993993)</b>									
EM1709106-011	GW09_11/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EM1709106-006	GW23_11/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 996585)</b>									
EM1709192-010	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 996585) - continued</b>										
EM1709106-026	GW54_11/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.05	0.04	35.3	No Limit	
<b>EP005: Total Organic Carbon (TOC) (QC Lot: 1000199)</b>										
EM1709009-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	3	3	0.00	No Limit	
EM1709106-007	GW22_11/07/17	EP005: Total Organic Carbon	----	1	mg/L	23	28	19.5	0% - 20%	
<b>EP005: Total Organic Carbon (TOC) (QC Lot: 1000200)</b>										
EM1709106-022	GW50_11/07/17	EP005: Total Organic Carbon	----	1	mg/L	64	68	5.90	0% - 20%	
EM1709192-006	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	11	11	0.00	0% - 50%	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 993596)</b>										
EM1709106-001	GW38_11/07/17	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit			
EM1709106-012	GW03_11/07/17	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit			
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 993599)</b>										
EM1709106-021	GW40_11/07/17	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 993599) - continued</b>										
EM1709106-021	GW40_11/07/17	EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit			
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 996244)</b>										
EM1709106-026	GW54_11/07/17	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit			
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit			
<b>EP074B: Oxygenated Compounds (QC Lot: 993596)</b>										
EM1709106-001	GW38_11/07/17	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit	
EM1709106-012	GW03_11/07/17	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit	



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074B: Oxygenated Compounds (QC Lot: 993596) - continued</b>									
EM1709106-012	GW03_11/07/17	EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 993599)</b>									
EM1709106-021	GW40_11/07/17	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 996244)</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 993596)</b>									
EM1709106-001	GW38_11/07/17	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
EM1709106-012	GW03_11/07/17	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 993599)</b>									
EM1709106-021	GW40_11/07/17	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 996244)</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
<b>EP074D: Fumigants (QC Lot: 993596)</b>									
EM1709106-001	GW38_11/07/17	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
EM1709106-012	GW03_11/07/17	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
<b>EP074D: Fumigants (QC Lot: 993599)</b>									
EM1709106-021	GW40_11/07/17	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
<b>EP074D: Fumigants (QC Lot: 996244)</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074D: Fumigants (QC Lot: 996244) - continued</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 993596)</b>									
EM1709106-001	GW38_11/07/17	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit		
EM1709106-012	GW03_11/07/17	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit





Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 993596) - continued</b>									
EM1709106-012	GW03_11/07/17	EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit		
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit		
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit		
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 993599)</b>									
EM1709106-021	GW40_11/07/17	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 993599) - continued</b>									
EM1709106-021	GW40_11/07/17	EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 996244)</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 996244) - continued</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Methylene chloride	75-09-2	2	µg/L	<5	<5	0.00	No Limit
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 993596)</b>									
EM1709106-001	GW38_11/07/17	EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
EM1709106-012	GW03_11/07/17	EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
EM1709106-021	GW40_11/07/17	EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 993599)</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 996244)</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 996244) - continued</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: 1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 993596)</b>									
EM1709106-001	GW38_11/07/17	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
EM1709106-012	GW03_11/07/17	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 993599)</b>									
EM1709106-021	GW40_11/07/17	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 996244)</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
<b>EP074H: Naphthalene (QC Lot: 993596)</b>									
EM1709106-001	GW38_11/07/17	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EM1709106-012	GW03_11/07/17	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP074H: Naphthalene (QC Lot: 993599)</b>									
EM1709106-021	GW40_11/07/17	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP074H: Naphthalene (QC Lot: 996244)</b>									
EM1709106-026	GW54_11/07/17	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 996507)</b>									
EM1709210-005	Anonymous	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.00	No Limit



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 996507) - continued</b>										
EM1709210-005	Anonymous	EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	1	µg/L	<1.0	<1.0	0.00	No Limit	
			205-82-3							
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.00	No Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1039998)</b>										
EM1709106-027	QC305_11/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 993595)</b>										
EM1709106-001	GW38_11/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit	
EM1709106-012	GW03_11/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 993598)</b>										
EM1709106-021	GW40_11/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 996243)</b>										
EM1709106-026	GW54_11/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 996508)</b>										
EM1709210-005	Anonymous	EP071: C15 - C28 Fraction	----	100	µg/L	<100	<100	0.00	No Limit	
		EP071: C10 - C14 Fraction	----	50	µg/L	<50	<50	0.00	No Limit	
		EP071: C29 - C36 Fraction	----	50	µg/L	<50	<50	0.00	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1039998)</b>										
EM1709106-027	QC305_11/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 993595)</b>										
EM1709106-001	GW38_11/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
EM1709106-012	GW03_11/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 993598)</b>										
EM1709106-021	GW40_11/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 996243)</b>										
EM1709106-026	GW54_11/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 996508)</b>										
EM1709210-005	Anonymous	EP071: >C10 - C16 Fraction	----	100	µg/L	<100	<100	0.00	No Limit	
		EP071: >C16 - C34 Fraction	----	100	µg/L	<100	<100	0.00	No Limit	
		EP071: >C34 - C40 Fraction	----	100	µg/L	<100	<100	0.00	No Limit	
<b>EP080: BTEXN (QC Lot: 1039998)</b>										
EM1709106-027	QC305_11/07/17	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit	



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP080: BTEXN (QC Lot: 1039998) - continued</b>									
EM1709106-027	QC305_11/07/17	EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP080: BTEXN (QC Lot: 993595)</b>									
EM1709106-001	GW38_11/07/17	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
EM1709106-012	GW03_11/07/17	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
			106-42-3						
EM1709106-021	GW40_11/07/17	EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
<b>EP080: BTEXN (QC Lot: 996243)</b>									
EM1709106-026	GW54_11/07/17		106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 996762)</b>									
EB1714168-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.24	0.24	0.00	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 996762) - continued</b>									
EB1714168-001	Anonymous	EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
ES1717106-006	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 996762)</b>									
EB1714168-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.14	0.14	0.00	0% - 50%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.04	0.04	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.03	0.03	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
ES1717106-006	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
<b>EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 996762)</b>									
EB1714168-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	0.04	0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 996762) - continued</b>									
EB1714168-001	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
ES1717106-006	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 996762)</b>									
EB1714168-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
ES1717106-006	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231P: PFAS Sums (QC Lot: 996762)</b>									
EB1714168-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.49	0.50	2.02	0% - 20%
ES1717106-006	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit



### Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 993900)</b>									
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	100	95	105	
				<10	293 mg/L	96.9	95	105	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 993905)</b>									
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	101	95	105	
				<10	293 mg/L	105	95	105	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 996492)</b>									
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	101	95	105	
				<10	293 mg/L	97.6	95	105	
<b>ED037P: Alkalinity by PC Titrator (QCLot: 994066)</b>									
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	90.6	88	109	
<b>ED037P: Alkalinity by PC Titrator (QCLot: 994072)</b>									
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	97.6	88	109	
<b>ED037P: Alkalinity by PC Titrator (QCLot: 999215)</b>									
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	95.6	88	109	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 993991)</b>									
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	109	92	115	
				<1	100 mg/L	104	92	115	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 993995)</b>									
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	109	92	115	
				<1	100 mg/L	105	92	115	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 996588)</b>									
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	111	92	115	
				<1	100 mg/L	103	92	115	
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 996723)</b>									
ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	<1	500 mg/L	113	82	122	
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 996724)</b>									
ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	<1	500 mg/L	122	82	122	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 993992)</b>									
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	108	88	118	
				<1	1000 mg/L	106	88	118	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 993996)</b>									
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	109	88	118	
				<1	1000 mg/L	106	88	118	





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 996587)</b>									
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	113	88	118	
				<1	1000 mg/L	103	88	118	
<b>ED093F: Dissolved Major Cations (QCLot: 994606)</b>									
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	109	93	110	
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	108	91	110	
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	102	90	109	
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	102	89	109	
<b>ED093F: Dissolved Major Cations (QCLot: 996717)</b>									
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	103	93	110	
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	103	91	110	
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	107	90	109	
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	106	89	109	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 994604)</b>									
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	101	93	105	
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	97.7	91	107	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	102	84	104	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	96.3	83	103	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	94.2	82	103	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	98.0	83	105	
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	98.0	83	105	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.7	82	106	
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	96.8	82	109	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	97.0	85	109	
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	98.1	94	106	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 996715)</b>									
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	98.0	93	105	
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	96.3	91	107	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	92.9	84	104	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	90.8	83	103	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	93.3	82	103	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	92.2	83	105	
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	91.8	83	105	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	93.9	82	106	
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	91.8	82	109	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	97.1	85	109	
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	99.5	94	106	
<b>EG020T: Total Metals by ICP-MS (QCLot: 1040326)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	110	80	120	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EG020T: Total Metals by ICP-MS (QCLot: 1040326) - continued</b>									
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	108	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	104	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	98.1	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	98.8	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	105	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	103	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	102	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	104	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	101	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	100.0	80	120	
<b>EG020T: Total Metals by ICP-MS (QCLot: 994613)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	106	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	102	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.3	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	98.9	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	97.4	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	101	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	101	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	101	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	101	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	100	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	101	80	120	
<b>EG020T: Total Metals by ICP-MS (QCLot: 994614)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	102	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	102	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.4	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	102	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	101	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	101	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	103	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	106	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	102	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	99.7	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	104	80	120	
<b>EG020T: Total Metals by ICP-MS (QCLot: 996704)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	99.4	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	101	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	98.3	86	111	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EG020T: Total Metals by ICP-MS (QCLot: 996704) - continued</b>									
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	95.7	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	97.8	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	100	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	100	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	96.4	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	94.8	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	99.2	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	99.1	80	120	
<b>EG020T: Total Metals by ICP-MS (QCLot: 997181)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	96.2	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	104	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	92.4	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	102	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	99.1	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	95.2	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	99.9	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	98.6	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	94.0	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	100	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	108	80	120	
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 994605)</b>									
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	87.4	81	114	
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 996716)</b>									
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	94.4	81	114	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1042877)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	89.2	81	114	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 996941)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	84.7	81	114	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 996942)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	85.4	81	114	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 999799)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	93.7	81	114	
<b>EK040P: Fluoride by PC Titrator (QCLot: 994065)</b>									
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	107	85	112	
<b>EK040P: Fluoride by PC Titrator (QCLot: 994071)</b>									
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	108	85	112	
<b>EK040P: Fluoride by PC Titrator (QCLot: 999216)</b>									





Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
<b>EK040P: Fluoride by PC Titrator (QCLot: 999216) - continued</b>								
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	92.4	85	112
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 994091)</b>								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	102	80	115
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 994094)</b>								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	95.2	80	115
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 996684)</b>								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	105	80	115
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 993990)</b>								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	95.8	94	107
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 993994)</b>								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	105	94	107
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 996586)</b>								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	102	94	107
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 994093)</b>								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	110	89	114
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 996683)</b>								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	109	89	114
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 993993)</b>								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	102	94	108
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 996585)</b>								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	104	94	108
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1000199)</b>								
EP005: Total Organic Carbon	----	1	mg/L	<1	100 mg/L	92.9	81	109
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1000200)</b>								
EP005: Total Organic Carbon	----	1	mg/L	<1	100 mg/L	94.0	81	109
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1031120)</b>								
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	98.7	81	119
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	97.4	84	117
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	97.1	83	114
EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	40 µg/L	96.4	81	116
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	101	82	118
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	98.9	85	115
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	95.8	81	113
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	93.9	76	111
EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	92.8	79	109
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	93.6	77	111



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1031120) - continued</b>									
EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	91.6	79	108	
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	95.6	80	110	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	90.0	75	111	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	86.2	68	111	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 993596)</b>									
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	98.7	81	119	
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	97.4	84	117	
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	97.1	83	114	
EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	40 µg/L	96.4	81	116	
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	101	82	118	
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	98.9	85	115	
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	95.8	81	113	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	93.9	76	111	
EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	92.8	79	109	
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	93.6	77	111	
EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	91.6	79	108	
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	95.6	80	110	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	90.0	75	111	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	86.2	68	111	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 993599)</b>									
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	92.0	81	119	
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	92.5	84	117	
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	90.6	83	114	
EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	40 µg/L	90.0	81	116	
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	95.5	82	118	
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	93.5	85	115	
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	89.5	81	113	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	88.1	76	111	
EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	87.4	79	109	
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	87.2	77	111	
EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	87.1	79	108	
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	89.8	80	110	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	85.9	75	111	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	81.4	68	111	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 996244)</b>									
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	98.5	81	119	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 996244) - continued</b>									
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	99.6	84	117	
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	98.5	83	114	
EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	40 µg/L	97.9	81	116	
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	100	82	118	
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	99.6	85	115	
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	99.1	81	113	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	94.7	76	111	
EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	94.1	79	109	
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	96.9	77	111	
EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	92.3	79	108	
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	95.6	80	110	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	93.4	75	111	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	89.2	68	111	
<b>EP074B: Oxygenated Compounds (QCLot: 1031120)</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	78.8	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	101	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	97.3	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	113	73	128	
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	101	75	129	
<b>EP074B: Oxygenated Compounds (QCLot: 993596)</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	78.8	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	101	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	97.3	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	113	73	128	
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	101	75	129	
<b>EP074B: Oxygenated Compounds (QCLot: 993599)</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	80.3	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	93.8	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	96.2	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	109	73	128	
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	99.7	75	129	
<b>EP074B: Oxygenated Compounds (QCLot: 996244)</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	108	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	92.6	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	105	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	101	73	128	
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	105	75	129	





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074C: Sulfonated Compounds (QCLot: 1031120)</b>									
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	92.5	64	119	
<b>EP074C: Sulfonated Compounds (QCLot: 993596)</b>									
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	92.5	64	119	
<b>EP074C: Sulfonated Compounds (QCLot: 993599)</b>									
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	82.4	64	119	
<b>EP074C: Sulfonated Compounds (QCLot: 996244)</b>									
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	91.9	64	119	
<b>EP074D: Fumigants (QCLot: 1031120)</b>									
EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	94.5	74	117	
EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	98.3	83	118	
EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	96.0	74	109	
EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	98.6	70	109	
EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	97.6	81	116	
<b>EP074D: Fumigants (QCLot: 993596)</b>									
EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	94.5	74	117	
EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	98.3	83	118	
EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	96.0	74	109	
EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	98.6	70	109	
EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	97.6	81	116	
<b>EP074D: Fumigants (QCLot: 993599)</b>									
EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	82.6	74	117	
EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	93.2	83	118	
EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	89.4	74	109	
EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	92.5	70	109	
EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	96.7	81	116	
<b>EP074D: Fumigants (QCLot: 996244)</b>									
EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	94.2	74	117	
EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	96.7	83	118	
EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	90.2	74	109	
EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	89.7	70	109	
EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	97.2	81	116	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1031120)</b>									
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	105	61	137	
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	106	66	137	
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	99.4	67	135	
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	93.8	52	128	
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	88.8	76	125	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1031120) - continued</b>									
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	95.6	74	123	
EP074-WF: 1.1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	94.9	75	120	
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	67.5	37	120	
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	20 µg/L	118	72	159	
EP074-WF: trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	94.7	78	117	
EP074-WF: 1.1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	97.0	81	118	
EP074-WF: cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	96.5	83	118	
EP074-WF: 1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	94.9	76	115	
EP074-WF: 1.1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	94.4	75	117	
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	90.2	72	111	
EP074-WF: 1.2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	101	81	120	
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	87.4	78	116	
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	99.5	79	116	
EP074-WF: 1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	98.3	85	119	
EP074-WF: 1.3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	102	85	119	
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	92.1	76	120	
EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	93.1	78	110	
EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	114	64	118	
EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	102	51	113	
EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	104	85	121	
EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	106	84	118	
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	89.8	64	109	
EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	101	65	115	
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	91.0	70	121	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 993596)</b>									
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	105	61	137	
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	106	66	137	
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	99.4	67	135	
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	93.8	52	128	
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	88.8	76	125	
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	95.6	74	123	
EP074-WF: 1.1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	94.9	75	120	
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	67.5	37	120	
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	20 µg/L	118	72	159	
EP074-WF: trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	94.7	78	117	
EP074-WF: 1.1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	97.0	81	118	
EP074-WF: cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	96.5	83	118	
EP074-WF: 1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	94.9	76	115	
EP074-WF: 1.1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	94.4	75	117	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 993596) - continued</b>									
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	90.2	72	111	
EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	101	81	120	
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	87.4	78	116	
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	99.5	79	116	
EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	98.3	85	119	
EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	102	85	119	
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	92.1	76	120	
EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	93.1	78	110	
EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	114	64	118	
EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	102	51	113	
EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	104	85	121	
EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	106	84	118	
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	89.8	64	109	
EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	101	65	115	
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	91.0	70	121	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 993599)</b>									
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	86.1	61	137	
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	91.4	66	137	
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	82.7	67	135	
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	78.3	52	128	
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	78.7	76	125	
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	86.1	74	123	
EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	86.7	75	120	
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	61.8	37	120	
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	20 µg/L	107	72	159	
EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	87.2	78	117	
EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	89.9	81	118	
EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	90.3	83	118	
EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	87.6	76	115	
EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	87.3	75	117	
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	82.3	72	111	
EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	96.3	81	120	
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	80.5	78	116	
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	96.5	79	116	
EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	95.2	85	119	
EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	97.3	85	119	
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	87.9	76	120	
EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	87.4	78	110	
EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	103	64	118	





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 993599) - continued</b>									
EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	92.5	51	113	
EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	98.8	85	121	
EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	100	84	118	
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	81.3	64	109	
EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	97.9	65	115	
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	83.6	70	121	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 996244)</b>									
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	98.9	61	137	
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	86.1	66	137	
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	92.7	67	135	
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	74.1	52	128	
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	87.8	76	125	
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	98.7	74	123	
EP074-WF: 1.1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	101	75	120	
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	40.8	37	120	
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	20 µg/L	110	72	159	
EP074-WF: trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	99.6	78	117	
EP074-WF: 1.1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	101	81	118	
EP074-WF: cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	100	83	118	
EP074-WF: 1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	96.6	76	115	
EP074-WF: 1.1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	96.5	75	117	
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	91.0	72	111	
EP074-WF: 1.2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	100	81	120	
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	90.2	78	116	
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	98.0	79	116	
EP074-WF: 1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	99.2	85	119	
EP074-WF: 1.3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	100.0	85	119	
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	93.0	76	120	
EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	92.5	78	110	
EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	93.0	64	118	
EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	84.2	51	113	
EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	101	85	121	
EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	103	84	118	
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	86.8	64	109	
EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	89.5	65	115	
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	88.6	70	121	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 1031120)</b>									
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	99.1	85	115	
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	87.8	82	116	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 1031120) - continued</b>									
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	95.5	81	112	
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	94.6	80	110	
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	92.4	80	110	
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	92.9	80	112	
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	97.2	84	111	
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	85.7	70	114	
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	92.0	78	116	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 993596)</b>									
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	99.1	85	115	
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	87.8	82	116	
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	95.5	81	112	
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	94.6	80	110	
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	92.4	80	110	
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	92.9	80	112	
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	97.2	84	111	
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	85.7	70	114	
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	92.0	78	116	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 993599)</b>									
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	93.1	85	115	
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	84.9	82	116	
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	90.6	81	112	
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	89.6	80	110	
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	86.4	80	110	
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	88.8	80	112	
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	91.4	84	111	
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	82.0	70	114	
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	89.0	78	116	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 996244)</b>									
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	99.6	85	115	
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	87.6	82	116	
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	95.3	81	112	
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	94.1	80	110	
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	91.8	80	110	
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	92.3	80	112	
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	94.3	84	111	
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	82.6	70	114	
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	88.9	78	116	
<b>EP074G: Trihalomethanes (QCLot: 1031120)</b>									



Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP074G: Trihalomethanes (QCLot: 1031120) - continued</b>									
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	95.3	82	118	
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	95.7	75	112	
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	89.9	73	108	
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	91.8	68	107	
<b>EP074G: Trihalomethanes (QCLot: 993596)</b>									
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	95.3	82	118	
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	95.7	75	112	
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	89.9	73	108	
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	91.8	68	107	
<b>EP074G: Trihalomethanes (QCLot: 993599)</b>									
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	89.8	82	118	
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	89.6	75	112	
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	84.3	73	108	
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	84.4	68	107	
<b>EP074G: Trihalomethanes (QCLot: 996244)</b>									
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	101	82	118	
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	90.2	75	112	
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	85.7	73	108	
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	82.7	68	107	
<b>EP074H: Naphthalene (QCLot: 1031120)</b>									
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	99.3	80	116	
<b>EP074H: Naphthalene (QCLot: 993596)</b>									
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	99.3	80	116	
<b>EP074H: Naphthalene (QCLot: 993599)</b>									
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	96.2	80	116	
<b>EP074H: Naphthalene (QCLot: 996244)</b>									
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	95.4	80	116	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 993928)</b>									
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	79.2	39	110	
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	79.0	40	124	
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	82.5	47	117	
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	83.6	51	118	
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	86.9	53	119	
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	63.3	51	113	
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	87.2	59	123	
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	86.4	58	123	
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	78.1	52	126	





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 993928) - continued</b>									
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	84.3	55	123	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	84.2	52	131	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	89.5	57	126	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	83.5	56	126	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	89.9	53	123	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	88.8	53	125	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	88.4	53	125	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 993929)</b>									
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	93.4	39	110	
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	91.1	40	124	
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	98.2	47	117	
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	102	51	118	
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	99.9	53	119	
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	68.5	51	113	
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	103	59	123	
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	101	58	123	
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	94.4	52	126	
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	103	55	123	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	98.3	52	131	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	104	57	126	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	94.6	56	126	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	99.5	53	123	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	99.8	53	125	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	103	53	125	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 996507)</b>									
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	82.7	39	110	
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	86.2	40	124	
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	87.9	47	117	
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	89.4	51	118	
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	92.0	53	119	
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	65.8	51	113	
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	94.0	59	123	
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	95.0	58	123	
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	91.4	52	126	
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	98.0	55	123	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	96.4	52	131	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	High
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 996507) - continued</b>									
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	101	57	126	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	92.2	56	126	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	93.6	53	123	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	93.1	53	125	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	94.8	53	125	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1039998)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	93.7	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 993595)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	88.5	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 993598)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	86.4	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 993927)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	101	53	123	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	100	57	133	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	90.9	55	141	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 993930)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	89.8	53	123	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	91.1	57	133	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	82.7	55	141	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996243)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	95.0	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996508)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	87.8	53	123	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	86.0	57	133	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	77.2	55	141	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1039998)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	91.8	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 993595)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	87.5	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 993598)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	84.4	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 993927)</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	98.2	54	122	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	93.4	56	132	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	96.5	51	137	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 993930)</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	88.8	54	122	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 993930) - continued</b>									
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	85.8	56	132	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	88.3	51	137	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996243)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	94.3	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996508)</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	67.6	54	122	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	80.9	56	132	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	83.5	51	137	
<b>EP080: BTEXN (QCLot: 1039998)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	95.5	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	97.1	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	95.0	72	124	
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	40 µg/L	97.8	72	130	
	106-42-3								
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	100	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	106	71	129	
<b>EP080: BTEXN (QCLot: 993595)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	96.8	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	94.8	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	93.4	72	124	
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	40 µg/L	91.9	72	130	
	106-42-3								
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	96.5	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	94.0	71	129	
<b>EP080: BTEXN (QCLot: 993598)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	92.6	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	92.3	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	91.6	72	124	
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	40 µg/L	89.9	72	130	
	106-42-3								
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	93.4	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	99.2	71	129	
<b>EP080: BTEXN (QCLot: 996243)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	97.1	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	98.3	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	95.3	72	124	
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	40 µg/L	94.8	72	130	
	106-42-3								





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP080: BTEXN (QCLot: 996243) - continued</b>									
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	98.0	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	99.2	71	129	
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 996762)</b>									
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.5 µg/L	82.4	70	130	
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.5 µg/L	91.8	70	130	
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.5 µg/L	103	70	130	
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.5 µg/L	113	70	130	
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.5 µg/L	111	70	130	
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	111	70	130	
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 996762)</b>									
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	2.5 µg/L	92.6	70	130	
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	87.6	70	130	
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	97.2	70	130	
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	101	70	130	
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	111	70	130	
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	116	70	130	
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	113	70	130	
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	114	70	130	
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	113	70	130	
EP231X: Perfluorotridecanoic acid (PFTriDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	127	70	130	
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	132	70	150	
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 996762)</b>									
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	130	70	130	
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	106	70	150	
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	123	70	150	
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	1.25 µg/L	107	70	150	
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	111	70	150	
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	92.6	70	130	
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	102	70	130	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 996762)</b>									
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.5 µg/L	98.2	70	130	
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.5 µg/L	130	70	130	
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.5 µg/L	127	70	130	
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.5 µg/L	126	70	130	



### Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery(%) MS	Recovery Limits (%)	
						Low	High
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 993991)</b>							
EM1709099-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	85.3	70	130
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 993995)</b>							
EM1709106-023	GW44_11/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70	130
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 996588)</b>							
EM1709162-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	73.6	70	130
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 996723)</b>							
EM1709106-002	GW33_11/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	500 mg/L	114	70	130
<b>ED045G: Chloride by Discrete Analyser (QCLot: 993992)</b>							
EM1709099-001	Anonymous	ED045G: Chloride	16887-00-6	400 mg/L	97.4	70	130
<b>ED045G: Chloride by Discrete Analyser (QCLot: 993996)</b>							
EM1709106-023	GW44_11/07/17	ED045G: Chloride	16887-00-6	400 mg/L	# Not Determined	70	130
<b>ED045G: Chloride by Discrete Analyser (QCLot: 996587)</b>							
EM1709162-001	Anonymous	ED045G: Chloride	16887-00-6	400 mg/L	85.6	70	130
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 994604)</b>							
EM1709106-001	GW38_11/07/17	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	108	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	111	81	133
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	103	71	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	104	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	104	75	133
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	104	64	134
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	104	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	105	75	131
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 996715)</b>							
EM1709106-026	GW54_11/07/17	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	103	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	97.3	81	133
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	96.5	71	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	95.7	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	95.2	75	133
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	80.0	64	134
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	98.5	73	131



Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 996715) - continued</b>							
EM1709106-026	GW54_11/07/17	EG020A-F: Zinc	7440-66-6	0.2 mg/L	97.0	75	131
<b>EG020T: Total Metals by ICP-MS (QCLot: 1040326)</b>							
EM1709106-028	QC306_11/07/17	EG020A-T: Arsenic	7440-38-2	1 mg/L	112	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	109	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	98.4	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	97.7	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	109	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	106	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	106	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	107	74	116
<b>EG020T: Total Metals by ICP-MS (QCLot: 994613)</b>							
EM1709106-001	GW38_11/07/17	EG020A-T: Arsenic	7440-38-2	1 mg/L	98.1	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	93.5	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	95.5	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	97.7	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	101	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	96.7	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	102	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	98.7	74	116
<b>EG020T: Total Metals by ICP-MS (QCLot: 994614)</b>							
EM1709106-023	GW44_11/07/17	EG020A-T: Arsenic	7440-38-2	1 mg/L	109	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	92.2	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	98.6	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	101	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	103	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	98.1	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	104	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	96.0	74	116
<b>EG020T: Total Metals by ICP-MS (QCLot: 996704)</b>							
EM1709066-038	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	91.9	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	88.5	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	89.4	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	88.7	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	93.2	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	90.4	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	89.5	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	88.5	74	116
<b>EG020T: Total Metals by ICP-MS (QCLot: 997181)</b>							





Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EG020T: Total Metals by ICP-MS (QCLot: 997181) - continued</b>							
EM1709106-025	QC102_11/07/17	EG020A-T: Arsenic	7440-38-2	1 mg/L	103	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	97.2	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	101	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	101	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	102	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	97.8	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	104	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	102	74	116
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 994605)</b>							
EM1709106-003	GW36_11/07/17	EG035F: Mercury	7439-97-6	0.01 mg/L	87.3	70	120
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 996716)</b>							
EM1709191-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	84.8	70	120
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1042877)</b>							
EM1710257-044	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	89.6	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 996941)</b>							
EM1709099-001	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	85.2	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 996942)</b>							
EM1709106-022	GW50_11/07/17	EG035T: Mercury	7439-97-6	0.01 mg/L	85.8	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 999799)</b>							
EM1709009-002	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	84.4	70	130
<b>EK040P: Fluoride by PC Titrator (QCLot: 994065)</b>							
EM1709088-004	Anonymous	EK040P: Fluoride	16984-48-8	5 mg/L	94.0	70	130
<b>EK040P: Fluoride by PC Titrator (QCLot: 994071)</b>							
EM1709106-012	GW03_11/07/17	EK040P: Fluoride	16984-48-8	5 mg/L	108	70	130
<b>EK040P: Fluoride by PC Titrator (QCLot: 999216)</b>							
EM1709192-001	Anonymous	EK040P: Fluoride	16984-48-8	5 mg/L	95.2	70	130
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 994091)</b>							
EM1709088-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	102	70	130
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 994094)</b>							
EM1709106-015	GW11_11/07/17	EK055G: Ammonia as N	7664-41-7	1 mg/L	118	70	130
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 996684)</b>							
EM1709162-001	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	83.2	70	130
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 993990)</b>							
EM1709106-002	GW33_11/07/17	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	96.1	80	114



Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 993994)</b>							
EM1709106-012	GW03_11/07/17	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	94.6	80	114
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 996586)</b>							
EM1709161-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	110	80	114
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 994093)</b>							
EM1709106-002	GW33_11/07/17	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	106	70	130
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 993993)</b>							
EM1709106-002	GW33_11/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	102	79	123
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 996585)</b>							
EM1709191-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	102	79	123
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1000199)</b>							
EM1709009-002	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	94.0	80	114
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1000200)</b>							
EM1709106-023	GW44_11/07/17	EP005: Total Organic Carbon	----	100 mg/L	95.0	80	114
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 993596)</b>							
EM1709106-002	GW33_11/07/17	EP074-WF: Benzene	71-43-2	20 µg/L	99.9	76	128
		EP074-WF: Toluene	108-88-3	20 µg/L	98.9	72	132
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 993599)</b>							
EM1709106-022	GW50_11/07/17	EP074-WF: Benzene	71-43-2	20 µg/L	114	76	128
		EP074-WF: Toluene	108-88-3	20 µg/L	115	72	132
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 996244)</b>							
EM1709191-001	Anonymous	EP074-WF: Benzene	71-43-2	20 µg/L	94.5	76	128
		EP074-WF: Toluene	108-88-3	20 µg/L	97.6	72	132
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 993596)</b>							
EM1709106-002	GW33_11/07/17	EP074-WF: 1,1-Dichloroethene	75-35-4	20 µg/L	100	63	129
		EP074-WF: Trichloroethene	79-01-6	20 µg/L	86.0	64	126
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 993599)</b>							
EM1709106-022	GW50_11/07/17	EP074-WF: 1,1-Dichloroethene	75-35-4	20 µg/L	# 122	63	129
		EP074-WF: Trichloroethene	79-01-6	20 µg/L	96.6	64	126
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 996244)</b>							
EM1709191-001	Anonymous	EP074-WF: 1,1-Dichloroethene	75-35-4	20 µg/L	99.0	63	129
		EP074-WF: Trichloroethene	79-01-6	20 µg/L	81.0	64	126
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 993596)</b>							
EM1709106-002	GW33_11/07/17	EP074-WF: Chlorobenzene	108-90-7	20 µg/L	101	81	119
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 993599)</b>							



Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 993599) - continued</b>							
EM1709106-022	GW50_11/07/17	EP074-WF: Chlorobenzene	108-90-7	20 µg/L	95.7	81	119
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 996244)</b>							
EM1709191-001	Anonymous	EP074-WF: Chlorobenzene	108-90-7	20 µg/L	95.8	81	119
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 996507)</b>							
EM1709210-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	5 µg/L	94.8	42	122
		EP075(SIM): Pyrene	129-00-0	5 µg/L	98.5	40	136
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1039998)</b>							
EM1709106-028	QC306_11/07/17	EP080: C6 - C9 Fraction	----	280 µg/L	63.4	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 993595)</b>							
EM1709106-002	GW33_11/07/17	EP080: C6 - C9 Fraction	----	280 µg/L	75.1	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 993598)</b>							
EM1709106-022	GW50_11/07/17	EP080: C6 - C9 Fraction	----	280 µg/L	83.5	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996243)</b>							
EM1709191-001	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	67.7	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996508)</b>							
EM1709210-003	Anonymous	EP071: C10 - C14 Fraction	----	3368 µg/L	100	50	130
		EP071: C15 - C28 Fraction	----	14735 µg/L	98.9	54	136
		EP071: C29 - C36 Fraction	----	7856 µg/L	89.3	50	142
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1039998)</b>							
EM1709106-028	QC306_11/07/17	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	61.3	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 993595)</b>							
EM1709106-002	GW33_11/07/17	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	73.8	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 993598)</b>							
EM1709106-022	GW50_11/07/17	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	79.7	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996243)</b>							
EM1709191-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	67.8	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996508)</b>							
EM1709210-003	Anonymous	EP071: >C10 - C16 Fraction	----	5225 µg/L	97.3	50	128
		EP071: >C16 - C34 Fraction	----	19994 µg/L	93.0	50	150
		EP071: >C34 - C40 Fraction	----	1449 µg/L	96.8	51	159
<b>EP080: BTEXN (QCLot: 1039998)</b>							
EM1709106-028	QC306_11/07/17	EP080: Benzene	71-43-2	20 µg/L	89.4	68	130
		EP080: Toluene	108-88-3	20 µg/L	89.3	72	132
<b>EP080: BTEXN (QCLot: 993595)</b>							





Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EP080: BTEXN (QCLot: 993595) - continued</b>							
EM1709106-002	GW33_11/07/17	EP080: Benzene	71-43-2	20 µg/L	98.7	68	130
		EP080: Toluene	108-88-3	20 µg/L	94.4	72	132
<b>EP080: BTEXN (QCLot: 993598)</b>							
EM1709106-022	GW50_11/07/17	EP080: Benzene	71-43-2	20 µg/L	113	68	130
		EP080: Toluene	108-88-3	20 µg/L	110	72	132
<b>EP080: BTEXN (QCLot: 996243)</b>							
EM1709191-001	Anonymous	EP080: Benzene	71-43-2	20 µg/L	91.2	68	130
		EP080: Toluene	108-88-3	20 µg/L	92.0	72	132
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 996762)</b>							
EB1714168-001	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.5 µg/L	102	50	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.5 µg/L	110	50	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.5 µg/L	110	50	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.5 µg/L	118	50	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	119	50	130
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.5 µg/L	125	50	130
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 996762)</b>							
EB1714168-001	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	91.8	50	130
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	108	50	130
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	106	50	130
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	120	50	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	117	50	130
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	117	50	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	120	50	130
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	128	50	130
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	125	50	130
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	121	50	130
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	108	50	150
		<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 996762)</b>					
EB1714168-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	117	50	130
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	123	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	122	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	1.25 µg/L	117	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	117	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	109	50	130

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 Work Order : EM1709106 Amendment 2  
 Client : AECOM Australia Pty Ltd  
 Project : 60537182



Sub-Matrix: **WATER**

				<i>Matrix Spike (MS) Report</i>			
				<i>Spike</i>	<i>SpikeRecovery(%)</i>	<i>Recovery Limits (%)</i>	
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Concentration</i>	<i>MS</i>	<i>Low</i>	<i>High</i>
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 996762) - continued</b>							
EB1714168-001	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	130	50	130
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 996762)</b>							
EB1714168-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.5 µg/L	121	50	130
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.5 µg/L	117	50	130
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.5 µg/L	109	50	130
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.5 µg/L	120	50	130

## QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM1709106	Page	: 1 of 23
Amendment	: 2		
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: MS AVERYLL COYNE	Telephone	: +61-3-8549 9608
Project	: 60537182	Date Samples Received	: 12-Jul-2017
Site	: ----	Issue Date	: 11-Aug-2017
Sampler	: BH, BP, JM	No. of samples received	: 28
Order number	: Task 3.2	No. of samples analysed	: 28

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

### Summary of Outliers

#### Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

#### Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

#### Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.





**Outliers : Quality Control Samples**

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
<b>Matrix Spike (MS) Recoveries</b>							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	EM1709106--023	GW44_11/07/17	Sulfate as SO4 - Turbidimetric	14808-79-8	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
ED045G: Chloride by Discrete Analyser	EM1709106--023	GW44_11/07/17	Chloride	16887-00-6	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EP074E: Halogenated Aliphatic Compounds	EM1709106--022	GW50_11/07/17	1.1-Dichloroethene	75-35-4	122 %	63-129%	Recovery greater than upper control limit

**Outliers : Analysis Holding Time Compliance**

Matrix: **WATER**

Method	Extraction / Preparation			Analysis			
	Container / Client Sample ID(s)	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EA005P: pH by PC Titrator</b>							
<b>Clear Plastic Bottle - Natural</b>							
GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	----	----	----	13-Jul-2017	11-Jul-2017	2
<b>Clear Plastic Bottle - Natural</b>							
GW54_11/07/17		----	----	----	17-Jul-2017	11-Jul-2017	6
<b>EG035T: Total Recoverable Mercury by FIMS</b>							
<b>Clear Plastic Bottle - Nitric Acid; Unspecified</b>							
QC306_11/07/17		----	----	----	09-Aug-2017	08-Aug-2017	1
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>							
<b>Amber VOC Vial - Sulfuric Acid</b>							
GW29_11/07/17		02-Aug-2017	25-Jul-2017	8	02-Aug-2017	25-Jul-2017	8
<b>EP074B: Oxygenated Compounds</b>							
<b>Amber VOC Vial - Sulfuric Acid</b>							
GW29_11/07/17		02-Aug-2017	25-Jul-2017	8	02-Aug-2017	25-Jul-2017	8
<b>EP074C: Sulfonated Compounds</b>							
<b>Amber VOC Vial - Sulfuric Acid</b>							
GW29_11/07/17		02-Aug-2017	25-Jul-2017	8	02-Aug-2017	25-Jul-2017	8



Matrix: **WATER**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EP074D: Fumigants</b>						
Amber VOC Vial - Sulfuric Acid GW29_11/07/17	02-Aug-2017	25-Jul-2017	8	02-Aug-2017	25-Jul-2017	8
<b>EP074E: Halogenated Aliphatic Compounds</b>						
Amber VOC Vial - Sulfuric Acid GW29_11/07/17	02-Aug-2017	25-Jul-2017	8	02-Aug-2017	25-Jul-2017	8
<b>EP074F: Halogenated Aromatic Compounds</b>						
Amber VOC Vial - Sulfuric Acid GW29_11/07/17	02-Aug-2017	25-Jul-2017	8	02-Aug-2017	25-Jul-2017	8
<b>EP074G: Trihalomethanes</b>						
Amber VOC Vial - Sulfuric Acid GW29_11/07/17	02-Aug-2017	25-Jul-2017	8	02-Aug-2017	25-Jul-2017	8
<b>EP074H: Naphthalene</b>						
Amber VOC Vial - Sulfuric Acid GW29_11/07/17	02-Aug-2017	25-Jul-2017	8	02-Aug-2017	25-Jul-2017	8
<b>EP080/071: Total Petroleum Hydrocarbons</b>						
Amber VOC Vial - Sulfuric Acid QC305_11/07/17, QC306_11/07/17	08-Aug-2017	25-Jul-2017	14	08-Aug-2017	25-Jul-2017	14
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>						
Amber VOC Vial - Sulfuric Acid QC305_11/07/17, QC306_11/07/17	08-Aug-2017	25-Jul-2017	14	08-Aug-2017	25-Jul-2017	14
<b>EP080: BTEXN</b>						
Amber VOC Vial - Sulfuric Acid QC305_11/07/17, QC306_11/07/17	08-Aug-2017	25-Jul-2017	14	08-Aug-2017	25-Jul-2017	14

**Outliers : Frequency of Quality Control Samples**

Matrix: **WATER**

Quality Control Sample Type Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
<b>Laboratory Duplicates (DUP)</b>					
PAH/Phenols (GC/MS - SIM)	1	38	2.63	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	1	58	1.72	10.00	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>					
Nitrite and Nitrate as N (NOx) by Discrete Analyser	1	32	3.13	5.00	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	1	38	2.63	5.00	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	1	21	4.76	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	1	58	1.72	5.00	NEPM 2013 B3 & ALS QC Standard



## Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EA005P: pH by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural (EA005-P)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	11-Jul-2017	*
<b>Clear Plastic Bottle - Natural (EA005-P)</b> GW54_11/07/17		11-Jul-2017	----	----	----	17-Jul-2017	11-Jul-2017	*
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>								
<b>Clear Plastic Bottle - Natural (EA015H)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	18-Jul-2017	✓
<b>Clear Plastic Bottle - Natural (EA015H)</b> GW54_11/07/17		11-Jul-2017	----	----	----	14-Jul-2017	18-Jul-2017	✓





Matrix: WATER

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>ED037P: Alkalinity by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural (ED037-P)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	25-Jul-2017	✓
<b>Clear Plastic Bottle - Natural (ED037-P)</b> GW54_11/07/17		11-Jul-2017	----	----	----	17-Jul-2017	25-Jul-2017	✓
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>								
<b>Clear Plastic Bottle - Natural (ED041G)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	08-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (ED041G)</b> GW54_11/07/17		11-Jul-2017	----	----	----	14-Jul-2017	08-Aug-2017	✓
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>								
<b>Clear Plastic Bottle - Natural (ED043)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17, GW54_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	14-Jul-2017	08-Aug-2017	✓	14-Jul-2017	08-Aug-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>ED045G: Chloride by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Natural (ED045G)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	08-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (ED045G)</b> GW54_11/07/17		11-Jul-2017	----	----	----	14-Jul-2017	08-Aug-2017	✓
<b>ED093F: Dissolved Major Cations</b>								
<b>Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17, GW54_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	17-Jul-2017	08-Aug-2017	✓
<b>EG020F: Dissolved Metals by ICP-MS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	07-Jan-2018	✓
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)</b> GW54_11/07/17		11-Jul-2017	----	----	----	14-Jul-2017	07-Jan-2018	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EG020T: Total Metals by ICP-MS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, QC202_11/07/17, GW40_11/07/17, GW44_11/07/17, GW54_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, QC304_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	14-Jul-2017	07-Jan-2018	✓	14-Jul-2017	07-Jan-2018	✓
<b>Clear Plastic Bottle - Nitric Acid; Unspecified (EG020A-T)</b> QC306_11/07/17		11-Jul-2017	08-Aug-2017	07-Jan-2018	✓	09-Aug-2017	07-Jan-2018	✓
<b>Clear Plastic Bottle - Nitric Acid; Unspecified (EG020A-T)</b> QC102_11/07/17		11-Jul-2017	17-Jul-2017	07-Jan-2018	✓	17-Jul-2017	07-Jan-2018	✓
<b>EG035F: Dissolved Mercury by FIMS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)</b> GW38_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	11-Jul-2017	----	----	----	14-Jul-2017	08-Aug-2017	✓
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)</b> GW54_11/07/17		11-Jul-2017	----	----	----	17-Jul-2017	08-Aug-2017	✓





Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EG035T: Total Recoverable Mercury by FIMS</b>							
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)</b> GW38_11/07/17, GW37_11/07/17, GW23_11/07/17, QC304_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, QC202_11/07/17, GW40_11/07/17, GW44_11/07/17, GW54_11/07/17	11-Jul-2017	----	----	----	17-Jul-2017	08-Aug-2017	✓
<b>Clear Plastic Bottle - Nitric Acid; Unspecified (EG035T)</b> QC102_11/07/17	11-Jul-2017	----	----	----	17-Jul-2017	08-Aug-2017	✓
<b>Clear Plastic Bottle - Nitric Acid; Unspecified (EG035T)</b> QC306_11/07/17	11-Jul-2017	----	----	----	09-Aug-2017	08-Aug-2017	*
<b>EK040P: Fluoride by PC Titrator</b>							
<b>Clear Plastic Bottle - Natural (EK040P)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17, GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	08-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (EK040P)</b> GW54_11/07/17	11-Jul-2017	----	----	----	17-Jul-2017	08-Aug-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EK055G: Ammonia as N by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Sulfuric Acid (EK055G)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	08-Aug-2017	✓
<b>Clear Plastic Bottle - Sulfuric Acid (EK055G)</b> GW54_11/07/17		11-Jul-2017	----	----	----	17-Jul-2017	08-Aug-2017	✓
<b>EK057G: Nitrite as N by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Natural (EK057G)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17, GW54_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	13-Jul-2017	✓
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Sulfuric Acid (EK059G)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	08-Aug-2017	✓
<b>Clear Plastic Bottle - Sulfuric Acid (EK059G)</b> GW54_11/07/17		11-Jul-2017	----	----	----	14-Jul-2017	08-Aug-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>								
<b>Clear Plastic Bottle - Natural (EK071G)</b>								
GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17, GW54_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	13-Jul-2017	13-Jul-2017	✓
<b>EP005: Total Organic Carbon (TOC)</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP005)</b>								
GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17, GW54_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	11-Jul-2017	----	----	----	17-Jul-2017	08-Aug-2017	✓
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b>								
GW29_11/07/17		11-Jul-2017	02-Aug-2017	25-Jul-2017	*	02-Aug-2017	25-Jul-2017	*
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b>								
GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	11-Jul-2017	13-Jul-2017	25-Jul-2017	✓	13-Jul-2017	25-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b>								
GW54_11/07/17		11-Jul-2017	14-Jul-2017	25-Jul-2017	✓	14-Jul-2017	25-Jul-2017	✓





Matrix: WATER

Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP074B: Oxygenated Compounds</b>							
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW29_11/07/17	11-Jul-2017	02-Aug-2017	25-Jul-2017	✘	02-Aug-2017	25-Jul-2017	✘
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17 GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	11-Jul-2017	13-Jul-2017	25-Jul-2017	✔	13-Jul-2017	25-Jul-2017	✔
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW54_11/07/17	11-Jul-2017	14-Jul-2017	25-Jul-2017	✔	14-Jul-2017	25-Jul-2017	✔
<b>EP074C: Sulfonated Compounds</b>							
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW29_11/07/17	11-Jul-2017	02-Aug-2017	25-Jul-2017	✘	02-Aug-2017	25-Jul-2017	✘
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17 GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	11-Jul-2017	13-Jul-2017	25-Jul-2017	✔	13-Jul-2017	25-Jul-2017	✔
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW54_11/07/17	11-Jul-2017	14-Jul-2017	25-Jul-2017	✔	14-Jul-2017	25-Jul-2017	✔



Matrix: **WATER**

Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP074D: Fumigants</b>							
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW29_11/07/17	11-Jul-2017	02-Aug-2017	25-Jul-2017	✘	02-Aug-2017	25-Jul-2017	✘
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17 GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	11-Jul-2017	13-Jul-2017	25-Jul-2017	✔	13-Jul-2017	25-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW54_11/07/17	11-Jul-2017	14-Jul-2017	25-Jul-2017	✔	14-Jul-2017	25-Jul-2017	✔
<b>EP074E: Halogenated Aliphatic Compounds</b>							
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW29_11/07/17	11-Jul-2017	02-Aug-2017	25-Jul-2017	✘	02-Aug-2017	25-Jul-2017	✘
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17 GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	11-Jul-2017	13-Jul-2017	25-Jul-2017	✔	13-Jul-2017	25-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW54_11/07/17	11-Jul-2017	14-Jul-2017	25-Jul-2017	✔	14-Jul-2017	25-Jul-2017	✔



Matrix: **WATER**

Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP074F: Halogenated Aromatic Compounds</b>							
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW29_11/07/17	11-Jul-2017	02-Aug-2017	25-Jul-2017	✘	02-Aug-2017	25-Jul-2017	✘
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17 GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	11-Jul-2017	13-Jul-2017	25-Jul-2017	✔	13-Jul-2017	25-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW54_11/07/17	11-Jul-2017	14-Jul-2017	25-Jul-2017	✔	14-Jul-2017	25-Jul-2017	✔
<b>EP074G: Trihalomethanes</b>							
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW29_11/07/17	11-Jul-2017	02-Aug-2017	25-Jul-2017	✘	02-Aug-2017	25-Jul-2017	✘
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17 GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	11-Jul-2017	13-Jul-2017	25-Jul-2017	✔	13-Jul-2017	25-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW54_11/07/17	11-Jul-2017	14-Jul-2017	25-Jul-2017	✔	14-Jul-2017	25-Jul-2017	✔





Matrix: **WATER** Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP074H: Naphthalene</b>							
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW29_11/07/17	11-Jul-2017	02-Aug-2017	25-Jul-2017	✘	02-Aug-2017	25-Jul-2017	✘
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17 GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17, GW44_11/07/17	11-Jul-2017	13-Jul-2017	25-Jul-2017	✔	13-Jul-2017	25-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW54_11/07/17	11-Jul-2017	14-Jul-2017	25-Jul-2017	✔	14-Jul-2017	25-Jul-2017	✔
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>							
<b>Amber Glass Bottle - Unpreserved (EP075(SIM))</b> GW44_11/07/17, GW49_11/07/17	11-Jul-2017	13-Jul-2017	18-Jul-2017	✔	17-Jul-2017	22-Aug-2017	✔
<b>Amber Glass Bottle - Unpreserved (EP075(SIM))</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW40_11/07/17 GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, GW39_11/07/17, GW50_11/07/17	11-Jul-2017	17-Jul-2017	18-Jul-2017	✔	18-Jul-2017	26-Aug-2017	✔
<b>Amber Glass Bottle - Unpreserved (EP075(SIM))</b> GW54_11/07/17	11-Jul-2017	18-Jul-2017	18-Jul-2017	✔	19-Jul-2017	27-Aug-2017	✔



Matrix: **WATER** Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW44_11/07/17, QC102_11/07/17	GW49_11/07/17,	11-Jul-2017	13-Jul-2017	18-Jul-2017	✔	17-Jul-2017	22-Aug-2017	✔
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, QC202_11/07/17, GW40_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, QC304_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW39_11/07/17, GW50_11/07/17	11-Jul-2017	17-Jul-2017	18-Jul-2017	✔	18-Jul-2017	26-Aug-2017	✔
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW54_11/07/17		11-Jul-2017	18-Jul-2017	18-Jul-2017	✔	19-Jul-2017	27-Aug-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> QC305_11/07/17,	QC306_11/07/17	11-Jul-2017	08-Aug-2017	25-Jul-2017	✘	08-Aug-2017	25-Jul-2017	✘
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, QC205_11/07/17, QC206_11/07/17, GW40_11/07/17, GW44_11/07/17, QC102_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, QC304_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, QC202_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17,	11-Jul-2017	13-Jul-2017	25-Jul-2017	✔	13-Jul-2017	25-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW54_11/07/17		11-Jul-2017	14-Jul-2017	25-Jul-2017	✔	14-Jul-2017	25-Jul-2017	✔



Matrix: **WATER** Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>								
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW44_11/07/17, QC102_11/07/17	GW49_11/07/17,	11-Jul-2017	13-Jul-2017	18-Jul-2017	✔	17-Jul-2017	22-Aug-2017	✔
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, QC202_11/07/17, GW40_11/07/17,	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, QC304_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, GW39_11/07/17, GW50_11/07/17	11-Jul-2017	17-Jul-2017	18-Jul-2017	✔	18-Jul-2017	26-Aug-2017	✔
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW54_11/07/17		11-Jul-2017	18-Jul-2017	18-Jul-2017	✔	19-Jul-2017	27-Aug-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> QC305_11/07/17,	QC306_11/07/17	11-Jul-2017	08-Aug-2017	25-Jul-2017	✘	08-Aug-2017	25-Jul-2017	✘
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, QC205_11/07/17, QC206_11/07/17, GW40_11/07/17, GW44_11/07/17, QC102_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, QC304_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, QC202_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17,	11-Jul-2017	13-Jul-2017	25-Jul-2017	✔	13-Jul-2017	25-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW54_11/07/17		11-Jul-2017	14-Jul-2017	25-Jul-2017	✔	14-Jul-2017	25-Jul-2017	✔





Matrix: **WATER** Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080: BTEXN</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> QC305_11/07/17,	QC306_11/07/17	11-Jul-2017	08-Aug-2017	25-Jul-2017	✘	08-Aug-2017	25-Jul-2017	✘
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW38_11/07/17, GW36_11/07/17, GW28_11/07/17, GW22_11/07/17, GW29_11/07/17, GW09_11/07/17, GW04_11/07/17, GW11_11/07/17, QC205_11/07/17, QC206_11/07/17, GW40_11/07/17, GW44_11/07/17, QC102_11/07/17	GW33_11/07/17, GW37_11/07/17, GW23_11/07/17, QC304_11/07/17, GW05_11/07/17, GW03_11/07/17, QC203_11/07/17, GW06_11/07/17, QC202_11/07/17, GW39_11/07/17, GW50_11/07/17, GW49_11/07/17,	11-Jul-2017	13-Jul-2017	25-Jul-2017	✔	13-Jul-2017	25-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW54_11/07/17		11-Jul-2017	14-Jul-2017	25-Jul-2017	✔	14-Jul-2017	25-Jul-2017	✔
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW38_11/07/17, GW49_11/07/17	GW04_11/07/17,	11-Jul-2017	----	----	----	18-Jul-2017	07-Jan-2018	✔
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW38_11/07/17, GW49_11/07/17	GW04_11/07/17,	11-Jul-2017	----	----	----	18-Jul-2017	07-Jan-2018	✔
<b>EP231C: Perfluoroalkyl Sulfonamides</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW38_11/07/17, GW49_11/07/17	GW04_11/07/17,	11-Jul-2017	----	----	----	18-Jul-2017	07-Jan-2018	✔
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW38_11/07/17, GW49_11/07/17	GW04_11/07/17,	11-Jul-2017	----	----	----	18-Jul-2017	07-Jan-2018	✔
<b>EP231P: PFAS Sums</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW38_11/07/17, GW49_11/07/17	GW04_11/07/17,	11-Jul-2017	----	----	----	18-Jul-2017	07-Jan-2018	✔



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Laboratory Duplicates (DUP)</b>							
Alkalinity by PC Titrator	ED037-P	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	5	39	12.82	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	6	55	10.91	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	4	32	12.50	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	6	52	11.54	10.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	38	2.63	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	19	10.53	10.00	✔	NEPM 2013 B3 & ALS QC Standard
pH by PC Titrator	EA005-P	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	6	50	12.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	10	93	10.75	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	3	21	14.29	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	58	1.72	10.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	5	29	17.24	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	4	22	18.18	10.00	✔	NEPM 2013 B3 & ALS QC Standard
<b>Laboratory Control Samples (LCS)</b>							
Alkalinity by PC Titrator	ED037-P	3	60	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	3	39	7.69	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	6	55	10.91	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	3	60	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	32	6.25	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	3	52	5.77	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	3	38	7.89	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard



Matrix: **WATER** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Control Samples (LCS) - Continued</b>							
Total Dissolved Solids (High Level)	EA015H	6	60	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	50	8.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	5	93	5.38	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	2	21	9.52	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	58	5.17	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	29	13.79	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	4	22	18.18	5.00	✓	NEPM 2013 B3 & ALS QC Standard
<b>Method Blanks (MB)</b>							
Ammonia as N by Discrete analyser	EK055G	3	39	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	3	55	5.45	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	3	60	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	32	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	3	52	5.77	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	3	38	7.89	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	3	60	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	3	60	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	50	8.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	5	93	5.38	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	2	21	9.52	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	58	5.17	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	29	13.79	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	4	22	18.18	5.00	✓	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>							
Ammonia as N by Discrete analyser	EK055G	3	39	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	3	55	5.45	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	3	60	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	32	3.13	5.00	*	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	3	52	5.77	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	38	2.63	5.00	*	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard





Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Matrix Spikes (MS) - Continued</b>							
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	3	60	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	50	8.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	5	93	5.38	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	1	21	4.76	5.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	58	1.72	5.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	29	13.79	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	3	22	13.64	5.00	✔	NEPM 2013 B3 & ALS QC Standard



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by PC Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of 'filterable' residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM (2013) Schedule B(3)
Alkalinity by PC Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM (2013) Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Oxidised Sulfur as SO4 2-	ED043	WATER	In house: The sample is treated with Peroxide to convert all Sulfur species to Sulfate. Sulfate in the sample can then be determined by ICPAES and reported as TOS as SO4 2-.
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm APHA 21st edition seal method 2 017-1-L april 2003
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM (2013) Schedule B(3)  Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM (2013) Schedule B(3)  Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM (2013) Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.



Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Fluoride by PC Titrator	EK040P	WATER	In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3)
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO <sub>2</sub> - B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO <sub>3</sub> - F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined separately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite and Nitrate as N (NO <sub>x</sub> ) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO <sub>3</sub> - F. Combined oxidised Nitrogen (NO <sub>2</sub> +NO <sub>3</sub> ) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with orthophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM (2013) Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Volatile Organic Compounds WF Detection Limits	EP074-WF	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)





<i>Analytical Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with methanol. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers.
<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Total Oxidisable Sulfur as SO4 2- Prep	ED043-PR	WATER	In house
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (2013) Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

ANZ  
**FQM - Generic Chain of Custody Form**

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: JM BP BH		Destination Laboratory	
PROJECT MANAGER (PM): <b>Averyll Coyne</b>		SITE:		MOBILE: 0409536240		PHONE:	
PROJECT NUMBER & TASK CO <b>60537182</b>		P.O. NO.:		EMAIL REPORT TO: Averyll Coyne		ALS	
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite price)			
FOR LABORATORY USE ONLY CARBON SEAL (PFA Approved) PH: Yes No SAMPLE TEMPERATURE: ON/ISSD: Yes No		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:					
		PH, TDS, TOC TRH (C8-40) PAH Nitrogen oxides/sulphur oxides TOC (ALSEPTA-WF) includes BTEXN Ionic chemistry (Na, Ca, Mg, K), (Cl), (NO3), (NO2), (NH4), (SO4), (Mn) PFAS - 28 analytes Dissolved metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg) Total Metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)					
SAMPLE INFORMATION (note: S = Soil, W=Water)		CONTAINER INFORMATION					
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	HOLD
1	GW38-11/7/17	W	11/7/17			12	
2	GW33-11/7/17					10	
3	GW36-11/7/17					10	
4	GW37-11/7/17					10	
5	GW28-11/7/17					10	
6	GW23-11/7/17					10	
7	GW22-11/7/17					10	
8	QC304-11/7/17					4	
9	GW29-11/07/17					10	
10	GW05-11/07/17					10	
11	GW09-11/07/17					10	
12	GW03-11/07/17					10	
13	GW04-11/07/17					10	
14	QC203-11/07/17					10	
15	<del>GW01-11/07/17</del>					10	
16	GW06-11/07/17					10	
17	QC05-11/07/17					4	
18	QC202-11/07/17					4	
RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:		METHOD OF SHIPMENT	
Name: <b>B. Hahnt</b>		Name:		Name:		Con' Note No:	
Date:		Date:		Date:		Transport Co:	
Of: <b>AECOM</b>		Of:		Of:			
Time:		Time:		Time:			

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected".  
 Extra volume for QC or trace LORs etc.

Environmental Division  
 Melbourne  
 Work Order Reference  
**EM1709106**



Telephone : + 61-3-8549 9600


19 QC206-11/07/17

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COC Page 1 of 2

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 12/7, 9.50

ANZ  
**FQM - Generic Chain of Custody Form**

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: JM BP BH		Destination Laboratory									
PROJECT MANAGER (PM): <b>Averyll Coyne</b>		SITE:		MOBILE: 0408536240		PHONE:									
PROJECT NUMBER & TASK CO <b>60537182</b>		P.O. NO.:		EMAIL REPORT TO: <b>Averyll Coyne</b>											
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)											
		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:		PH, TDS, TOC	TRH (CS-40)	PAH	Nitrogen oxides/sulphur	VOC (ALSEP974-WF) includes BTEXN	Inorganic chemistry (Ni, Cr, Mn), (As, Cd, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)	PFAS - 28 analytes	Dissolved metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)	Total Metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)	BTEX	HOLD	Notes: e.g. Highly contaminated sample e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles									
20	GW39-11/07/17	W	11/07/17			10	X	X	X	X	X	X	X		NO PFAS
21	GW40-11/07/17					10	X	X	X	X	X	X	X		
22	GW50-11/07/17					10	X	X	X	X	X	X	X		
23	GW44-11/07/17					10	X	X	X	X	X	X	X		
24	GW49-11/07/17					12	X	X	X	X	X	X	X		
25	QC102-11/07/17					5		X				X	X	X	
Extra samples:															
26	GW54-11/07/17					10									
27	QC305-11/07/17					1									
28	QC306-11/07/17					4									
NP (ALS) 12/17															
RELINQUISHED BY:				RECEIVED BY:				RECEIVED BY:				METHOD OF SHIPMENT			
Name:		Date:		Name:		Date:		Name:		Date:		Corr' Note No:			
Of:		Time:		Of:		Time:		Of:		Time:		Transport Co:			

**Water Container Codes:** P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic  
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;  
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. **Soil Container Codes:** Jar = Unpreserved glass jar

*Handwritten:* LAMU ALS 12/17 9-57



ANZ

FQM - Generic Chain of Custody Form

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: JM BP BH		Destination Laboratory	
PROJECT MANAGER (PM): Averyll Coyne		SITE:		MOBILE: 0409536240		ALS	
PROJECT NUMBER & TASK CO 60537182		P.O. NO.:		EMAIL REPORT TO: Averyll Coyne			
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)			
FOR LABORATORY USE ONLY COMPLETION DATE: 11/07/17 TIME: 12:00 SAMPLE TEMPERATURE: ONLINE:		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:		pH/TDS, TOC		Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.	
SAMPLE INFORMATION (note: S = Soil, W=Water)		CONTAINER INFORMATION		TRH (C6-40)		PAH	
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	
1	GW38-11/7/17	W	11/7/17			12	
2	GW33-11/7/17					10	
3	GW36-11/7/17					10	
4	GW37-11/7/17					10	
5	GW28-11/7/17					10	
6	GW23-11/7/17					10	
7	GW22-11/7/17					10	
8	QC304-11/7/17					4	
9	GW29-11/07/17					10	
10	GW05-11/07/17					10	
11	GW09-11/07/17					10	
12	GW03-11/07/17					10	
13	GW04-11/07/17					12	
14	QC203-11/07/17					10	
15	GW11-11/07/17					10	
16	GW06-11/07/17					10	
17	QC05-11/07/17					4	
18	QC202-11/07/17					4	
RELINQUISHED BY: B. Hent		RECEIVED BY:		RECEIVED BY:		METHOD OF SHIPMENT	
Name:	Date:	Name:	Date:	Name:	Date:	Con' Note No:	
Of:	Time:	Of:	Time:	Of:	Time:	Transport Co:	

Environmental Division  
Melbourne  
Work Order Reference  
**EM1709106**



Telephone: + 61-3-8649 9600

19 QC206-11/07/17

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COC Page 1 of 2

RAM (AM)  
12/7, 9:50

ANZ  
**FQM - Generic Chain of Custody Form**

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: JM BP BH		Destination Laboratory								
PROJECT MANAGER (PM): <b>Averyll Coyne</b>		SITE:		MOBILE: 0409536240		PHONE:								
PROJECT NUMBER & TASK CO 60537182		P.O. NO.:		EMAIL REPORT TO: Averyll Coyne										
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)										
[Redacted]		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:		pH, TDS, TOC	TRH (CL-40)	PAH	Nitrogen oxides/sulphur oxides	VOC (ALSEP074-WF) Includes BTEX	Ionic chemistry (Ni, Cu, Mg), (K, CO), (HCO3), (NO3), (NO2), (NH3) (PC4), (SO4), (F), (Mn)	PFAS - 28 analytes	Dissolved metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)	Total Metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)	Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.	
SAMPLE INFORMATION (note: S = Soil, W=Water)				CONTAINER INFORMATION										
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles								
20	GW39-11/07/17	W	11/07/17			10	X	X	X	X	X	X	X	NO PFAS
21	GW40-11/07/17					10	X	X	X	X	X	X	X	
22	GW50-11/07/17					10	X	X	X	X	X	X	X	
23	GW44-11/07/17					10	X	X	X	X	X	X	X	
24	GW49-11/07/17					12	X	X	X	X	X	X	X	
25	QC102-11/07/17					5	X				X	X	X	
Extra samples:														
26	GW54-11/07/17					10								
27	QC305-11/07/17					1								
28	QC306-11/07/17					4								
NP (AS) 12/17														
RELINQUISHED BY:				RECEIVED BY:				RECEIVED BY:				METHOD OF SHIPMENT		
Name:		Date:		Name:		Date:		Name:		Date:		Con' Note No:		
Of:		Time:		Of:		Time:		Of:		Time:		Transport Co:		
<p><b>Water Container Codes:</b> P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic</p> <p>V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;</p> <p>F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag</p> <p><b>Soil Container Codes:</b> Jar = Unpreserved glass jar</p>														

MANU (AS) 12/17  
 2-50

## Peter Ravlic

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**From:** Muller, Jacob <Jacob.Muller@aecom.com>  
**Sent:** Thursday, 13 July 2017 12:55 PM  
**To:** Peter Ravlic  
**Cc:** Coyne, Averyll  
**Subject:** Re: EM1709106 - AECOMAU - 60537182

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Hi Peter

Thanks Peter, GW54 has been left off the COC accidentally, it is the normal analysis without PFAS.

Regards

Jacob

Sent from my iPhone

On 13 Jul 2017, at 10:55 am, Peter Ravlic <[peter.ravlic@alsglobal.com](mailto:peter.ravlic@alsglobal.com)> wrote:

Hi guys

In relation to the attached samples:

For sample 025 we received 2 x unspecified red metals bottles.

Total and dissolved metals have been requested – please see images attached. Metals analysis has not been organised yet for this sample until confirmed so only TPH/BTEXN added

For samples 008 and 018 we didn't receive a filtered red metals bottle – so only unfiltered metals will be organised for this sample as we did receive the unfiltered metals bottle

As per the previous batch, sulphide and sulphite bottles were rec'd but analysis from these bottles has not been requested

We received extra samples:

(26) GW54\_11/07/17

(27) QC305\_11/07/17

(28) QC306\_11/07/17

These samples are on hold.

Thanks

Regards

**Peter Ravlic**



## CERTIFICATE OF ANALYSIS

**Work Order** : **EM1709192**  
**Client** : **AECOM Australia Pty Ltd**  
**Contact** : **MS AVERYLL COYNE**  
**Address** : **COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET  
MELBOURNE VIC, AUSTRALIA 3004**  
**Telephone** : **+61 03 9653 1234**  
**Project** : **60537182**  
**Order number** : **task 3.2**  
**C-O-C number** : **----**  
**Sampler** : **BH, BP, JM**  
**Site** : **----**  
**Quote number** : **ME/199/16**  
**No. of samples received** : **27**  
**No. of samples analysed** : **26**

**Page** : 1 of 40  
**Laboratory** : Environmental Division Melbourne  
**Contact** : Carol Walsh  
**Address** : 4 Westall Rd Springvale VIC Australia 3171  
**Telephone** : +61-3-8549 9608  
**Date Samples Received** : 13-Jul-2017 11:45  
**Date Analysis Commenced** : 14-Jul-2017  
**Issue Date** : 24-Jul-2017 14:59



Accreditation No. 825  
 Accredited for compliance with  
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

**Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.**

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Chris Lemaitre	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Herman Lin	Laboratory Manager	Melbourne Inorganics, Springvale, VIC
Nancy Wang	Senior Semivolatile Instrument Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC



## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
LOR = Limit of reporting  
^ = This result is computed from individual analyte detections at or above the level of reporting  
ø = ALS is not NATA accredited for these tests.  
~ = Indicates an estimated value.

- TDS by method EA-015 for EM1709192 #11 may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- EP074-WF: Minor 1,1 dichloroethane and cis-1,2-dichloroethylene hits for sample EM1709192\_17 have been confirmed by re-analysis.
- EK057G: Results for EM1709192-001 and 016 have been confirmed by re-preparation and re-analysis.
- EK059G:EM1709192#1,4,12,13,14,16 results for Nitrite and Nitrate as N (NOx) have been confirmed by re-preparation and reanalysis.
- It is recognised that Nitrate and Nitrite as N is less than Nitrite as N for samples EM1709192 #1 and #16. However, the difference is within experimental variation of the methods.
- It is recognised that total metals are less than dissolved metals for samples #11, #13, #16 and #20. However, the difference is within experimental variation of the methods.
- ED041G: Sulphate results for EM1709192-003 and 009 have been confirmed by re-preparation and re-analysis.
- ED041G: Sulphate results for EM1709192-010 and 016 have been confirmed by re-preparation and re-analysis.
- EP080/EP079-CWG/EP074-WF: Particular samples EM1709192\_27 shows minor positive hits. Confirmed by re-analysis.
- EG041G: Sample EM1709192-019 has been diluted prior to analysis due to sample matrix and LORs have been raised accordingly.
- Sample 'MW1371\_02\_12/07/17' was filtered through a 0.45um filter prior to the dissolved metals analysis.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- Ionic balances were calculated using: major anions - chloride, alkalinity, sulfate; and major cations - calcium, magnesium, potassium, sodium and iron for #18.
- ED045G: The presence of thiocyanate can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- (Method code): (WO#) Poor matrix spike recovery for (analyte) due to sample heterogeneity. Confirmed by re-extraction and re-analysis.
- EG035T: EM1709192-002 sample results for total mercury confirmed by re-extraction and re-analysis.
- EG020F: EM1709192-010 & 016 Dissolved Iron result has been confirmed by re-preparation and re-analysis
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW20_12/07/17	GW21_12/07/17	GW12_12/07/17	GW16_12/07/17	GW13_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-001	EM1709192-002	EM1709192-003	EM1709192-004	EM1709192-005	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.54	7.00	7.14	7.13	7.30	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	1600	809	308	687	566	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	735	338	132	394	358	
Total Alkalinity as CaCO3	----	1	mg/L	735	338	132	394	358	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	590	236	90	148	141	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	----	384	----	----	----	
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	1030	----	66	232	196	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	112	44	28	23	19	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	238	90	67	105	111	
Magnesium	7439-95-4	1	mg/L	99	20	9	31	28	
Sodium	7440-23-5	1	mg/L	242	161	25	76	47	
Potassium	7440-09-7	1	mg/L	27	8	7	21	14	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.01	0.03	0.04	<0.01	<0.01	
Arsenic	7440-38-2	0.001	mg/L	0.004	0.002	0.007	0.017	0.006	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	0.003	<0.001	0.001	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Manganese	7439-96-5	0.001	mg/L	0.209	0.181	0.034	0.156	0.135	
Nickel	7440-02-0	0.001	mg/L	0.009	0.009	0.008	0.014	0.020	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Zinc	7440-66-6	0.005	mg/L	0.014	0.035	0.007	0.020	0.052	
Iron	7439-89-6	0.05	mg/L	6.27	10.3	0.53	5.21	1.29	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	2.89	12.6	1.09	10.1	0.78	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW20_12/07/17	GW21_12/07/17	GW12_12/07/17	GW16_12/07/17	GW13_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-001	EM1709192-002	EM1709192-003	EM1709192-004	EM1709192-005	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Arsenic	7440-38-2	0.001	mg/L	0.010	0.033	0.011	0.085	0.027	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.010	0.041	0.004	0.026	0.003	
Copper	7440-50-8	0.001	mg/L	0.008	0.022	0.003	0.014	0.002	
Nickel	7440-02-0	0.001	mg/L	0.015	0.075	0.012	0.038	0.022	
Lead	7439-92-1	0.001	mg/L	0.009	0.086	0.012	0.047	0.012	
Zinc	7440-66-6	0.005	mg/L	0.045	0.114	0.015	0.098	0.054	
Manganese	7439-96-5	0.001	mg/L	0.243	0.261	0.038	0.175	0.145	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	12.8	50.0	2.56	19.6	6.06	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.7	0.5	0.3	0.7	0.6	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	4.29	0.77	0.04	0.18	0.07	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	0.01	0.02	0.02	<0.01	0.03	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	<0.01	0.01	<0.01	0.02	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.02	0.03	<0.01	0.05	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	30.1	12.9	5.30	11.6	10.6	
Total Cations	----	0.01	meq/L	31.2	13.3	5.35	11.6	10.2	
Ionic Balance	----	0.01	%	1.81	1.66	0.46	0.14	1.81	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	16	21	7	11	6	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW20_12/07/17	GW21_12/07/17	GW12_12/07/17	GW16_12/07/17	GW13_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-001	EM1709192-002	EM1709192-003	EM1709192-004	EM1709192-005	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	1	µg/L	<1	<1	<1	<1	<1	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	<1	<1	<1	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	<1	<1	<1	
Styrene	100-42-5	1	µg/L	<1	<1	<1	<1	<1	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	<1	<1	<1	
Isopropylbenzene	98-82-8	1	µg/L	<1	<1	<1	<1	<1	
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	<1	<1	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	<1	<1	<1	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	<1	<1	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	<1	<1	<1	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	<1	<1	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	<1	<1	<1	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	<10	<10	<10	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	<10	<10	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	<10	<10	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	<10	<10	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	<10	<10	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	<10	<10	<10	
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	<10	
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	<10.0	<10.0	<10.0	
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	<10	
Chloroethane	75-00-3	10	µg/L	<10	<10	<10	<10	<10	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW20_12/07/17	GW21_12/07/17	GW12_12/07/17	GW16_12/07/17	GW13_12/07/17
Client sampling date / time					12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709192-001	EM1709192-002	EM1709192-003	EM1709192-004	EM1709192-005	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	<10	
1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	<1	
Iodomethane	74-88-4	1	µg/L	<1	<1	<1	<1	<1	
Methylene chloride	75-09-2	4	µg/L	<4	<4	<4	<4	<4	
trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	<1	<1	<1	<1	
1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	<1	<1	<1	
cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	<1	<1	<1	<1	
1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	<1	
1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	<1	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	<1	
1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	<1	
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	<1	
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	<1	
1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	<1	
1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	<1	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	<1	
1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	<1	
trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	<1	
cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	<1	<1	<1	
1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	<1	
1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	<1	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	<1	<1	<1	
1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	<1	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	<1	<1	<1	<1	
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	<1	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	<1	<1	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	<1	
1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	<1	<1	<1	
1.4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
1.2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	<1	<1	<1	
1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	<1	<1	<1	
1.2.3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	<1	<1	<1	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW20_12/07/17	GW21_12/07/17	GW12_12/07/17	GW16_12/07/17	GW13_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-001	EM1709192-002	EM1709192-003	EM1709192-004	EM1709192-005	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes</b>									
Chloroform	67-66-3	1	µg/L	<1	<1	12	<1	<1	
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	2	<1	<1	
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	<1	
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	150	<100	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	150	<50	<50	<50	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW20_12/07/17	GW21_12/07/17	GW12_12/07/17	GW16_12/07/17	GW13_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-001	EM1709192-002	EM1709192-003	EM1709192-004	EM1709192-005	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	120	<100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	120	<100	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	0.02	<0.02	----	<0.02	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	<0.02	<0.02	----	<0.02	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	0.11	<0.02	----	<0.02	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	<0.02	<0.02	----	<0.02	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	0.28	<0.01	----	<0.01	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	<0.02	<0.02	----	<0.02	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	<0.1	<0.1	----	<0.1	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	0.08	<0.02	----	<0.02	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	0.05	<0.02	----	<0.02	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	0.04	<0.02	----	<0.02	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW20_12/07/17	GW21_12/07/17	GW12_12/07/17	GW16_12/07/17	GW13_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-001	EM1709192-002	EM1709192-003	EM1709192-004	EM1709192-005	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	0.05	<0.01	----	<0.01	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	<0.02	<0.02	----	<0.02	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	<0.02	<0.02	----	<0.02	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	<0.02	<0.02	----	<0.02	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	<0.02	<0.02	----	<0.02	
Perfluorotridecanoic acid (PFTTrDA)	72629-94-8	0.02	µg/L	----	<0.02	<0.02	----	<0.02	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	<0.05	<0.05	----	<0.05	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	<0.02	<0.02	----	<0.02	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	<0.05	<0.05	----	<0.05	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	<0.05	<0.05	----	<0.05	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	----	<0.05	<0.05	----	<0.05	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	<0.05	<0.05	----	<0.05	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	<0.02	<0.02	----	<0.02	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	<0.02	<0.02	----	<0.02	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	<0.05	<0.05	----	<0.05	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	<0.05	<0.05	----	<0.05	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	<0.05	<0.05	----	<0.05	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW20_12/07/17	GW21_12/07/17	GW12_12/07/17	GW16_12/07/17	GW13_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-001	EM1709192-002	EM1709192-003	EM1709192-004	EM1709192-005	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	<0.05	<0.05	----	<0.05	
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	----	0.63	<0.01	----	<0.01	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	0.39	<0.01	----	<0.01	
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	0.63	<0.01	----	<0.01	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	109	107	103	103	105	
Toluene-D8	2037-26-5	1	%	113	112	105	104	109	
4-Bromofluorobenzene	460-00-4	1	%	116	113	103	109	110	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	23.9	26.0	30.0	31.1	26.2	
2-Chlorophenol-D4	93951-73-6	1	%	79.6	87.7	91.0	86.6	75.7	
2,4,6-Tribromophenol	118-79-6	1	%	75.8	85.1	76.4	77.5	66.4	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	76.6	82.5	89.0	86.3	76.4	
Anthracene-d10	1719-06-8	1	%	81.3	86.7	92.8	89.9	82.0	
4-Terphenyl-d14	1718-51-0	1	%	84.4	89.7	99.1	95.9	86.2	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	105	104	99.4	99.4	101	
Toluene-D8	2037-26-5	2	%	103	102	95.7	94.8	98.9	
4-Bromofluorobenzene	460-00-4	2	%	108	106	99.4	101	102	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	----	98.4	98.5	----	96.3	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW25_12/07/17	QC206_12/07/17	QC207_12/07/17	GW27_12/07/17	GW19_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-006	EM1709192-007	EM1709192-008	EM1709192-009	EM1709192-010	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.37	----	----	6.61	6.99	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	1980	----	----	132	14800	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	533	----	----	73	2000	
Total Alkalinity as CaCO3	----	1	mg/L	533	----	----	73	2000	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1040	----	----	20	42	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	1560	----	----	12	233	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	60	----	----	11	8830	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	284	----	----	32	290	
Magnesium	7439-95-4	1	mg/L	145	----	----	3	881	
Sodium	7440-23-5	1	mg/L	161	----	----	7	5170	
Potassium	7440-09-7	1	mg/L	35	----	----	<1	160	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.01	----	----	0.07	0.01	
Arsenic	7440-38-2	0.001	mg/L	0.002	----	----	<0.001	0.002	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	<0.001	0.004	
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	<0.001	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	<0.001	<0.001	
Manganese	7439-96-5	0.001	mg/L	0.668	----	----	0.010	0.417	
Nickel	7440-02-0	0.001	mg/L	0.024	----	----	0.012	0.001	
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	<0.01	<0.01	
Zinc	7440-66-6	0.005	mg/L	0.007	----	----	0.060	<0.005	
Iron	7439-89-6	0.05	mg/L	14.3	----	----	0.16	12.9	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	2.68	<0.01	----	1.76	0.55	
Arsenic	7440-38-2	0.001	mg/L	0.009	<0.001	----	0.009	0.003	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW25_12/07/17	QC206_12/07/17	QC207_12/07/17	GW27_12/07/17	GW19_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-006	EM1709192-007	EM1709192-008	EM1709192-009	EM1709192-010	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.009	<0.001	----	0.006	0.010	
Copper	7440-50-8	0.001	mg/L	0.004	<0.001	----	0.008	0.017	
Nickel	7440-02-0	0.001	mg/L	0.032	<0.001	----	0.013	0.003	
Lead	7439-92-1	0.001	mg/L	0.004	<0.001	----	0.003	0.002	
Zinc	7440-66-6	0.005	mg/L	0.015	<0.005	----	0.073	1.05	
Manganese	7439-96-5	0.001	mg/L	0.726	----	----	0.018	0.479	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	----	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	22.1	<0.05	----	8.04	16.9	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.4	----	----	0.2	0.5	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	4.97	----	----	0.05	36.6	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	----	----	0.02	<0.01	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	0.01	----	----	0.27	<0.01	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	0.01	----	----	0.29	<0.01	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	----	----	<0.01	<0.01	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	34.0	----	----	2.18	290	
Total Cations	----	0.01	meq/L	34.0	----	----	2.15	316	
Ionic Balance	----	0.01	%	0.01	----	----	0.85	4.30	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	11	----	----	2	86	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	----	----	<1	<1	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW25_12/07/17	QC206_12/07/17	QC207_12/07/17	GW27_12/07/17	GW19_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-006	EM1709192-007	EM1709192-008	EM1709192-009	EM1709192-010	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	----	----	<1	<1	
Ethylbenzene	100-41-4	1	µg/L	<1	----	----	<1	<1	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	----	----	<1	<1	
Styrene	100-42-5	1	µg/L	<1	----	----	<1	<1	
ortho-Xylene	95-47-6	1	µg/L	<1	----	----	<1	<1	
Isopropylbenzene	98-82-8	1	µg/L	<1	----	----	<1	<1	
n-Propylbenzene	103-65-1	1	µg/L	<1	----	----	<1	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	----	----	<1	<1	
sec-Butylbenzene	135-98-8	1	µg/L	<1	----	----	<1	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	----	----	<1	<1	
tert-Butylbenzene	98-06-6	1	µg/L	<1	----	----	<1	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	----	----	<1	<1	
n-Butylbenzene	104-51-8	1	µg/L	<1	----	----	<1	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	----	----	<10	<10	
Vinyl Acetate	108-05-4	10	µg/L	<10	----	----	<10	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	----	----	<10	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	----	----	<10	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	----	----	<10	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	----	----	<1	2	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	----	----	<1	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	----	----	<1	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	----	----	<2	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	----	----	<2	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	----	----	<1	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	----	----	<10	<10	
Chloromethane	74-87-3	10	µg/L	<10	----	----	<10	<10	
Vinyl chloride	75-01-4	10	µg/L	<10.0	----	----	<10.0	<10.0	
Bromomethane	74-83-9	10	µg/L	<10	----	----	<10	<10	
Chloroethane	75-00-3	10	µg/L	<10	----	----	<10	<10	
Trichlorofluoromethane	75-69-4	10	µg/L	<10	----	----	<10	<10	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW25_12/07/17	QC206_12/07/17	QC207_12/07/17	GW27_12/07/17	GW19_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709192-006	EM1709192-007	EM1709192-008	EM1709192-009	EM1709192-010	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	----	----	<1	<1	
Iodomethane	74-88-4	1	µg/L	<1	----	----	<1	<1	
Methylene chloride	75-09-2	4	µg/L	<4	----	----	<4	<4	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	----	----	<1	<1	
1,1-Dichloroethane	75-34-3	1	µg/L	<1	----	----	<1	<1	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	12	----	----	<1	<1	
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	----	----	<1	<1	
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	----	----	<1	<1	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	----	----	<1	<1	
1,2-Dichloroethane	107-06-2	1	µg/L	<1	----	----	<1	<1	
Trichloroethene	79-01-6	1	µg/L	<1	----	----	<1	<1	
Dibromomethane	74-95-3	1	µg/L	<1	----	----	<1	<1	
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	----	----	<1	<1	
1,3-Dichloropropane	142-28-9	1	µg/L	<1	----	----	<1	<1	
Tetrachloroethene	127-18-4	1	µg/L	<1	----	----	<1	<1	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	----	----	<1	<1	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	----	----	<1	<1	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	----	----	<1	<1	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	----	----	<1	<1	
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	----	----	<1	<1	
Pentachloroethane	76-01-7	1	µg/L	<1	----	----	<1	<1	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	----	----	<1	<1	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	----	----	<1.0	<1.0	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	----	----	<1	<1	
Bromobenzene	108-86-1	1	µg/L	<1	----	----	<1	<1	
2-Chlorotoluene	95-49-8	1	µg/L	<1	----	----	<1	<1	
4-Chlorotoluene	106-43-4	1	µg/L	<1	----	----	<1	<1	
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	----	----	<1	<1	
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	----	----	<1.0	<1.0	
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	----	----	<1	<1	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	----	----	<1	<1	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	----	----	<1	<1	
<b>EP074G: Trihalomethanes</b>									



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW25_12/07/17	QC206_12/07/17	QC207_12/07/17	GW27_12/07/17	GW19_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-006	EM1709192-007	EM1709192-008	EM1709192-009	EM1709192-010	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	<1	----	----	<1	<1	
Bromodichloromethane	75-27-4	1	µg/L	<1	----	----	<1	<1	
Dibromochloromethane	124-48-1	1	µg/L	<1	----	----	<1	<1	
Bromoform	75-25-2	1	µg/L	<1	----	----	<1	<1	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	----	----	<5	<5	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	----	----	<1.0	<1.0	
Acenaphthylene	208-96-8	1	µg/L	<1.0	----	----	<1.0	<1.0	
Acenaphthene	83-32-9	1	µg/L	<1.0	----	----	<1.0	<1.0	
Fluorene	86-73-7	1	µg/L	<1.0	----	----	<1.0	<1.0	
Phenanthrene	85-01-8	1	µg/L	<1.0	----	----	<1.0	<1.0	
Anthracene	120-12-7	1	µg/L	<1.0	----	----	<1.0	<1.0	
Fluoranthene	206-44-0	1	µg/L	<1.0	----	----	<1.0	<1.0	
Pyrene	129-00-0	1	µg/L	<1.0	----	----	<1.0	<1.0	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	----	----	<1.0	<1.0	
Chrysene	218-01-9	1	µg/L	<1.0	----	----	<1.0	<1.0	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	----	----	<1.0	<1.0	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	----	----	<1.0	<1.0	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	<0.5	<0.5	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	----	----	<1.0	<1.0	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	----	----	<1.0	<1.0	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	----	----	<1.0	<1.0	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	<0.5	<0.5	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	----	----	<0.5	<0.5	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	<50	----	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	<100	----	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	----	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	----	<50	<50	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW25_12/07/17	QC206_12/07/17	QC207_12/07/17	GW27_12/07/17	GW19_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-006	EM1709192-007	EM1709192-008	EM1709192-009	EM1709192-010	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	----	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	----	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	----	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	----	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	----	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	----	----	<0.02	<0.02	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	----	----	<0.02	<0.02	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	----	----	<b>0.27</b>	<0.02	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	----	----	<0.02	<0.02	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	----	----	<b>4.62</b>	<0.01	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	----	----	<0.02	<0.02	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	----	----	<0.1	<0.1	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	----	----	<0.02	<0.02	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	----	----	<0.02	<0.02	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	----	----	<0.02	<0.02	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW25_12/07/17	QC206_12/07/17	QC207_12/07/17	GW27_12/07/17	GW19_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-006	EM1709192-007	EM1709192-008	EM1709192-009	EM1709192-010	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	----	----	0.01	<0.01	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	----	----	<0.02	<0.02	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	----	----	<0.02	<0.02	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	----	----	<0.02	<0.02	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	----	----	<0.02	<0.02	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	----	----	----	<0.02	<0.02	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	----	----	<0.05	<0.05	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	----	----	<0.02	<0.02	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	----	----	<0.05	<0.05	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	----	----	<0.05	<0.05	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	----	----	----	<0.05	<0.05	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	----	----	<0.05	<0.05	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	----	----	<0.02	<0.02	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	----	----	<0.02	<0.02	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	----	----	<0.05	<0.05	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	----	----	<0.05	<0.05	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	----	----	<0.05	<0.05	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW25_12/07/17	QC206_12/07/17	QC207_12/07/17	GW27_12/07/17	GW19_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-006	EM1709192-007	EM1709192-008	EM1709192-009	EM1709192-010	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	----	----	<0.05	<0.05	
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	----	----	----	4.90	<0.01	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	----	----	4.89	<0.01	
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	----	----	4.90	<0.01	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	104	----	----	99.8	114	
Toluene-D8	2037-26-5	1	%	108	----	----	106	114	
4-Bromofluorobenzene	460-00-4	1	%	104	----	----	107	115	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	29.6	----	----	30.6	28.5	
2-Chlorophenol-D4	93951-73-6	1	%	90.4	----	----	85.8	76.6	
2,4,6-Tribromophenol	118-79-6	1	%	81.4	----	----	79.6	70.5	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	87.2	----	----	85.7	69.5	
Anthracene-d10	1719-06-8	1	%	91.1	----	----	90.6	72.9	
4-Terphenyl-d14	1718-51-0	1	%	96.6	----	----	97.8	76.4	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	100	94.2	97.7	96.6	110	
Toluene-D8	2037-26-5	2	%	97.9	90.1	92.2	96.5	104	
4-Bromofluorobenzene	460-00-4	2	%	98.1	96.2	101	101	109	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	----	----	----	97.7	88.2	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW35_12/07/17	GW24_12/07/17	GW17_12/07/17	GW15_12/07/17	QC307_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-011	EM1709192-012	EM1709192-013	EM1709192-014	EM1709192-015	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	5.32	6.80	6.83	7.42	----	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	3730	1880	931	20500	----	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	35	732	294	2930	----	
Total Alkalinity as CaCO3	----	1	mg/L	35	732	294	2930	----	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	2510	<1	304	171	----	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	3220	15	496	626	----	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	130	761	119	12200	----	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	454	102	126	322	----	
Magnesium	7439-95-4	1	mg/L	253	71	31	1090	----	
Sodium	7440-23-5	1	mg/L	279	555	146	7330	----	
Potassium	7440-09-7	1	mg/L	40	39	14	231	----	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	8.16	0.03	0.04	0.03	----	
Arsenic	7440-38-2	0.001	mg/L	0.009	0.004	0.004	0.002	----	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----	
Chromium	7440-47-3	0.001	mg/L	0.002	0.003	0.003	0.017	----	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	0.005	----	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----	
Manganese	7439-96-5	0.001	mg/L	3.52	0.500	0.442	0.033	----	
Nickel	7440-02-0	0.001	mg/L	0.102	0.028	0.012	0.003	----	
Selenium	7782-49-2	0.01	mg/L	0.01	<0.01	<0.01	<0.01	----	
Zinc	7440-66-6	0.005	mg/L	1.08	0.038	0.258	0.017	----	
Iron	7439-89-6	0.05	mg/L	48.4	13.5	1.39	<0.05	----	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	8.85	1.61	1.10	0.32	<0.01	
Arsenic	7440-38-2	0.001	mg/L	0.010	0.007	0.006	0.007	<0.001	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW35_12/07/17	GW24_12/07/17	GW17_12/07/17	GW15_12/07/17	QC307_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-011	EM1709192-012	EM1709192-013	EM1709192-014	EM1709192-015	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.003	0.007	0.005	0.020	<0.001	
Copper	7440-50-8	0.001	mg/L	0.002	0.005	0.001	12.6	<0.001	
Nickel	7440-02-0	0.001	mg/L	0.104	0.035	0.009	0.064	<0.001	
Lead	7439-92-1	0.001	mg/L	0.002	0.002	0.001	0.001	<0.001	
Zinc	7440-66-6	0.005	mg/L	1.17	0.184	0.270	1.30	<0.005	
Manganese	7439-96-5	0.001	mg/L	3.52	0.565	0.456	0.048	----	
Selenium	7782-49-2	0.01	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	48.0	16.8	2.68	1.46	<0.05	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.2	0.7	0.4	0.5	----	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	7.24	10.4	0.63	36.0	----	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	0.04	0.02	0.07	0.02	----	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	0.04	0.02	0.07	0.02	----	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.03	0.08	4.70	----	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	56.6	36.1	15.6	406	----	
Total Cations	----	0.01	meq/L	56.6	36.1	15.5	430	----	
Ionic Balance	----	0.01	%	<0.01	0.03	0.04	2.90	----	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	11	33	13	108	----	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	52	<1	<1	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW35_12/07/17	GW24_12/07/17	GW17_12/07/17	GW15_12/07/17	QC307_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-011	EM1709192-012	EM1709192-013	EM1709192-014	EM1709192-015	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	<1	<1	<1	----	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	<1	<1	----	
meta- & para-Xylene	108-38-3	106-42-3	1	µg/L	<1	2	<1	----	
Styrene	100-42-5	1	µg/L	<1	<1	<1	<1	----	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	<1	<1	----	
Isopropylbenzene	98-82-8	1	µg/L	<1	3	<1	<1	----	
n-Propylbenzene	103-65-1	1	µg/L	<1	1	<1	<1	----	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	<1	<1	----	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	<1	<1	----	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	<1	<1	----	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	<1	<1	----	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	<1	<1	----	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	<1	<1	----	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	40	<10	30	----	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	<10	<10	----	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	<10	<10	----	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	<10	<10	----	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	<10	<10	----	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	<1	<1	3	----	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	----	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	----	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	----	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	----	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	----	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	<10	<10	----	
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	40	----	
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	<10.0	<10.0	----	
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	----	
Chloroethane	75-00-3	10	µg/L	<10	<10	<10	<10	----	
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW35_12/07/17	GW24_12/07/17	GW17_12/07/17	GW15_12/07/17	QC307_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-011	EM1709192-012	EM1709192-013	EM1709192-014	EM1709192-015	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	----	
Iodomethane	74-88-4	1	µg/L	<1	<1	<1	<1	----	
Methylene chloride	75-09-2	4	µg/L	<4	<4	<4	<4	----	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	<1	<1	----	
1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	<1	<1	----	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	<1	<1	----	
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	----	
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	----	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	----	
1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	----	
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	----	
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	----	
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	----	
1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	----	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	----	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	----	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	----	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	<1	<1	----	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	----	
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	----	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	<1	<1	----	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	----	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	<1	<1	<1	----	
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	----	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	<1	----	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	----	
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	<1	<1	----	
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	<1	<1	----	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	<1	<1	----	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	<1	<1	----	
<b>EP074G: Trihalomethanes</b>									



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW35_12/07/17	GW24_12/07/17	GW17_12/07/17	GW15_12/07/17	QC307_12/07/17
Client sampling date / time					12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709192-011	EM1709192-012	EM1709192-013	EM1709192-014	EM1709192-015	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	<1	<1	<1	<1	----	
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	<1	<1	----	
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	----	
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	----	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Acenaphthene	83-32-9	1	µg/L	<1.0	1.1	<1.0	<1.0	----	
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	1.1	<0.5	<0.5	----	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	60	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	360	<50	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	210	<100	120	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	570	<50	120	<50	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	70	<20	<20	<20	



## Analytical Results

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Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-011	EM1709192-012	EM1709192-013	EM1709192-014	EM1709192-015	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	420	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	140	<100	110	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	560	<100	110	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	420	<100	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	51	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	53	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	101	104	97.1	113	----	
Toluene-D8	2037-26-5	1	%	103	105	97.4	112	----	
4-Bromofluorobenzene	460-00-4	1	%	103	93.5	96.6	110	----	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	27.6	26.6	27.3	31.2	----	
2-Chlorophenol-D4	93951-73-6	1	%	80.8	86.6	82.4	88.7	----	
2,4,6-Tribromophenol	118-79-6	1	%	78.2	95.7	80.8	85.7	----	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	78.4	85.4	79.7	84.5	----	
Anthracene-d10	1719-06-8	1	%	81.6	89.2	85.8	88.9	----	
4-Terphenyl-d14	1718-51-0	1	%	86.8	95.5	93.1	87.5	----	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	97.5	115	93.8	109	92.2	
Toluene-D8	2037-26-5	2	%	93.8	102	88.8	102	90.1	
4-Bromofluorobenzene	460-00-4	2	%	97.4	99.4	93.4	106	94.4	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC308_12/07/17	DAMW5_02_12/07/17	F3_12/07/17	MW1333_02_12/07/17	MW1371_02_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-016	EM1709192-017	EM1709192-018	EM1709192-019	EM1709192-020	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.08	7.38	5.72	7.48	7.41	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	14100	428	222	857	730	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	2060	308	210	727	611	
Total Alkalinity as CaCO3	----	1	mg/L	2060	308	210	727	611	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	29	7	<1	<5	59	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	232	6	5	17	102	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	8840	14	13	151	46	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	287	66	19	92	58	
Magnesium	7439-95-4	1	mg/L	892	10	19	96	46	
Sodium	7440-23-5	1	mg/L	5240	46	28	130	179	
Potassium	7440-09-7	1	mg/L	162	12	12	19	13	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.02	<0.01	0.05	0.04	0.35	
Arsenic	7440-38-2	0.001	mg/L	0.002	0.005	0.002	0.003	0.032	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.006	<0.001	<0.001	0.001	0.008	
Copper	7440-50-8	0.001	mg/L	0.012	<0.001	<0.001	<0.001	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Manganese	7439-96-5	0.001	mg/L	0.501	0.349	0.557	0.211	0.143	
Nickel	7440-02-0	0.001	mg/L	0.003	0.019	0.030	0.034	0.013	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Zinc	7440-66-6	0.005	mg/L	0.014	0.009	0.015	0.025	<0.005	
Iron	7439-89-6	0.05	mg/L	23.0	4.38	6.19	2.57	0.09	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.60	0.30	2.44	10.6	0.64	
Arsenic	7440-38-2	0.001	mg/L	0.003	0.011	0.004	0.020	0.033	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC308_12/07/17	DAMW5_02_12/07/17	F3_12/07/17	MW1333_02_12/07/17	MW1371_02_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-016	EM1709192-017	EM1709192-018	EM1709192-019	EM1709192-020	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.012	0.004	0.009	0.032	0.009	
Copper	7440-50-8	0.001	mg/L	0.020	0.006	0.006	0.012	<0.001	
Nickel	7440-02-0	0.001	mg/L	0.005	0.023	0.037	0.046	0.010	
Lead	7439-92-1	0.001	mg/L	0.002	0.008	0.008	0.016	<0.001	
Zinc	7440-66-6	0.005	mg/L	0.993	0.155	0.050	0.090	0.921	
Manganese	7439-96-5	0.001	mg/L	0.496	0.372	0.604	0.276	0.168	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	21.5	8.45	11.7	23.5	0.23	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.5	1.0	0.4	0.4	0.6	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	34.0	1.02	1.62	8.44	6.69	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	0.02	<0.01	<0.01	<0.01	<0.01	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	<0.01	0.02	<0.01	5.89	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.02	<0.01	5.89	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	0.03	0.48	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	291	6.69	4.56	18.8	14.7	
Total Cations	----	0.01	meq/L	----	----	4.37	----	----	
Total Cations	----	0.01	meq/L	320	6.42	----	18.6	14.8	
Ionic Balance	----	0.01	%	----	----	2.21	----	----	
Ionic Balance	----	0.01	%	4.69	2.06	----	0.41	0.22	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	90	5	5	25	33	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC308_12/07/17	DAMW5_02_12/07/17	F3_12/07/17	MW1333_02_12/07/17	MW1371_02_12/07/17
Client sampling date / time					12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709192-016	EM1709192-017	EM1709192-018	EM1709192-019	EM1709192-020	EM1709192-020
				Result	Result	Result	Result	Result	Result
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	<1
Toluene	108-88-3	1	µg/L	<1	<1	<1	<1	<1	<1
Ethylbenzene	100-41-4	1	µg/L	<1	<1	<1	<1	<1	<1
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	<1	<1	<1	<1
Styrene	100-42-5	1	µg/L	<1	<1	<1	<1	<1	<1
ortho-Xylene	95-47-6	1	µg/L	<1	<1	<1	<1	<1	<1
Isopropylbenzene	98-82-8	1	µg/L	<1	<1	<1	<1	<1	<1
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	<1	<1	<1	<1
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	<1	<1	<1	<1
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	<1	<1	<1	<1
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	<1	<1	<1	<1
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	<1	<1	<1	<1
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	<1	<1	<1	<1
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	<1	<1	<1	<1
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	<10	<10	<10	<10
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	<10	<10	<10	<10
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	<10	<10	<10	<10
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	<10	<10	<10	<10
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	<10	<10	<10	<10
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	1	<1	<1	<1	<1	<1
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	<1	<1
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	<1	<1
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	<2	<2
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	<2	<2
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	<1	<1
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	<10	<10	<10	<10
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	<10	<10
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	<10	<10
Chloroethane	75-00-3	10	µg/L	<10	<10	<10	20	<10	<10







## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC308_12/07/17	DAMW5_02_12/07/17	F3_12/07/17	MW1333_02_12/07/17	MW1371_02_12/07/17
Client sampling date / time					12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00
Compound	CAS Number	LOR	Unit		EM1709192-016	EM1709192-017	EM1709192-018	EM1709192-019	EM1709192-020
					Result	Result	Result	Result	Result
<b>EP074G: Trihalomethanes</b>									
Chloroform	67-66-3	1	µg/L		<1	<1	<1	<1	<1
Bromodichloromethane	75-27-4	1	µg/L		<1	<1	<1	<1	<1
Dibromochloromethane	124-48-1	1	µg/L		<1	<1	<1	<1	<1
Bromoform	75-25-2	1	µg/L		<1	<1	<1	<1	<1
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)anthracene	56-55-3	1	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g,h,i)perylene	191-24-2	1	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L		100	<100	110	120	<100
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		100	<50	110	120	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	<20



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC308_12/07/17	DAMW5_02_12/07/17	F3_12/07/17	MW1333_02_12/07/17	MW1371_02_12/07/17
Client sampling date / time					12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709192-016	EM1709192-017	EM1709192-018	EM1709192-019	EM1709192-020	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	100	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	<0.02	----	<0.02	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	<0.02	----	<0.02	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	0.02	----	<0.02	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	<0.02	----	<0.02	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	0.01	----	<0.01	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	<0.02	----	<0.02	----	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	<0.1	----	<0.1	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	<0.02	----	<0.02	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	<0.02	----	<0.02	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	<0.02	----	<0.02	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC308_12/07/17	DAMW5_02_12/07/17	F3_12/07/17	MW1333_02_12/07/17	MW1371_02_12/07/17
Client sampling date / time					12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709192-016	EM1709192-017	EM1709192-018	EM1709192-019	EM1709192-020	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	<0.01	----	<0.01	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	<0.02	----	<0.02	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	<0.02	----	<0.02	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	<0.02	----	<0.02	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	<0.02	----	<0.02	----	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	----	<0.02	----	<0.02	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	<0.05	----	<0.05	----	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	<0.02	----	<0.02	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	<0.05	----	<0.05	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	<0.05	----	<0.05	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	----	<0.05	----	<0.05	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	<0.05	----	<0.05	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	<0.02	----	<0.02	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	<0.02	----	<0.02	----	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	<0.05	----	<0.05	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	<0.05	----	<0.05	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	<0.05	----	<0.05	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC308_12/07/17	DAMW5_02_12/07/17	F3_12/07/17	MW1333_02_12/07/17	MW1371_02_12/07/17
Client sampling date / time					12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709192-016	EM1709192-017	EM1709192-018	EM1709192-019	EM1709192-020	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	<0.05	----	<0.05	----	
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	----	0.03	----	<0.01	----	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	0.03	----	<0.01	----	
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	0.03	----	<0.01	----	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	108	99.8	97.5	97.8	103	
Toluene-D8	2037-26-5	1	%	108	106	103	104	110	
4-Bromofluorobenzene	460-00-4	1	%	111	102	101	102	107	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	24.3	25.3	27.5	23.3	23.5	
2-Chlorophenol-D4	93951-73-6	1	%	61.8	72.9	75.0	67.3	79.1	
2,4,6-Tribromophenol	118-79-6	1	%	77.2	68.0	79.0	67.7	78.4	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	64.2	69.7	76.6	65.5	80.0	
Anthracene-d10	1719-06-8	1	%	76.8	71.4	81.4	69.1	83.1	
4-Terphenyl-d14	1718-51-0	1	%	80.8	73.4	86.7	69.6	89.5	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	104	96.5	94.2	94.7	99.7	
Toluene-D8	2037-26-5	2	%	98.6	96.4	94.0	94.9	99.8	
4-Bromofluorobenzene	460-00-4	2	%	103	99.5	97.9	95.1	102	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	----	96.0	----	92.3	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Client sample ID			QC_103_12/07/17	QC104_12/07/17	QC105_12/07/17	QC106_12/07/17	MW9AI_12/07/17
Client sampling date / time					12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709192-023	EM1709192-024	EM1709192-025	EM1709192-026	EM1709192-027	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	----	----	----	----	----	7.13
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	----	----	----	----	----	1510
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	----	----	----	----	----	<1
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	----	----	----	----	----	<1
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	----	----	----	----	----	505
Total Alkalinity as CaCO3	----	1	mg/L	----	----	----	----	----	505
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	----	----	----	----	----	127
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	----	----	----	----	----	266
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	----	----	----	----	----	335
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	----	----	----	----	----	32
Magnesium	7439-95-4	1	mg/L	----	----	----	----	----	12
Sodium	7440-23-5	1	mg/L	----	----	----	----	----	393
Potassium	7440-09-7	1	mg/L	----	----	----	----	----	16
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	----	----	----	----	----	1.81
Arsenic	7440-38-2	0.001	mg/L	----	----	----	----	----	0.023
Cadmium	7440-43-9	0.0001	mg/L	----	----	----	----	----	<0.0001
Chromium	7440-47-3	0.001	mg/L	----	----	----	----	----	0.040
Copper	7440-50-8	0.001	mg/L	----	----	----	----	----	<0.001
Lead	7439-92-1	0.001	mg/L	----	----	----	----	----	<0.001
Manganese	7439-96-5	0.001	mg/L	----	----	----	----	----	0.023
Nickel	7440-02-0	0.001	mg/L	----	----	----	----	----	0.016
Selenium	7782-49-2	0.01	mg/L	----	----	----	----	----	<0.01
Zinc	7440-66-6	0.005	mg/L	----	----	----	----	----	0.009
Iron	7439-89-6	0.05	mg/L	----	----	----	----	----	3.02
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	----	----	----	12.0
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----	0.044



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC_103_12/07/17	QC104_12/07/17	QC105_12/07/17	QC106_12/07/17	MW9AI_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709192-023	EM1709192-024	EM1709192-025	EM1709192-026	EM1709192-027	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	0.106	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	----	----	0.008	
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	----	----	0.039	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	0.008	
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	----	----	0.038	
Manganese	7439-96-5	0.001	mg/L	----	----	----	----	0.042	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	----	----	0.01	
Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	----	----	13.2	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	----	----	----	----	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	----	----	----	----	<0.1	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	----	----	----	----	13.4	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	----	----	----	----	<0.01	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	----	----	----	----	0.13	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	----	----	----	----	0.13	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	----	----	----	----	0.06	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	----	----	----	----	22.2	
Total Cations	----	0.01	meq/L	----	----	----	----	20.1	
Ionic Balance	----	0.01	%	----	----	----	----	4.96	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	----	----	----	----	134	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	----	----	----	----	<1	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC_103_12/07/17	QC104_12/07/17	QC105_12/07/17	QC106_12/07/17	MW9AI_12/07/17
Client sampling date / time					12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00
Compound	CAS Number	LOR	Unit		EM1709192-023	EM1709192-024	EM1709192-025	EM1709192-026	EM1709192-027
				Result	Result	Result	Result	Result	Result
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	----	----	----	----	----	<1
Iodomethane	74-88-4	1	µg/L	----	----	----	----	----	<1
Methylene chloride	75-09-2	4	µg/L	----	----	----	----	----	<4
trans-1,2-Dichloroethene	156-60-5	1	µg/L	----	----	----	----	----	<1
1,1-Dichloroethane	75-34-3	1	µg/L	----	----	----	----	----	7
cis-1,2-Dichloroethene	156-59-2	1	µg/L	----	----	----	----	----	<1
1,1,1-Trichloroethane	71-55-6	1	µg/L	----	----	----	----	----	<1
1,1-Dichloropropylene	563-58-6	1	µg/L	----	----	----	----	----	<1
Carbon Tetrachloride	56-23-5	1	µg/L	----	----	----	----	----	<1
1,2-Dichloroethane	107-06-2	1	µg/L	----	----	----	----	----	<1
Trichloroethene	79-01-6	1	µg/L	----	----	----	----	----	<1
Dibromomethane	74-95-3	1	µg/L	----	----	----	----	----	<1
1,1,2-Trichloroethane	79-00-5	1	µg/L	----	----	----	----	----	<1
1,3-Dichloropropane	142-28-9	1	µg/L	----	----	----	----	----	<1
Tetrachloroethene	127-18-4	1	µg/L	----	----	----	----	----	<1
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	----	----	----	----	----	<1
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	----	----	----	----	----	<1
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	----	----	----	----	----	<1
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	----	----	----	----	----	<1
1,2,3-Trichloropropane	96-18-4	1	µg/L	----	----	----	----	----	<1
Pentachloroethane	76-01-7	1	µg/L	----	----	----	----	----	<1
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	----	----	----	----	----	<1
Hexachlorobutadiene	87-68-3	1	µg/L	----	----	----	----	----	<1.0
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	----	----	----	----	----	<1
Bromobenzene	108-86-1	1	µg/L	----	----	----	----	----	<1
2-Chlorotoluene	95-49-8	1	µg/L	----	----	----	----	----	<1
4-Chlorotoluene	106-43-4	1	µg/L	----	----	----	----	----	<1
1,3-Dichlorobenzene	541-73-1	1	µg/L	----	----	----	----	----	<1
1,4-Dichlorobenzene	106-46-7	1	µg/L	----	----	----	----	----	<1.0
1,2-Dichlorobenzene	95-50-1	1	µg/L	----	----	----	----	----	<1
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	----	----	----	----	----	<1
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	----	----	----	----	----	<1
<b>EP074G: Trihalomethanes</b>									







## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC_103_12/07/17	QC104_12/07/17	QC105_12/07/17	QC106_12/07/17	MW9AI_12/07/17
Client sampling date / time					12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709192-023	EM1709192-024	EM1709192-025	EM1709192-026	EM1709192-027	EM1709192-027
				Result	Result	Result	Result	Result	Result
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L	<100	<100	----	----	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	----	----	140	140
>C34 - C40 Fraction	----	100	µg/L	<100	<100	----	----	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	----	----	140	140
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	----	----	<100	<100
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	<2
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	<5
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	----	----	----	----	113	113
Toluene-D8	2037-26-5	1	%	----	----	----	----	117	117
4-Bromofluorobenzene	460-00-4	1	%	----	----	----	----	117	117
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	----	----	----	----	30.2	30.2
2-Chlorophenol-D4	93951-73-6	1	%	----	----	----	----	82.4	82.4
2,4,6-Tribromophenol	118-79-6	1	%	----	----	----	----	94.7	94.7
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	----	----	----	----	87.9	87.9
Anthracene-d10	1719-06-8	1	%	----	----	----	----	93.0	93.0
4-Terphenyl-d14	1718-51-0	1	%	----	----	----	----	95.1	95.1
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	99.1	96.5	95.7	97.4	111	111
Toluene-D8	2037-26-5	2	%	91.8	91.1	89.8	96.0	119	119
4-Bromofluorobenzene	460-00-4	2	%	98.2	102	101	105	119	119



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Client sample ID			QC108_14/07/17	----	----	----	----
		Client sampling date / time			14-Jul-2017 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM1709192-028	-----	-----	-----	-----	-----
				Result	----	----	----	----	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	----	----	----	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	----	----	----	----	----
<sup>^</sup> C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	----	----	----	----	----
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	----	----	----	----	----
Toluene	108-88-3	2	µg/L	<2	----	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	----	----	----	----	----
<sup>^</sup> Total Xylenes	1330-20-7	2	µg/L	<2	----	----	----	----	----
<sup>^</sup> Sum of BTEX	----	1	µg/L	<1	----	----	----	----	----
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	101	----	----	----	----	----
Toluene-D8	2037-26-5	2	%	98.6	----	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%	97.5	----	----	----	----	----



## Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	72	120
Toluene-D8	2037-26-5	70	130
4-Bromofluorobenzene	460-00-4	70	128
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	10	46
2-Chlorophenol-D4	93951-73-6	23	104
2,4,6-Tribromophenol	118-79-6	28	130
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129
<b>EP231S: PFAS Surrogate</b>			
13C4-PFOS	----	60	130



## QUALITY CONTROL REPORT

<b>Work Order</b>	: <b>EM1709192</b>	<b>Page</b>	: 1 of 36
<b>Client</b>	: <b>AECOM Australia Pty Ltd</b>	<b>Laboratory</b>	: Environmental Division Melbourne
<b>Contact</b>	: MS AVERYLL COYNE	<b>Contact</b>	: Carol Walsh
<b>Address</b>	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	<b>Address</b>	: 4 Westall Rd Springvale VIC Australia 3171
<b>Telephone</b>	: +61 03 9653 1234	<b>Telephone</b>	: +61-3-8549 9608
<b>Project</b>	: 60537182	<b>Date Samples Received</b>	: 13-Jul-2017
<b>Order number</b>	: task 3.2	<b>Date Analysis Commenced</b>	: 14-Jul-2017
<b>C-O-C number</b>	: ----	<b>Issue Date</b>	: 24-Jul-2017
<b>Sampler</b>	: BH, BP, JM		
<b>Site</b>	: ----		
<b>Quote number</b>	: ME/199/16		
<b>No. of samples received</b>	: 27		
<b>No. of samples analysed</b>	: 26		



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

### *Signatories*

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Chris Lemaitre	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
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Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC



## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :  
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot  
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
 LOR = Limit of reporting  
 RPD = Relative Percentage Difference  
 # = Indicates failed QC

## Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA005P: pH by PC Titrator (QC Lot: 999218)</b>									
EM1709188-004	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.60	7.63	0.394	0% - 20%
EM1709192-006	GW25_12/07/17	EA005-P: pH Value	----	0.01	pH Unit	7.37	7.38	0.136	0% - 20%
<b>EA005P: pH by PC Titrator (QC Lot: 999220)</b>									
EM1709192-019	MW1333_02_12/07/17	EA005-P: pH Value	----	0.01	pH Unit	7.48	7.54	0.799	0% - 20%
EM1709201-002	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.68	7.78	1.29	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 996496)</b>									
EM1709188-003	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	5410	5720	5.57	0% - 20%
EM1709192-004	GW16_12/07/17	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	687	685	0.292	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 996497)</b>									
EM1709192-018	F3_12/07/17	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	222	214	3.89	0% - 20%
EM1709196-006	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	4980	4820	3.34	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 999164)</b>									
EM1709192-027	MW9AI_12/07/17	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	1510	1500	0.399	0% - 20%
EM1709220-007	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	14900	14700	1.19	0% - 20%
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 999215)</b>									
EM1709163-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	305	298	2.32	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	305	298	2.32	0% - 20%
EM1709188-004	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	654	657	0.485	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	654	657	0.485	0% - 20%
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 999219)</b>									



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 999219) - continued</b>									
EM1709192-006	GW25_12/07/17	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	533	527	1.08	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	533	527	1.08	0% - 20%
EM1709192-019	MW1333_02_12/07/17	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	727	718	1.34	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	727	718	1.34	0% - 20%
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 996588)</b>									
EM1709163-004	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1870	1870	0.00	0% - 20%
EM1709106-026	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	137	136	0.757	0% - 20%
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 996591)</b>									
EM1709192-010	GW19_12/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	42	38	10.3	0% - 20%
EM1709192-017	DAMW5_02_12/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	7	3	85.0	No Limit
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 999296)</b>									
EM1709227-004	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1220	1260	3.53	0% - 20%
EM1709159-002	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	3020	3060	1.44	0% - 20%
<b>ED043: Total Oxidised Sulfur as SO4 2- (QC Lot: 1009657)</b>									
EM1709192-003	GW12_12/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	66	73	10.5	0% - 20%
EM1709371-019	Anonymous	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	1410	1550	9.64	0% - 20%
<b>ED043: Total Oxidised Sulfur as SO4 2- (QC Lot: 999497)</b>									
EM1709192-001	GW20_12/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	1030	1070	3.75	0% - 20%
EM1709192-012	GW24_12/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	15	13	13.4	0% - 50%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 996587)</b>									
EM1709163-004	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	7230	7180	0.662	0% - 20%
EM1709106-026	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	500	502	0.397	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 996590)</b>									
EM1709192-010	GW19_12/07/17	ED045G: Chloride	16887-00-6	1	mg/L	8830	8620	2.51	0% - 20%
EM1709192-017	DAMW5_02_12/07/17	ED045G: Chloride	16887-00-6	1	mg/L	14	14	0.00	0% - 50%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 999297)</b>									
EM1709227-004	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	7350	6920	6.12	0% - 20%
EM1709159-002	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	639	631	1.34	0% - 20%
<b>ED093F: Dissolved Major Cations (QC Lot: 996717)</b>									
EM1709186-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	1240	1250	0.493	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	181	180	0.854	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	6650	6670	0.394	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	537	530	1.20	0% - 20%
EM1709188-007	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	109	106	3.38	0% - 20%



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)		
<b>ED093F: Dissolved Major Cations (QC Lot: 996717) - continued</b>											
EM1709188-007	Anonymous	ED093F: Magnesium	7439-95-4	1	mg/L	168	162	3.74	0% - 20%		
		ED093F: Sodium	7440-23-5	1	mg/L	1330	1290	3.16	0% - 20%		
		ED093F: Potassium	7440-09-7	1	mg/L	20	18	14.3	0% - 20%		
<b>ED093F: Dissolved Major Cations (QC Lot: 996718)</b>											
EM1709192-013	GW17_12/07/17	ED093F: Calcium	7440-70-2	1	mg/L	126	129	2.39	0% - 20%		
		ED093F: Magnesium	7439-95-4	1	mg/L	31	32	0.00	0% - 20%		
		ED093F: Sodium	7440-23-5	1	mg/L	146	148	1.91	0% - 20%		
		ED093F: Potassium	7440-09-7	1	mg/L	14	14	0.00	0% - 50%		
EM1709201-002	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	13	13	0.00	0% - 50%		
		ED093F: Magnesium	7439-95-4	1	mg/L	20	20	0.00	0% - 20%		
		ED093F: Sodium	7440-23-5	1	mg/L	166	166	0.00	0% - 20%		
		ED093F: Potassium	7440-09-7	1	mg/L	5	5	0.00	No Limit		
<b>ED093F: Dissolved Major Cations (QC Lot: 999474)</b>											
EM1709292-002	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	6	6	0.00	No Limit		
		ED093F: Magnesium	7439-95-4	1	mg/L	6	6	0.00	No Limit		
		ED093F: Sodium	7440-23-5	1	mg/L	9	9	0.00	No Limit		
		ED093F: Potassium	7440-09-7	1	mg/L	1	1	0.00	No Limit		
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 996715)</b>											
EM1709106-026	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit		
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.033	0.032	3.13	0% - 20%		
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.007	0.007	0.00	No Limit		
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit		
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.554	0.544	1.85	0% - 20%		
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.012	0.012	0.00	0% - 50%		
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.008	0.008	0.00	No Limit		
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.41	0.37	10.4	0% - 20%		
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit		
		EG020A-F: Iron	7439-89-6	0.05	mg/L	2.10	2.09	0.783	0% - 20%		
		EM1709192-010	GW19_12/07/17	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
				EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.00	No Limit
EG020A-F: Chromium	7440-47-3			0.001	mg/L	0.004	0.005	0.00	No Limit		
EG020A-F: Copper	7440-50-8			0.001	mg/L	<0.001	<0.001	0.00	No Limit		
EG020A-F: Lead	7439-92-1			0.001	mg/L	<0.001	<0.001	0.00	No Limit		
EG020A-F: Manganese	7439-96-5			0.001	mg/L	0.417	0.430	3.07	0% - 20%		
EG020A-F: Nickel	7440-02-0			0.001	mg/L	0.001	0.002	0.00	No Limit		
EG020A-F: Zinc	7440-66-6			0.005	mg/L	<0.005	<0.005	0.00	No Limit		
EG020A-F: Aluminium	7429-90-5			0.01	mg/L	0.01	<0.01	0.00	No Limit		
EG020A-F: Selenium	7782-49-2			0.01	mg/L	<0.01	<0.01	0.00	No Limit		
EG020A-F: Iron	7439-89-6			0.05	mg/L	12.9	13.2	2.22	0% - 20%		





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 999473)</b>									
EM1709237-010	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.002	0.003	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.04	0.03	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.05	0.00	No Limit
EM1709192-027	MW9AI_12/07/17	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.023	0.024	0.00	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.040	0.042	6.49	0% - 20%
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.023	0.024	0.00	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.016	0.016	0.00	0% - 50%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.009	0.007	18.8	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	1.81	1.89	4.31	0% - 20%
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	3.02	3.08	1.81	0% - 20%
<b>EG020T: Total Metals by ICP-MS (QC Lot: 996726)</b>									
EM1709192-001	GW20_12/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.010	0.010	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.010	0.009	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.008	0.007	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.009	0.009	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.243	0.248	2.12	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.015	0.015	0.00	0% - 50%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.045	0.034	26.5	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	2.89	2.86	1.15	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	12.8	13.2	3.14	0% - 20%
EM1709192-011	GW35_12/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0002	0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.010	0.011	0.00	0% - 50%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.003	0.003	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.003	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	3.52	3.51	0.289	0% - 20%



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020T: Total Metals by ICP-MS (QC Lot: 996726) - continued</b>									
EM1709192-011	GW35_12/07/17	EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.104	0.103	0.00	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	1.17	1.15	1.77	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	8.85	8.88	0.271	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	0.01	0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	48.0	48.1	0.217	0% - 20%
<b>EG020T: Total Metals by ICP-MS (QC Lot: 996727)</b>									
EM1709192-024	QC104_12/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit		
EM1709210-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.006	0.006	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.003	0.003	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.003	0.003	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.360	0.356	1.04	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.010	0.011	0.00	0% - 50%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.136	0.134	1.56	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.88	0.93	6.11	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-T: Iron	7439-89-6	0.05	mg/L	1.41	1.66	16.1	0% - 20%		
<b>EG020T: Total Metals by ICP-MS (QC Lot: 999480)</b>									
EM1709192-027	MW9AI_12/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.044	0.046	2.89	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.106	0.107	1.02	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.008	0.010	13.8	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.008	0.009	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.042	0.044	3.83	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.039	0.044	11.3	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.038	0.038	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	12.0	11.9	0.904	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	0.01	<0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	13.2	13.4	1.72	0% - 20%

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 Work Order : EM1709192  
 Client : AECOM Australia Pty Ltd  
 Project : 60537182



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 996716)</b>									
EM1709106-026	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709192-010	GW19_12/07/17	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 999472)</b>									
EM1709288-003	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709192-027	MW9AI_12/07/17	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1002551)</b>									
EM1709192-001	GW20_12/07/17	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709192-011	GW35_12/07/17	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1002552)</b>									
EM1709192-024	QC104_12/07/17	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EK040P: Fluoride by PC Titrator (QC Lot: 999216)</b>									
EM1709192-006	GW25_12/07/17	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.4	0.4	0.00	No Limit
EM1709192-019	MW1333_02_12/07/17	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.4	0.5	0.00	No Limit
<b>EK055G: Ammonia as N by Discrete Analyser (QC Lot: 999271)</b>									
EM1709192-001	GW20_12/07/17	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	4.29	4.44	3.46	0% - 20%
EM1709192-012	GW24_12/07/17	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	10.4	10.2	1.50	0% - 20%
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 996589)</b>									
EM1709168-009	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.01	0.00	No Limit
EM1709192-003	GW12_12/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.02	0.02	0.00	No Limit
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 996592)</b>									
EM1709196-015	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EM1709192-017	DAMW5_02_12/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 999299)</b>									
EM1709192-027	MW9AI_12/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 999270)</b>									
EM1709137-006	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.02	0.00	No Limit
EM1709192-011	GW35_12/07/17	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.04	0.04	0.00	No Limit
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 996585)</b>									
EM1709192-010	GW19_12/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EM1709106-026	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.05	0.04	35.3	No Limit
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 999300)</b>									
EM1709192-027	MW9AI_12/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.06	0.06	0.00	No Limit
<b>EP005: Total Organic Carbon (TOC) (QC Lot: 1000200)</b>									
EM1709106-022	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	64	68	5.90	0% - 20%
EM1709192-006	GW25_12/07/17	EP005: Total Organic Carbon	----	1	mg/L	11	11	0.00	0% - 50%
<b>EP005: Total Organic Carbon (TOC) (QC Lot: 1000201)</b>									
EM1709192-020	MW1371_02_12/07/17	EP005: Total Organic Carbon	----	1	mg/L	33	32	0.00	0% - 20%



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 996236)</b>										
EM1709192-001	GW20_12/07/17	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit			
EM1709192-012	GW24_12/07/17	EP074-WF: Benzene	71-43-2	1	µg/L	52	48	6.93	0% - 20%	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	2	2	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	3	3	0.00	No Limit	
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	1	1	0.00	No Limit	
		EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit			
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 999456)</b>										
EM1709256-007	Anonymous	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit			





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 999456) - continued</b>										
EM1709256-007	Anonymous	EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit	
EM1709242-001	Anonymous	EP074-WF: Benzene	71-43-2	1	µg/L	2	1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	2	2	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit			
<b>EP074B: Oxygenated Compounds (QC Lot: 996236)</b>										
EM1709192-001	GW20_12/07/17	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit	
EM1709192-012	GW24_12/07/17	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	40	40	0.00	No Limit	
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit	
<b>EP074B: Oxygenated Compounds (QC Lot: 999456)</b>										
EM1709256-007	Anonymous	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit	
EM1709242-001	Anonymous	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<20	<10	66.7	No Limit	
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit	



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074B: Oxygenated Compounds (QC Lot: 999456) - continued</b>									
EM1709242-001	Anonymous	EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 996236)</b>									
EM1709192-001	GW20_12/07/17	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
EM1709192-012	GW24_12/07/17	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 999456)</b>									
EM1709256-007	Anonymous	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
EM1709242-001	Anonymous	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
<b>EP074D: Fumigants (QC Lot: 996236)</b>									
EM1709192-001	GW20_12/07/17	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
EM1709192-012	GW24_12/07/17	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
<b>EP074D: Fumigants (QC Lot: 999456)</b>									
EM1709256-007	Anonymous	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
EM1709242-001	Anonymous	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 996236)</b>									
EM1709192-001	GW20_12/07/17	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 996236) - continued</b>									
EM1709192-001	GW20_12/07/17	EP074-WF: 1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit		
EM1709192-012	GW24_12/07/17	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 996236) - continued</b>									
EM1709192-012	GW24_12/07/17	EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit		
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 999456)</b>									
EM1709256-007	Anonymous	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP074-WF: 1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 999456) - continued</b>									
EM1709256-007	Anonymous	EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	<2	0.00	No Limit
EM1709242-001	Anonymous	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP074-WF: 1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.2-Dichloroethene	156-59-2	1	µg/L	1	1	0.00	No Limit
		EP074-WF: 1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichloroethane	107-06-2	1	µg/L	35	36	2.91	0% - 20%
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	4	4	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	1	1	0.00	No Limit
		EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit		
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit		
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit		
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	<2	0.00	No Limit		
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 996236)</b>									
EM1709192-001	GW20_12/07/17	EP074-WF: 1.4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 996236) - continued</b>									
EM1709192-012	GW24_12/07/17	EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 999456)</b>									
EM1709256-007	Anonymous	EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
EM1709242-001	Anonymous	EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	0.8	0.9	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	48	45	4.70	0% - 20%
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 996236)</b>									
EM1709192-001	GW20_12/07/17	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
EM1709192-012	GW24_12/07/17	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 999456)</b>									
EM1709256-007	Anonymous	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074G: Trihalomethanes (QC Lot: 999456) - continued</b>									
EM1709256-007	Anonymous	EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
EM1709242-001	Anonymous	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
<b>EP074H: Naphthalene (QC Lot: 996236)</b>									
EM1709192-001	GW20_12/07/17	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EM1709192-012	GW24_12/07/17	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP074H: Naphthalene (QC Lot: 999456)</b>									
EM1709256-007	Anonymous	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EM1709242-001	Anonymous	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1001673)</b>									
EM1709192-028	QC108_14/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1709309-034	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 996235)</b>									
EM1709192-001	GW20_12/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1709192-012	GW24_12/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	60	60	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 996272)</b>									
EM1709148-020	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1709192-023	QC_103_12/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 996508)</b>									
EM1709210-005	Anonymous	EP071: C15 - C28 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	µg/L	<50	<50	0.00	No Limit
		EP071: C29 - C36 Fraction	----	50	µg/L	<50	<50	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 999455)</b>									
EM1709256-007	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1709242-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	110	120	9.01	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1001673)</b>									
EM1709192-028	QC108_14/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM1709309-034	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 996235)</b>									
EM1709192-001	GW20_12/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM1709192-012	GW24_12/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	70	70	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 996272)</b>									
EM1709148-020	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM1709192-023	QC_103_12/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 996508)</b>									



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 996508) - continued</b>									
EM1709210-005	Anonymous	EP071: >C10 - C16 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: >C16 - C34 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 999455)</b>									
EM1709256-007	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM1709242-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	110	120	0.00	No Limit
<b>EP080: BTEXN (QC Lot: 1001673)</b>									
EM1709192-028	QC108_14/07/17	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EM1709309-034	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP080: BTEXN (QC Lot: 996235)</b>									
EM1709192-001	GW20_12/07/17	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EM1709192-012	GW24_12/07/17	EP080: Benzene	71-43-2	1	µg/L	51	48	6.78	0% - 20%
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	2	2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP080: BTEXN (QC Lot: 996272)</b>									
EM1709148-020	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP080: BTEXN (QC Lot: 996272) - continued</b>									
EM1709148-020	Anonymous	EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
EM1709192-023	QC_103_12/07/17	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
	91-20-3	5	µg/L	<5	<5	0.00	No Limit		
<b>EP080: BTEXN (QC Lot: 999455)</b>									
EM1709256-007	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
EM1709242-001	Anonymous	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
		EP080: Benzene	71-43-2	1	µg/L	1	1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
			106-42-3						
	95-47-6	2	µg/L	<2	<2	0.00	No Limit		
	91-20-3	5	µg/L	<5	<5	0.00	No Limit		
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 999277)</b>									
EM1709192-002	GW21_12/07/17	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.28	0.26	4.07	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.11	0.10	11.3	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
ES1717348-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.58	0.61	4.51	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.08	0.07	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.05	0.05	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.25	0.25	0.00	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 999277)</b>									



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 999277) - continued</b>									
EM1709192-002	GW21_12/07/17	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.05	0.04	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.08	0.08	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.05	0.05	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.04	0.03	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit		
ES1717348-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.05	0.05	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.11	0.11	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit		
<b>EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 999277)</b>									
EM1709192-002	GW21_12/07/17	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
ES1717348-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 999277) - continued</b>									
ES1717348-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 999277)</b>									
EM1709192-002	GW21_12/07/17	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
ES1717348-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231P: PFAS Sums (QC Lot: 999277)</b>									
EM1709192-002	GW21_12/07/17	EP231X: Sum of PFAS	----	0.01	µg/L	0.63	0.58	8.26	0% - 20%
ES1717348-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	1.14	1.16	1.74	0% - 20%



### Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 996496)</b>								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	99.4	95	105
				<10	293 mg/L	100	95	105
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 996497)</b>								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	100	95	105
				<10	293 mg/L	103	95	105
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 999164)</b>								
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	100	95	105
				<10	293 mg/L	99.6	95	105
<b>ED037P: Alkalinity by PC Titrator (QCLot: 999215)</b>								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	95.6	88	109
<b>ED037P: Alkalinity by PC Titrator (QCLot: 999219)</b>								
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	95.4	88	109
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 996588)</b>								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	111	92	115
				<1	100 mg/L	103	92	115
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 996591)</b>								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	112	92	115
				<1	100 mg/L	104	92	115
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 999296)</b>								
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	107	92	115
				<1	100 mg/L	104	92	115
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 1009657)</b>								
ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	<1	500 mg/L	107	82	122
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 999497)</b>								
ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	<1	500 mg/L	105	82	122
<b>ED045G: Chloride by Discrete Analyser (QCLot: 996587)</b>								
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	113	88	118
				<1	1000 mg/L	103	88	118
<b>ED045G: Chloride by Discrete Analyser (QCLot: 996590)</b>								
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	105	88	118
				<1	1000 mg/L	103	88	118
<b>ED045G: Chloride by Discrete Analyser (QCLot: 999297)</b>								





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 999297) - continued</b>									
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	106	88	118	
				<1	1000 mg/L	106	88	118	
<b>ED093F: Dissolved Major Cations (QCLot: 996717)</b>									
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	103	93	110	
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	103	91	110	
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	107	90	109	
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	106	89	109	
<b>ED093F: Dissolved Major Cations (QCLot: 996718)</b>									
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	104	93	110	
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	103	91	110	
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	109	90	109	
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	108	89	109	
<b>ED093F: Dissolved Major Cations (QCLot: 999474)</b>									
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	106	93	110	
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	107	91	110	
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	102	90	109	
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	102	89	109	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 996715)</b>									
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	98.0	93	105	
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	96.3	91	107	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	92.9	84	104	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	90.8	83	103	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	93.3	82	103	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	92.2	83	105	
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	91.8	83	105	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	93.9	82	106	
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	91.8	82	109	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	97.1	85	109	
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	99.5	94	106	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 999473)</b>									
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	103	93	105	
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	99.5	91	107	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	87.0	84	104	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	86.0	83	103	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	88.9	82	103	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	88.4	83	105	
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	88.4	83	105	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	85.2	82	106	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 999473) - continued</b>									
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	92.9	82	109	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	94.2	85	109	
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	100.0	94	106	
<b>EG020T: Total Metals by ICP-MS (QCLot: 996726)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	103	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	99.4	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	91.6	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	95.5	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.8	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	99.6	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	98.6	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	96.6	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	92.6	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	93.4	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	98.6	80	120	
<b>EG020T: Total Metals by ICP-MS (QCLot: 996727)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	103	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	97.9	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	95.8	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	97.0	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	94.6	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	98.9	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	101	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.0	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	89.6	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	100	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	103	80	120	
<b>EG020T: Total Metals by ICP-MS (QCLot: 999480)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	107	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	91.9	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	95.8	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	91.1	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	89.9	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	90.3	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	93.4	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	90.3	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	94.3	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	89.8	87	113	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EG020T: Total Metals by ICP-MS (QCLot: 999480) - continued</b>									
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	95.9	80	120	
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 996716)</b>									
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	94.4	81	114	
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 999472)</b>									
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	89.7	81	114	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1002551)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	84.4	81	114	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1002552)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	88.6	81	114	
<b>EK040P: Fluoride by PC Titrator (QCLot: 999216)</b>									
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	92.4	85	112	
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 999271)</b>									
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	108	80	115	
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 996589)</b>									
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	97.4	94	107	
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 996592)</b>									
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	99.6	94	107	
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 999299)</b>									
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	102	94	107	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 999270)</b>									
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	110	89	114	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 996585)</b>									
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	104	94	108	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 999300)</b>									
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	107	94	108	
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1000200)</b>									
EP005: Total Organic Carbon	----	1	mg/L	<1	100 mg/L	94.0	81	109	
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1000201)</b>									
EP005: Total Organic Carbon	----	1	mg/L	<1	100 mg/L	93.6	81	109	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 996236)</b>									
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	96.6	81	119	
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	102	84	117	
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	101	83	114	
EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	40 µg/L	101	81	116	
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	100	82	118	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 996236) - continued</b>									
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	101	85	115	
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	99.4	81	113	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	98.8	76	111	
EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	97.3	79	109	
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	95.9	77	111	
EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	96.6	79	108	
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	97.6	80	110	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	97.5	75	111	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	95.5	68	111	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 999456)</b>									
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	108	81	119	
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	103	84	117	
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	102	83	114	
EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	40 µg/L	104	81	116	
	106-42-3								
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	105	82	118	
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	104	85	115	
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	102	81	113	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	99.3	76	111	
EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	101	79	109	
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	99.9	77	111	
EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	99.2	79	108	
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	101	80	110	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	101	75	111	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	103	68	111	
<b>EP074B: Oxygenated Compounds (QCLot: 996236)</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	104	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	97.8	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	101	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	102	73	128	
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	109	75	129	
<b>EP074B: Oxygenated Compounds (QCLot: 999456)</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	120	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	100	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	91.1	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	100	73	128	
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	99.5	75	129	
<b>EP074C: Sulfonated Compounds (QCLot: 996236)</b>									





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
<b>EP074C: Sulfonated Compounds (QCLot: 996236) - continued</b>								
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	94.0	64	119
<b>EP074C: Sulfonated Compounds (QCLot: 999456)</b>								
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	102	64	119
<b>EP074D: Fumigants (QCLot: 996236)</b>								
EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	96.7	74	117
EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	96.4	83	118
EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	94.7	74	109
EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	95.0	70	109
EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	101	81	116
<b>EP074D: Fumigants (QCLot: 999456)</b>								
EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	95.6	74	117
EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	102	83	118
EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	94.6	74	109
EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	92.1	70	109
EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	93.1	81	116
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 996236)</b>								
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	96.4	61	137
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	97.1	66	137
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	94.4	67	135
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	79.8	52	128
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	90.6	76	125
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	96.5	74	123
EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	98.7	75	120
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	44.9	37	120
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	20 µg/L	111	72	159
EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	98.2	78	117
EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	100	81	118
EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	99.6	83	118
EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	96.2	76	115
EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	95.2	75	117
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	91.5	72	111
EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	101	81	120
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	87.9	78	116
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	101	79	116
EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	101	85	119
EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	102	85	119
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	102	76	120
EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	96.0	78	110



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 996236) - continued</b>									
EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	106	64	118	
EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	97.6	51	113	
EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	103	85	121	
EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	104	84	118	
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	87.4	64	109	
EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	95.8	65	115	
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	91.6	70	121	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 999456)</b>									
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	134	61	137	
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	121	66	137	
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	114	67	135	
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	108	52	128	
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	108	76	125	
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	115	74	123	
EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	110	75	120	
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	99.6	37	120	
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	20 µg/L	128	72	159	
EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	108	78	117	
EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	108	81	118	
EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	94.0	83	118	
EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	106	76	115	
EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	91.1	75	117	
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	101	72	111	
EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	107	81	120	
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	106	78	116	
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	101	79	116	
EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	100.0	85	119	
EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	95.7	85	119	
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	103	76	120	
EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	92.8	78	110	
EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	88.4	64	118	
EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	83.8	51	113	
EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	99.7	85	121	
EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	96.3	84	118	
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	91.3	64	109	
EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	86.7	65	115	
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	110	70	121	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 996236)</b>									
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	102	85	115	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 996236) - continued</b>								
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	103	82	116
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	98.6	81	112
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	99.0	80	110
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	97.0	80	110
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	98.2	80	112
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	99.6	84	111
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	93.9	70	114
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	95.7	78	116
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 999456)</b>								
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	101	85	115
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	98.6	82	116
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	98.7	81	112
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	99.4	80	110
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	103	80	110
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	107	80	112
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	103	84	111
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	108	70	114
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	105	78	116
<b>EP074G: Trihalomethanes (QCLot: 996236)</b>								
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	100.0	82	118
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	93.9	75	112
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	91.5	73	108
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	90.6	68	107
<b>EP074G: Trihalomethanes (QCLot: 999456)</b>								
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	98.1	82	118
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	97.6	75	112
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	89.2	73	108
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	94.8	68	107
<b>EP074H: Naphthalene (QCLot: 996236)</b>								
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	98.6	80	116
<b>EP074H: Naphthalene (QCLot: 999456)</b>								
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	98.9	80	116
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 996505)</b>								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	69.1	39	110
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	71.3	40	124
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	68.7	47	117
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	69.0	51	118
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	69.0	53	119



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 996505) - continued</b>									
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	53.4	51	113	
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	70.7	59	123	
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	71.2	58	123	
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	68.2	52	126	
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	73.5	55	123	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	65.8	52	131	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	73.1	57	126	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	64.7	56	126	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	66.6	53	123	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	66.0	53	125	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	68.0	53	125	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 999335)</b>									
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	62.2	39	110	
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	66.2	40	124	
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	72.1	47	117	
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	75.1	51	118	
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	79.2	53	119	
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	51.2	51	113	
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	81.7	59	123	
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	80.7	58	123	
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	75.9	52	126	
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	82.0	55	123	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	79.7	52	131	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	81.1	57	126	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	71.9	56	126	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	76.6	53	123	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	75.0	53	125	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	78.6	53	125	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1001673)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	90.8	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996235)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	98.4	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996272)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	106	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996504)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	98.3	53	123	





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996504) - continued</b>									
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	99.8	57	133	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	94.3	55	141	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996508)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	87.8	53	123	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	86.0	57	133	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	77.2	55	141	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 999334)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	86.4	53	123	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	89.3	57	133	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	81.7	55	141	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 999455)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	101	67	127	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1001673)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	86.4	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996235)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	98.2	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996272)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	106	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996504)</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	97.0	54	122	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	94.4	56	132	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	103	51	137	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996508)</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	67.6	54	122	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	80.9	56	132	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	83.5	51	137	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 999334)</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	86.4	54	122	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	84.3	56	132	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	86.3	51	137	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 999455)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	97.8	65	125	
<b>EP080: BTEXN (QCLot: 1001673)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	101	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	102	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	96.1	72	124	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP080: BTEXN (QCLot: 1001673) - continued</b>									
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	95.4	72	130	
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	98.9	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	99.0	71	129	
<b>EP080: BTEXN (QCLot: 996235)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	103	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	103	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	99.6	72	124	
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	99.6	72	130	
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	101	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	100	71	129	
<b>EP080: BTEXN (QCLot: 996272)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	106	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	109	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	108	72	124	
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	108	72	130	
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	109	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	113	71	129	
<b>EP080: BTEXN (QCLot: 999455)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	105	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	106	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	104	72	124	
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	107	72	130	
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	108	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	109	71	129	
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 999277)</b>									
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.5 µg/L	86.4	70	130	
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.5 µg/L	92.2	70	130	
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.5 µg/L	85.0	70	130	
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.5 µg/L	79.0	70	130	
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.5 µg/L	103	70	130	
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	108	70	130	
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 999277)</b>									
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	2.5 µg/L	100	70	130	
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	85.0	70	130	



Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 999277) - continued</b>									
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	84.2	70	130	
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	93.0	70	130	
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	97.0	70	130	
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	109	70	130	
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	106	70	130	
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	119	70	130	
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	116	70	130	
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	72.0	70	130	
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	99.2	70	150	
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 999277)</b>									
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	101	70	130	
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	114	70	150	
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	117	70	150	
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	1.25 µg/L	116	70	150	
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	101	70	150	
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	109	70	130	
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	125	70	130	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 999277)</b>									
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.5 µg/L	78.8	70	130	
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.5 µg/L	104	70	130	
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.5 µg/L	119	70	130	
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.5 µg/L	128	70	130	

### Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery(%) MS	Low	High
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 996588)</b>							
EM1709162-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	73.6	70	130
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 996591)</b>							
EM1709192-009	GW27_12/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	95.8	70	130



Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 999296)</b>							
EM1709159-005	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	72.3	70	130
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 1009657)</b>							
EM1709192-009	GW27_12/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	500 mg/L	129	70	130
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 999497)</b>							
EM1709192-002	GW21_12/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	500 mg/L	130	70	130
<b>ED045G: Chloride by Discrete Analyser (QCLot: 996587)</b>							
EM1709162-001	Anonymous	ED045G: Chloride	16887-00-6	400 mg/L	85.6	70	130
<b>ED045G: Chloride by Discrete Analyser (QCLot: 996590)</b>							
EM1709192-009	GW27_12/07/17	ED045G: Chloride	16887-00-6	400 mg/L	97.5	70	130
<b>ED045G: Chloride by Discrete Analyser (QCLot: 999297)</b>							
EM1709159-005	Anonymous	ED045G: Chloride	16887-00-6	400 mg/L	93.1	70	130
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 996715)</b>							
EM1709106-026	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	103	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	97.3	81	133
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	96.5	71	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	95.7	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	95.2	75	133
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	80.0	64	134
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	98.5	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	97.0	75	131
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 999473)</b>							
EM1709192-027	MW9AI_12/07/17	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	106	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	99.9	81	133
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	81.8	71	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	91.1	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	94.9	75	133
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	100	64	134
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	101	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	109	75	131
<b>EG020T: Total Metals by ICP-MS (QCLot: 996726)</b>							
EM1709192-001	GW20_12/07/17	EG020A-T: Arsenic	7440-38-2	1 mg/L	98.8	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	90.3	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	93.0	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	93.4	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	99.2	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	93.6	73	123





Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EG020T: Total Metals by ICP-MS (QCLot: 996726) - continued</b>							
EM1709192-001	GW20_12/07/17	EG020A-T: Nickel	7440-02-0	1 mg/L	93.3	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	90.1	74	116
<b>EG020T: Total Metals by ICP-MS (QCLot: 996727)</b>							
EM1709192-024	QC104_12/07/17	EG020A-T: Arsenic	7440-38-2	1 mg/L	91.8	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	91.3	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	91.3	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	90.3	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	96.4	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	92.2	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	89.3	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	88.6	74	116
<b>EG020T: Total Metals by ICP-MS (QCLot: 999480)</b>							
EM1709192-027	MW9AI_12/07/17	EG020A-T: Arsenic	7440-38-2	1 mg/L	95.5	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	98.8	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	90.8	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	93.5	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	97.0	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	89.6	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	90.6	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	93.0	74	116
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 996716)</b>							
EM1709191-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	84.8	70	120
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 999472)</b>							
EM1709248-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	95.9	70	120
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1002551)</b>							
EM1709192-002	GW21_12/07/17	EG035T: Mercury	7439-97-6	0.01 mg/L	96.2	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1002552)</b>							
EM1709192-027	MW9AI_12/07/17	EG035T: Mercury	7439-97-6	0.01 mg/L	93.1	70	130
<b>EK040P: Fluoride by PC Titrator (QCLot: 999216)</b>							
EM1709192-001	GW20_12/07/17	EK040P: Fluoride	16984-48-8	5 mg/L	95.2	70	130
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 999271)</b>							
EM1709192-002	GW21_12/07/17	EK055G: Ammonia as N	7664-41-7	1 mg/L	82.6	70	130
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 996589)</b>							
EM1709191-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	91.2	80	114
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 996592)</b>							
EM1709192-018	F3_12/07/17						



Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 996592) - continued</b>							
EM1709192-018	F3_12/07/17	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	95.7	80	114
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 999299)</b>							
EM1709277-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	94.0	80	114
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 999270)</b>							
EM1709192-001	GW20_12/07/17	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	99.3	70	130
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 996585)</b>							
EM1709191-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	102	79	123
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1000200)</b>							
EM1709106-023	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	95.0	80	114
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1000201)</b>							
EM1709192-027	MW9AI_12/07/17	EP005: Total Organic Carbon	----	100 mg/L	102	80	114
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 996236)</b>							
EM1709192-002	GW21_12/07/17	EP074-WF: Benzene	71-43-2	20 µg/L	104	76	128
		EP074-WF: Toluene	108-88-3	20 µg/L	109	72	132
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 999456)</b>							
EM1709242-002	Anonymous	EP074-WF: Benzene	71-43-2	20 µg/L	115	76	128
		EP074-WF: Toluene	108-88-3	20 µg/L	100.0	72	132
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 996236)</b>							
EM1709192-002	GW21_12/07/17	EP074-WF: 1,1-Dichloroethene	75-35-4	20 µg/L	# 115	63	129
		EP074-WF: Trichloroethene	79-01-6	20 µg/L	93.0	64	126
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 999456)</b>							
EM1709242-002	Anonymous	EP074-WF: 1,1-Dichloroethene	75-35-4	20 µg/L	# 117	63	129
		EP074-WF: Trichloroethene	79-01-6	20 µg/L	94.8	64	126
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 996236)</b>							
EM1709192-002	GW21_12/07/17	EP074-WF: Chlorobenzene	108-90-7	20 µg/L	108	81	119
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 999456)</b>							
EM1709242-002	Anonymous	EP074-WF: Chlorobenzene	108-90-7	20 µg/L	98.0	81	119
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1001673)</b>							
EM1709202-015	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	49.5	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996235)</b>							
EM1709192-002	GW21_12/07/17	EP080: C6 - C9 Fraction	----	280 µg/L	81.6	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996272)</b>							
EM1709151-001	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	87.2	43	125



Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996508)</b>							
EM1709210-003	Anonymous	EP071: C10 - C14 Fraction	----	3368 µg/L	100	50	130
		EP071: C15 - C28 Fraction	----	14735 µg/L	98.9	54	136
		EP071: C29 - C36 Fraction	----	7856 µg/L	89.3	50	142
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 999455)</b>							
EM1709242-002	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	97.5	43	125
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1001673)</b>							
EM1709202-015	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	48.4	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996235)</b>							
EM1709192-002	GW21_12/07/17	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	81.3	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996272)</b>							
EM1709151-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	85.8	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996508)</b>							
EM1709210-003	Anonymous	EP071: >C10 - C16 Fraction	----	5225 µg/L	97.3	50	128
		EP071: >C16 - C34 Fraction	----	19994 µg/L	93.0	50	150
		EP071: >C34 - C40 Fraction	----	1449 µg/L	96.8	51	159
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 999455)</b>							
EM1709242-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	93.8	44	122
<b>EP080: BTEXN (QCLot: 1001673)</b>							
EM1709202-015	Anonymous	EP080: Benzene	71-43-2	20 µg/L	77.2	68	130
		EP080: Toluene	108-88-3	20 µg/L	75.5	72	132
<b>EP080: BTEXN (QCLot: 996235)</b>							
EM1709192-002	GW21_12/07/17	EP080: Benzene	71-43-2	20 µg/L	101	68	130
		EP080: Toluene	108-88-3	20 µg/L	103	72	132
<b>EP080: BTEXN (QCLot: 996272)</b>							
EM1709151-001	Anonymous	EP080: Benzene	71-43-2	20 µg/L	99.2	68	130
		EP080: Toluene	108-88-3	20 µg/L	99.1	72	132
<b>EP080: BTEXN (QCLot: 999455)</b>							
EM1709242-002	Anonymous	EP080: Benzene	71-43-2	20 µg/L	113	68	130
		EP080: Toluene	108-88-3	20 µg/L	111	72	132
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 999277)</b>							
EM1709192-002	GW21_12/07/17	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.5 µg/L	79.8	50	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.5 µg/L	96.2	50	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.5 µg/L	82.0	50	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.5 µg/L	61.8	50	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	93.4	50	130



Sub-Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	SpikeRecovery(%) MS	Recovery Limits (%)	
				Low	High		
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 999277) - continued</b>							
EM1709192-002	GW21_12/07/17	EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.5 µg/L	86.2	50	130
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 999277)</b>							
EM1709192-002	GW21_12/07/17	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	121	50	130
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	83.0	50	130
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	82.8	50	130
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	84.2	50	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	82.6	50	130
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	86.0	50	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	93.2	50	130
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	82.8	50	130
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	113	50	130
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	91.6	50	130
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	63.8	50	150
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 999277)</b>							
EM1709192-002	GW21_12/07/17	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	87.6	50	130
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	110	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	113	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	1.25 µg/L	114	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	115	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	99.2	50	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	99.4	50	130
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 999277)</b>							
EM1709192-002	GW21_12/07/17	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.5 µg/L	75.8	50	130
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.5 µg/L	94.0	50	130
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.5 µg/L	89.8	50	130
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.5 µg/L	89.4	50	130



## QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM1709192	Page	: 1 of 22
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: MS AVERYLL COYNE	Telephone	: +61-3-8549 9608
Project	: 60537182	Date Samples Received	: 13-Jul-2017
Site	: ----	Issue Date	: 24-Jul-2017
Sampler	: BH, BP, JM	No. of samples received	: 27
Order number	: task 3.2	No. of samples analysed	: 26

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

### Summary of Outliers

#### Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

#### Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

#### Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



### Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
<b>Matrix Spike (MS) Recoveries</b>							
EP074E: Halogenated Aliphatic Compounds	EM1709192--002	GW21_12/07/17	1.1-Dichloroethene	75-35-4	115 %	63-129%	Recovery greater than upper control limit
EP074E: Halogenated Aliphatic Compounds	EM1709242--002	Anonymous	1.1-Dichloroethene	75-35-4	117 %	63-129%	Recovery greater than upper control limit

### Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method	Extraction / Preparation			Analysis			
	Container / Client Sample ID(s)	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EA005P: pH by PC Titrator</b>							
<b>Clear Plastic Bottle - Natural</b> MW9AI_12/07/17		----	----	----	14-Jul-2017	12-Jul-2017	2
<b>Clear Plastic Bottle - Natural</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	----	----	----	17-Jul-2017	12-Jul-2017	5

### Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
<b>Laboratory Duplicates (DUP)</b>					
PAH/Phenols (GC/MS - SIM)	0	22	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	1	58	1.72	10.00	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>					
PAH/Phenols (GC/MS - SIM)	0	22	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	1	21	4.76	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	1	58	1.72	5.00	NEPM 2013 B3 & ALS QC Standard



## Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EA005P: pH by PC Titrator</b>							
<b>Clear Plastic Bottle - Natural (EA005-P)</b> MW9AI_12/07/17	12-Jul-2017	----	----	----	14-Jul-2017	12-Jul-2017	*
<b>Clear Plastic Bottle - Natural (EA005-P)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17 GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	----	----	----	17-Jul-2017	12-Jul-2017	*
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>							
<b>Clear Plastic Bottle - Natural (EA015H)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17 GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	----	----	----	14-Jul-2017	19-Jul-2017	✓
<b>Clear Plastic Bottle - Natural (EA015H)</b> MW9AI_12/07/17	12-Jul-2017	----	----	----	17-Jul-2017	19-Jul-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>ED037P: Alkalinity by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural (ED037-P)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17,	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17, MW9AI_12/07/17	12-Jul-2017	----	----	----	17-Jul-2017	26-Jul-2017	✓
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>								
<b>Clear Plastic Bottle - Natural (ED041G)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	----	----	----	14-Jul-2017	09-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (ED041G)</b> MW9AI_12/07/17		12-Jul-2017	----	----	----	17-Jul-2017	09-Aug-2017	✓
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>								
<b>Clear Plastic Bottle - Natural (ED043)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17,	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17, MW9AI_12/07/17	12-Jul-2017	18-Jul-2017	09-Aug-2017	✓	18-Jul-2017	09-Aug-2017	✓





Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>ED045G: Chloride by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Natural (ED045G)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	----	----	----	14-Jul-2017	09-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (ED045G)</b> MW9AI_12/07/17		12-Jul-2017	----	----	----	17-Jul-2017	09-Aug-2017	✓
<b>ED093F: Dissolved Major Cations</b>								
<b>Clear Plastic Bottle - Natural (ED093F)</b> MW1371_02_12/07/17		12-Jul-2017	----	----	----	17-Jul-2017	19-Jul-2017	✓
<b>Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW9AI_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	----	----	----	17-Jul-2017	09-Aug-2017	✓
<b>EG020F: Dissolved Metals by ICP-MS</b>								
<b>Clear Plastic Bottle - Natural (EG020A-F)</b> MW1371_02_12/07/17		12-Jul-2017	----	----	----	14-Jul-2017	08-Jan-2018	✓
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17,	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17	12-Jul-2017	----	----	----	14-Jul-2017	08-Jan-2018	✓
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)</b> MW9AI_12/07/17		12-Jul-2017	----	----	----	17-Jul-2017	08-Jan-2018	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EG020T: Total Metals by ICP-MS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, QC206_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	12-Jul-2017	14-Jul-2017	08-Jan-2018	✓	14-Jul-2017	08-Jan-2018	✓
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)</b> MW9AI_12/07/17		12-Jul-2017	17-Jul-2017	08-Jan-2018	✓	18-Jul-2017	08-Jan-2018	✓
<b>Clear Plastic Bottle - Nitric Acid; Unspecified (EG020A-T)</b> QC307_12/07/17, QC104_12/07/17	QC_103_12/07/17,	12-Jul-2017	14-Jul-2017	08-Jan-2018	✓	14-Jul-2017	08-Jan-2018	✓
<b>EG035F: Dissolved Mercury by FIMS</b>								
<b>Clear Plastic Bottle - Natural (EG035F)</b> MW1371_02_12/07/17		12-Jul-2017	----	----	----	17-Jul-2017	09-Aug-2017	✓
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW9AI_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	----	----	----	17-Jul-2017	09-Aug-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, QC206_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17, MW9AI_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17,	12-Jul-2017	----	----	----	19-Jul-2017	09-Aug-2017	✓
<b>Clear Plastic Bottle - Nitric Acid; Unspecified (EG035T)</b> QC307_12/07/17, QC104_12/07/17	QC_103_12/07/17,	12-Jul-2017	----	----	----	19-Jul-2017	09-Aug-2017	✓
<b>EK040P: Fluoride by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural (EK040P)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17,	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17, MW9AI_12/07/17	12-Jul-2017	----	----	----	17-Jul-2017	09-Aug-2017	✓
<b>EK055G: Ammonia as N by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Sulfuric Acid (EK055G)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17,	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17, MW9AI_12/07/17	12-Jul-2017	----	----	----	17-Jul-2017	09-Aug-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EK057G: Nitrite as N by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Natural (EK057G)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17,	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17, MW9AI_12/07/17	12-Jul-2017	----	----	----	14-Jul-2017	14-Jul-2017	✓
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Sulfuric Acid (EK059G)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17,	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17, MW9AI_12/07/17	12-Jul-2017	----	----	----	17-Jul-2017	09-Aug-2017	✓
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>								
<b>Clear Plastic Bottle - Natural (EK071G)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17,	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17, MW9AI_12/07/17	12-Jul-2017	----	----	----	14-Jul-2017	14-Jul-2017	✓





Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP005: Total Organic Carbon (TOC)</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP005)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17,	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17, MW9AI_12/07/17	12-Jul-2017	----	----	----	17-Jul-2017	09-Aug-2017	✓
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	14-Jul-2017	26-Jul-2017	✓	14-Jul-2017	26-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> MW9AI_12/07/17		12-Jul-2017	17-Jul-2017	26-Jul-2017	✓	17-Jul-2017	26-Jul-2017	✓
<b>EP074B: Oxygenated Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	14-Jul-2017	26-Jul-2017	✓	14-Jul-2017	26-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> MW9AI_12/07/17		12-Jul-2017	17-Jul-2017	26-Jul-2017	✓	17-Jul-2017	26-Jul-2017	✓



Matrix: WATER

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP074C: Sulfonated Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	14-Jul-2017	26-Jul-2017	✓	14-Jul-2017	26-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> MW9AI_12/07/17		12-Jul-2017	17-Jul-2017	26-Jul-2017	✓	17-Jul-2017	26-Jul-2017	✓
<b>EP074D: Fumigants</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	14-Jul-2017	26-Jul-2017	✓	14-Jul-2017	26-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> MW9AI_12/07/17		12-Jul-2017	17-Jul-2017	26-Jul-2017	✓	17-Jul-2017	26-Jul-2017	✓
<b>EP074E: Halogenated Aliphatic Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	14-Jul-2017	26-Jul-2017	✓	14-Jul-2017	26-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> MW9AI_12/07/17		12-Jul-2017	17-Jul-2017	26-Jul-2017	✓	17-Jul-2017	26-Jul-2017	✓



Matrix: WATER

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP074F: Halogenated Aromatic Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	14-Jul-2017	26-Jul-2017	✓	14-Jul-2017	26-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> MW9AI_12/07/17		12-Jul-2017	17-Jul-2017	26-Jul-2017	✓	17-Jul-2017	26-Jul-2017	✓
<b>EP074G: Trihalomethanes</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	14-Jul-2017	26-Jul-2017	✓	14-Jul-2017	26-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> MW9AI_12/07/17		12-Jul-2017	17-Jul-2017	26-Jul-2017	✓	17-Jul-2017	26-Jul-2017	✓
<b>EP074H: Naphthalene</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	14-Jul-2017	26-Jul-2017	✓	14-Jul-2017	26-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> MW9AI_12/07/17		12-Jul-2017	17-Jul-2017	26-Jul-2017	✓	17-Jul-2017	26-Jul-2017	✓



Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
<b>Amber Glass Bottle - Unpreserved (EP075(SIM))</b>								
GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	17-Jul-2017	19-Jul-2017	✓	19-Jul-2017	26-Aug-2017	✓
<b>Amber Glass Bottle - Unpreserved (EP075(SIM))</b>								
MW9AI_12/07/17		12-Jul-2017	18-Jul-2017	19-Jul-2017	✓	18-Jul-2017	27-Aug-2017	✓





Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, QC206_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC307_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	17-Jul-2017	19-Jul-2017	✓	19-Jul-2017	26-Aug-2017	✓
<b>Amber Glass Bottle - Unpreserved (EP071)</b> MW9AI_12/07/17		12-Jul-2017	18-Jul-2017	19-Jul-2017	✓	18-Jul-2017	27-Aug-2017	✓
<b>Amber Glass Bottle - Unpreserved (EP071)</b> QC_103_12/07/17,	QC104_12/07/17	12-Jul-2017	18-Jul-2017	19-Jul-2017	✓	19-Jul-2017	27-Aug-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, QC206_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC307_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17, QC_103_12/07/17, QC105_12/07/17,	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, QC207_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17, QC104_12/07/17, QC106_12/07/17	12-Jul-2017	14-Jul-2017	26-Jul-2017	✓	14-Jul-2017	26-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> MW9AI_12/07/17		12-Jul-2017	17-Jul-2017	26-Jul-2017	✓	17-Jul-2017	26-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> QC108_14/07/17		14-Jul-2017	18-Jul-2017	28-Jul-2017	✓	19-Jul-2017	28-Jul-2017	✓



Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>								
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, QC206_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC307_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	17-Jul-2017	19-Jul-2017	✓	19-Jul-2017	26-Aug-2017	✓
<b>Amber Glass Bottle - Unpreserved (EP071)</b> MW9AI_12/07/17		12-Jul-2017	18-Jul-2017	19-Jul-2017	✓	18-Jul-2017	27-Aug-2017	✓
<b>Amber Glass Bottle - Unpreserved (EP071)</b> QC_103_12/07/17,	QC104_12/07/17	12-Jul-2017	18-Jul-2017	19-Jul-2017	✓	19-Jul-2017	27-Aug-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, QC206_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC307_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17, QC_103_12/07/17, QC105_12/07/17,	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, QC207_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17, QC104_12/07/17, QC106_12/07/17	12-Jul-2017	14-Jul-2017	26-Jul-2017	✓	14-Jul-2017	26-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> MW9AI_12/07/17		12-Jul-2017	17-Jul-2017	26-Jul-2017	✓	17-Jul-2017	26-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> QC108_14/07/17		14-Jul-2017	18-Jul-2017	28-Jul-2017	✓	19-Jul-2017	28-Jul-2017	✓



Matrix: WATER

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080: BTEXN</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, QC206_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC307_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17, QC_103_12/07/17, QC105_12/07/17,	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, QC207_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17, QC104_12/07/17, QC106_12/07/17	12-Jul-2017	14-Jul-2017	26-Jul-2017	✓	14-Jul-2017	26-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> MW9AI_12/07/17		12-Jul-2017	17-Jul-2017	26-Jul-2017	✓	17-Jul-2017	26-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> QC108_14/07/17		14-Jul-2017	18-Jul-2017	28-Jul-2017	✓	19-Jul-2017	28-Jul-2017	✓
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW21_12/07/17, GW13_12/07/17, GW19_12/07/17, MW1333_02_12/07/17	GW12_12/07/17, GW27_12/07/17, DAMW5_02_12/07/17,	12-Jul-2017	---	---	---	19-Jul-2017	08-Jan-2018	✓
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW21_12/07/17, GW13_12/07/17, GW19_12/07/17, MW1333_02_12/07/17	GW12_12/07/17, GW27_12/07/17, DAMW5_02_12/07/17,	12-Jul-2017	---	---	---	19-Jul-2017	08-Jan-2018	✓
<b>EP231C: Perfluoroalkyl Sulfonamides</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW21_12/07/17, GW13_12/07/17, GW19_12/07/17, MW1333_02_12/07/17	GW12_12/07/17, GW27_12/07/17, DAMW5_02_12/07/17,	12-Jul-2017	---	---	---	19-Jul-2017	08-Jan-2018	✓
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW21_12/07/17, GW13_12/07/17, GW19_12/07/17, MW1333_02_12/07/17	GW12_12/07/17, GW27_12/07/17, DAMW5_02_12/07/17,	12-Jul-2017	---	---	---	19-Jul-2017	08-Jan-2018	✓

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 Work Order : EM1709192  
 Client : AECOM Australia Pty Ltd  
 Project : 60537182



Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP231P: PFAS Sums</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW21_12/07/17, GW13_12/07/17, GW19_12/07/17, MW1333_02_12/07/17	GW12_12/07/17, GW27_12/07/17, DAMW5_02_12/07/17,	12-Jul-2017	----	----	----	19-Jul-2017	08-Jan-2018	✓





## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaural	Actual	Expected	Evaluation	
<b>Laboratory Duplicates (DUP)</b>							
Alkalinity by PC Titrator	ED037-P	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	4	31	12.90	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	5	41	12.20	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	19	10.53	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	5	44	11.36	10.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	22	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	19	10.53	10.00	✔	NEPM 2013 B3 & ALS QC Standard
pH by PC Titrator	EA005-P	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	3	21	14.29	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	23	13.04	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	5	41	12.20	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	3	22	13.64	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	4	30	13.33	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	58	1.72	10.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	8	71	11.27	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	4	34	11.76	10.00	✔	NEPM 2013 B3 & ALS QC Standard
<b>Laboratory Control Samples (LCS)</b>							
Alkalinity by PC Titrator	ED037-P	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	31	6.45	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	3	41	7.32	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	19	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	3	44	6.82	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	2	22	9.09	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	21	9.52	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard



Matrix: **WATER** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Control Samples (LCS) - Continued</b>							
Total Dissolved Solids (High Level)	EA015H	6	60	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	3	41	7.32	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	22	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	2	30	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	58	5.17	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	71	5.63	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	2	34	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
<b>Method Blanks (MB)</b>							
Ammonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	3	60	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	31	6.45	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	3	41	7.32	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	3	44	6.82	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	2	22	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	21	9.52	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	3	60	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	3	60	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	3	41	7.32	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	22	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	2	30	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	58	5.17	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	71	5.63	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	2	34	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>							
Ammonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	3	60	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	31	6.45	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	3	44	6.82	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	22	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	21	4.76	5.00	✗	NEPM 2013 B3 & ALS QC Standard



Matrix: **WATER** Evaluation: ✘ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Matrix Spikes (MS) - Continued</b>							
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	3	60	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	23	8.70	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	3	41	7.32	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	22	9.09	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	2	30	6.67	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	58	1.72	5.00	✘	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	71	5.63	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	2	34	5.88	5.00	✔	NEPM 2013 B3 & ALS QC Standard



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by PC Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of 'filterable' residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM (2013) Schedule B(3)
Alkalinity by PC Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM (2013) Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Oxidised Sulfur as SO4 2-	ED043	WATER	In house: The sample is treated with Peroxide to convert all Sulfur species to Sulfate. Sulfate in the sample can then be determined by ICPAES and reported as TOS as SO4 2-.
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm APHA 21st edition seal method 2 017-1-L april 2003
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM (2013) Schedule B(3)  Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM (2013) Schedule B(3)  Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM (2013) Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.





Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Fluoride by PC Titrator	EK040P	WATER	In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3)
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO <sub>2</sub> - B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO <sub>3</sub> - F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined separately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite and Nitrate as N (NO <sub>x</sub> ) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO <sub>3</sub> - F. Combined oxidised Nitrogen (NO <sub>2</sub> +NO <sub>3</sub> ) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with orthophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM (2013) Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Volatile Organic Compounds WF Detection Limits	EP074-WF	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)



<i>Analytical Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with methanol. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers.
<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Total Oxidisable Sulfur as SO4 2- Prep	ED043-PR	WATER	In house
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (2013) Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.



SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1709192

Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: MS AVERYLL COYNE	Contact	: Carol Walsh
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: averyll.coyne@aecom.com	E-mail	: carol.walsh@alsglobal.com
Telephone	: +61 03 9653 1234	Telephone	: +61-3-8549 9608
Facsimile	: +61 03 9654 7117	Facsimile	: +61-3-8549 9601
Project	: 60537182	Page	: 1 of 4
Order number	: ----	Quote number	: EM2016AECOMAU0012 (ME/199/16)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: BH, BP, JM		

Dates

Date Samples Received	: 13-Jul-2017 11:45	Issue Date	: 13-Jul-2017
Client Requested Due Date	: 21-Jul-2017	Scheduled Reporting Date	: <b>21-Jul-2017</b>

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 5	Temperature	: 2.7°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 25 / 24

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Sample 'MW1371\_02\_12/07/17' to be filtered through a 0.45um filter prior to the dissolved metals analysis.**
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.
- **Analytical work for this work order will be conducted at ALS Springvale & ALS Sydney.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



## Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

Method Client sample ID	Sample Container Received	Preferred Sample Container for Analysis
<b>Dissolved Mercury by FIMS : EG035F</b>		
MW1371_02_12/07/17	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Filtered
<b>Dissolved Metals by ICP-MS - Suite A : EG020A-F</b>		
MW1371_02_12/07/17	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Filtered

## Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EA005P pH (PC)	WATER - EG020F Dissolved Metals by ICPMS	WATER - EK055G Ammonia as N By Discrete Analyser	WATER - NT-01 & 02A Ca, Mg, Na, K, Cl, SO4, Alkalinity & Fluoride	WATER - NT-04 Nitrite and Nitrate	WATER - W-02T 8 metals (Total)	WATER - W-26 TRH/TEXN/PAH/8 Metals
EM1709192-001	12-Jul-2017 00:00	GW20_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-002	12-Jul-2017 00:00	GW21_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-003	12-Jul-2017 00:00	GW12_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-004	12-Jul-2017 00:00	GW16_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-005	12-Jul-2017 00:00	GW13_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-006	12-Jul-2017 00:00	GW25_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-009	12-Jul-2017 00:00	GW27_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-010	12-Jul-2017 00:00	GW19_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-011	12-Jul-2017 00:00	GW35_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-012	12-Jul-2017 00:00	GW24_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-013	12-Jul-2017 00:00	GW17_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-014	12-Jul-2017 00:00	GW15_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-016	12-Jul-2017 00:00	QC308_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-017	12-Jul-2017 00:00	DAMW5_02_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-018	12-Jul-2017 00:00	F3_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-019	12-Jul-2017 00:00	MW1333_02_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-020	12-Jul-2017 00:00	MW1371_02_12/07/17	✓	✓	✓	✓	✓	✓	✓





Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EA015H Total Dissolved Solids - High Level	WATER - ED043 Total Oxidised Sulfur as SO4 2-	WATER - EG020T Total Recoverable Metals by ICPMS (including	WATER - EK071G Reactive Phosphorus by Discrete analyser	WATER - EP005 Total Organic Carbon (TOC)	WATER - EP074-WF Full VOCs with WF DL incl DCM & Acetone	WATER - EP231X PFAS - Full Suite (28 analytes)
EM1709192-001	12-Jul-2017 00:00	GW20_12/07/17	✓	✓	✓	✓	✓	✓	
EM1709192-002	12-Jul-2017 00:00	GW21_12/07/17	✓	✓	✓	✓	✓	✓	
EM1709192-003	12-Jul-2017 00:00	GW12_12/07/17	✓	✓	✓	✓	✓	✓	
EM1709192-004	12-Jul-2017 00:00	GW16_12/07/17	✓	✓	✓	✓	✓		
EM1709192-005	12-Jul-2017 00:00	GW13_12/07/17	✓	✓	✓	✓	✓	✓	
EM1709192-006	12-Jul-2017 00:00	GW25_12/07/17	✓	✓	✓	✓	✓		
EM1709192-007	12-Jul-2017 00:00	QC206_12/07/17			✓				
EM1709192-009	12-Jul-2017 00:00	GW27_12/07/17	✓	✓	✓	✓	✓	✓	
EM1709192-010	12-Jul-2017 00:00	GW19_12/07/17	✓	✓	✓	✓	✓	✓	
EM1709192-011	12-Jul-2017 00:00	GW35_12/07/17	✓	✓	✓	✓	✓		
EM1709192-012	12-Jul-2017 00:00	GW24_12/07/17	✓	✓	✓	✓	✓		
EM1709192-013	12-Jul-2017 00:00	GW17_12/07/17	✓	✓	✓	✓	✓		
EM1709192-014	12-Jul-2017 00:00	GW15_12/07/17	✓	✓	✓	✓	✓		
EM1709192-015	12-Jul-2017 00:00	QC307_12/07/17			✓				
EM1709192-016	12-Jul-2017 00:00	QC308_12/07/17	✓	✓	✓	✓	✓		
EM1709192-017	12-Jul-2017 00:00	DAMW5_02_12/07/17	✓	✓	✓	✓	✓	✓	
EM1709192-018	12-Jul-2017 00:00	F3_12/07/17	✓	✓	✓	✓	✓		
EM1709192-019	12-Jul-2017 00:00	MW1333_02_12/07/17	✓	✓	✓	✓	✓	✓	
EM1709192-020	12-Jul-2017 00:00	MW1371_02_12/07/17	✓	✓	✓	✓	✓		
EM1709192-023	12-Jul-2017 00:00	QC_103_12/07/17			✓				
EM1709192-024	12-Jul-2017 00:00	QC104_12/07/17			✓				

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) WATER No analysis requested	WATER - W-05T TRH/BTEXN/8 Metals (Total)	WATER - W-18 TRH(C6 - C9)/BTEXN
EM1709192-007	12-Jul-2017 00:00	QC206_12/07/17		✓	
EM1709192-008	12-Jul-2017 00:00	QC207_12/07/17			✓
EM1709192-015	12-Jul-2017 00:00	QC307_12/07/17		✓	
EM1709192-022	12-Jul-2017 00:00	GMW3_12/07/17	✓		
EM1709192-023	12-Jul-2017 00:00	QC_103_12/07/17		✓	
EM1709192-024	12-Jul-2017 00:00	QC104_12/07/17		✓	
EM1709192-025	12-Jul-2017 00:00	QC105_12/07/17			✓
EM1709192-026	12-Jul-2017 00:00	QC106_12/07/17			✓





SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1709192

Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: MS AVERYLL COYNE	Contact	: Carol Walsh
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: averyll.coyne@aecom.com	E-mail	: carol.walsh@alsglobal.com
Telephone	: +61 03 9653 1234	Telephone	: +61-3-8549 9608
Facsimile	: +61 03 9654 7117	Facsimile	: +61-3-8549 9601
Project	: 60537182	Page	: 1 of 4
Order number	: task 3.2	Quote number	: EM2016AECOMAU0012 (ME/199/16)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: BH, BP, JM		

Dates

Date Samples Received	: 13-Jul-2017 11:45	Issue Date	: 14-Jul-2017
Client Requested Due Date	: 21-Jul-2017	Scheduled Reporting Date	: <b>21-Jul-2017</b>

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 5	Temperature	: 2.7°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 27 / 26

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Sample 'MW1371\_02\_12/07/17' to be filtered through a 0.45um filter prior to the dissolved metals analysis.**
- **Additional samples were received by ALS on 14/07/2017 at 1:45 PM.**
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.
- **Analytical work for this work order will be conducted at ALS Springvale & ALS Sydney.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



## Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

Method Client sample ID	Sample Container Received	Preferred Sample Container for Analysis
<b>Dissolved Mercury by FIMS : EG035F</b>		
MW1371_02_12/07/17	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Filtered
<b>Dissolved Metals by ICP-MS - Suite A : EG020A-F</b>		
MW1371_02_12/07/17	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Filtered

## Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EA005P pH (PC)	WATER - EG020F Dissolved Metals by ICPMS	WATER - EK055G Ammonia as N By Discrete Analyser	WATER - NT-01 & 02A Ca, Mg, Na, K, Cl, SO4, Alkalinity & Fluoride	WATER - NT-04 Nitrite and Nitrate	WATER - W-02T 8 metals (Total)	WATER - W-26 TRH/TEXN/PAH/8 Metals
EM1709192-001	12-Jul-2017 00:00	GW20_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-002	12-Jul-2017 00:00	GW21_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-003	12-Jul-2017 00:00	GW12_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-004	12-Jul-2017 00:00	GW16_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-005	12-Jul-2017 00:00	GW13_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-006	12-Jul-2017 00:00	GW25_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-009	12-Jul-2017 00:00	GW27_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-010	12-Jul-2017 00:00	GW19_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-011	12-Jul-2017 00:00	GW35_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-012	12-Jul-2017 00:00	GW24_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-013	12-Jul-2017 00:00	GW17_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-014	12-Jul-2017 00:00	GW15_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-016	12-Jul-2017 00:00	QC308_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-017	12-Jul-2017 00:00	DAMW5_02_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-018	12-Jul-2017 00:00	F3_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-019	12-Jul-2017 00:00	MW1333_02_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-020	12-Jul-2017 00:00	MW1371_02_12/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709192-027	12-Jul-2017 00:00	MW9AI_12/07/17	✓	✓	✓	✓	✓	✓	✓





Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EA015H Total Dissolved Solids - High Level	WATER - ED043 Total Oxidised Sulfur as SO4 2-	WATER - EG020T Total Recoverable Metals by ICPMS (including	WATER - EK071G Reactive Phosphorus by Discrete analyser	WATER - EP005 Total Organic Carbon (TOC)	WATER - EP074-WF Full VOCs with WF DL incl DCM & Acetone	WATER - EP231X PFAS - Full Suite (28 analytes)
EM1709192-001	12-Jul-2017 00:00	GW20_12/07/17	✓	✓	✓	✓	✓	✓	
EM1709192-002	12-Jul-2017 00:00	GW21_12/07/17	✓	✓	✓	✓	✓	✓	
EM1709192-003	12-Jul-2017 00:00	GW12_12/07/17	✓	✓	✓	✓	✓	✓	
EM1709192-004	12-Jul-2017 00:00	GW16_12/07/17	✓	✓	✓	✓	✓		
EM1709192-005	12-Jul-2017 00:00	GW13_12/07/17	✓	✓	✓	✓	✓	✓	
EM1709192-006	12-Jul-2017 00:00	GW25_12/07/17	✓	✓	✓	✓	✓		
EM1709192-007	12-Jul-2017 00:00	QC206_12/07/17			✓				
EM1709192-009	12-Jul-2017 00:00	GW27_12/07/17	✓	✓	✓	✓	✓	✓	
EM1709192-010	12-Jul-2017 00:00	GW19_12/07/17	✓	✓	✓	✓	✓	✓	
EM1709192-011	12-Jul-2017 00:00	GW35_12/07/17	✓	✓	✓	✓	✓		
EM1709192-012	12-Jul-2017 00:00	GW24_12/07/17	✓	✓	✓	✓	✓		
EM1709192-013	12-Jul-2017 00:00	GW17_12/07/17	✓	✓	✓	✓	✓		
EM1709192-014	12-Jul-2017 00:00	GW15_12/07/17	✓	✓	✓	✓	✓		
EM1709192-015	12-Jul-2017 00:00	QC307_12/07/17			✓				
EM1709192-016	12-Jul-2017 00:00	QC308_12/07/17	✓	✓	✓	✓	✓		
EM1709192-017	12-Jul-2017 00:00	DAMW5_02_12/07/17	✓	✓	✓	✓	✓	✓	
EM1709192-018	12-Jul-2017 00:00	F3_12/07/17	✓	✓	✓	✓	✓		
EM1709192-019	12-Jul-2017 00:00	MW1333_02_12/07/17	✓	✓	✓	✓	✓	✓	
EM1709192-020	12-Jul-2017 00:00	MW1371_02_12/07/17	✓	✓	✓	✓	✓		
EM1709192-023	12-Jul-2017 00:00	QC_103_12/07/17			✓				
EM1709192-024	12-Jul-2017 00:00	QC104_12/07/17			✓				
EM1709192-027	12-Jul-2017 00:00	MW9AI_12/07/17	✓	✓	✓	✓	✓		

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) WATER No analysis requested	WATER - W-05T TRH/BTEXN/8 Metals (Total)	WATER - W-18 TRH(C6 - C9)/BTEXN
EM1709192-007	12-Jul-2017 00:00	QC206_12/07/17		✓	
EM1709192-008	12-Jul-2017 00:00	QC207_12/07/17			✓
EM1709192-015	12-Jul-2017 00:00	QC307_12/07/17		✓	
EM1709192-022	12-Jul-2017 00:00	GMW3_12/07/17	✓		
EM1709192-023	12-Jul-2017 00:00	QC_103_12/07/17		✓	
EM1709192-024	12-Jul-2017 00:00	QC104_12/07/17		✓	
EM1709192-025	12-Jul-2017 00:00	QC105_12/07/17			✓
EM1709192-026	12-Jul-2017 00:00	QC106_12/07/17			✓



## CERTIFICATE OF ANALYSIS

<b>Work Order</b> : <b>EM1709192</b> <b>Amendment</b> : <b>1</b> <b>Client</b> : <b>AECOM Australia Pty Ltd</b> <b>Contact</b> : <b>MS AVERYLL COYNE</b> <b>Address</b> : <b>COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004</b> <b>Telephone</b> : <b>+61 03 9653 1234</b> <b>Project</b> : <b>60537182</b> <b>Order number</b> : <b>task 3.2</b> <b>C-O-C number</b> : <b>----</b> <b>Sampler</b> : <b>BH, BP, JM</b> <b>Site</b> : <b>----</b> <b>Quote number</b> : <b>ME/199/16</b> <b>No. of samples received</b> : <b>27</b> <b>No. of samples analysed</b> : <b>27</b>	<b>Page</b> : 1 of 45  <b>Laboratory</b> : Environmental Division Melbourne <b>Contact</b> : Carol Walsh <b>Address</b> : 4 Westall Rd Springvale VIC Australia 3171  <b>Telephone</b> : +61-3-8549 9608 <b>Date Samples Received</b> : 13-Jul-2017 11:45 <b>Date Analysis Commenced</b> : 14-Jul-2017 <b>Issue Date</b> : 04-Aug-2017 17:01
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Accreditation No. 825  
Accredited for compliance with  
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

**Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.**

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Chris Lemaitre	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Herman Lin	Laboratory Manager	Melbourne Inorganics, Springvale, VIC
Nancy Wang	Senior Semivolatile Instrument Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC



## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
LOR = Limit of reporting  
^ = This result is computed from individual analyte detections at or above the level of reporting  
ø = ALS is not NATA accredited for these tests.  
~ = Indicates an estimated value.

- TDS by method EA-015 for EM1709192 #11 may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- EP074-WF: Minor 1,1 dichloroethane and cis-1,2-dichloroethylene hits for sample EM1709192\_17 have been confirmed by re-analysis.
- EK057G: Results for EM1709192-001 and 016 have been confirmed by re-preparation and re-analysis.
- EK059G:EM1709192#1,4,12,13,14,16 results for Nitrite and Nitrate as N (NOx) have been confirmed by re-preparation and reanalysis.
- It is recognised that Nitrate and Nitrite as N is less than Nitrite as N for samples EM1709192 #1 and #16. However, the difference is within experimental variation of the methods.
- It is recognised that total metals are less than dissolved metals for samples #11, #13, #16 and #20. However, the difference is within experimental variation of the methods.
- ED041G: Sulphate results for EM1709192-003 and 009 have been confirmed by re-preparation and re-analysis.
- ED041G: Sulphate results for EM1709192-010 and 016 have been confirmed by re-preparation and re-analysis.
- EP080/EP079-CWG/EP074-WF: Particular samples EM1709192\_27 shows minor positive hits. Confirmed by re-analysis.
- EG041G: Sample EM1709192-019 has been diluted prior to analysis due to sample matrix and LORs have been raised accordingly.
- Sample 'MW1371\_02\_12/07/17' was filtered through a 0.45um filter prior to the dissolved metals analysis.
- Amendment (31/07/2017): This report has been amended and re-released to allow the reporting of additional analytical data.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- Ionic balances were calculated using: major anions - chloride, alkalinity, sulfate; and major cations - calcium, magnesium, potassium, sodium and iron for #18.
- ED045G: The presence of thiocyanate can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- (Method code): (WO#) Poor matrix spike recovery for (analyte) due to sample heterogeneity. Confirmed by re-extraction and re-analysis.
- EG035T: EM1709192-002 sample results for total mercury confirmed by re-extraction and re-analysis.
- EG020F: EM1709192-010 & 016 Dissolved Iron result has been confirmed by re-preparation and re-analysis
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW20_12/07/17	GW21_12/07/17	GW12_12/07/17	GW16_12/07/17	GW13_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-001	EM1709192-002	EM1709192-003	EM1709192-004	EM1709192-005	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.54	7.00	7.14	7.13	7.30	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	1600	809	308	687	566	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	735	338	132	394	358	
Total Alkalinity as CaCO3	----	1	mg/L	735	338	132	394	358	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	590	236	90	148	141	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	----	384	----	----	----	
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	1030	----	66	232	196	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	112	44	28	23	19	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	238	90	67	105	111	
Magnesium	7439-95-4	1	mg/L	99	20	9	31	28	
Sodium	7440-23-5	1	mg/L	242	161	25	76	47	
Potassium	7440-09-7	1	mg/L	27	8	7	21	14	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.01	0.03	0.04	<0.01	<0.01	
Arsenic	7440-38-2	0.001	mg/L	0.004	0.002	0.007	0.017	0.006	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	0.003	<0.001	0.001	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Manganese	7439-96-5	0.001	mg/L	0.209	0.181	0.034	0.156	0.135	
Nickel	7440-02-0	0.001	mg/L	0.009	0.009	0.008	0.014	0.020	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Zinc	7440-66-6	0.005	mg/L	0.014	0.035	0.007	0.020	0.052	
Iron	7439-89-6	0.05	mg/L	6.27	10.3	0.53	5.21	1.29	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	2.89	12.6	1.09	10.1	0.78	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW20_12/07/17	GW21_12/07/17	GW12_12/07/17	GW16_12/07/17	GW13_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-001	EM1709192-002	EM1709192-003	EM1709192-004	EM1709192-005	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Arsenic	7440-38-2	0.001	mg/L	0.010	0.033	0.011	0.085	0.027	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	0.0002	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.010	0.041	0.004	0.026	0.003	
Copper	7440-50-8	0.001	mg/L	0.008	0.022	0.003	0.014	0.002	
Nickel	7440-02-0	0.001	mg/L	0.015	0.075	0.012	0.038	0.022	
Lead	7439-92-1	0.001	mg/L	0.009	0.086	0.012	0.047	0.012	
Zinc	7440-66-6	0.005	mg/L	0.045	0.114	0.015	0.098	0.054	
Manganese	7439-96-5	0.001	mg/L	0.243	0.261	0.038	0.175	0.145	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	12.8	50.0	2.56	19.6	6.06	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.0002	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.7	0.5	0.3	0.7	0.6	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	4.29	0.77	0.04	0.18	0.07	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	0.01	0.02	0.02	<0.01	0.03	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	<0.01	0.01	<0.01	0.02	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.02	0.03	<0.01	0.05	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	30.1	12.9	5.30	11.6	10.6	
Total Cations	----	0.01	meq/L	31.2	13.3	5.35	11.6	10.2	
Ionic Balance	----	0.01	%	1.81	1.66	0.46	0.14	1.81	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	16	21	7	11	6	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW20_12/07/17	GW21_12/07/17	GW12_12/07/17	GW16_12/07/17	GW13_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-001	EM1709192-002	EM1709192-003	EM1709192-004	EM1709192-005	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	1	µg/L	<1	<1	<1	<1	<1	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	<1	<1	<1	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	<1	<1	<1	
Styrene	100-42-5	1	µg/L	<1	<1	<1	<1	<1	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	<1	<1	<1	
Isopropylbenzene	98-82-8	1	µg/L	<1	<1	<1	<1	<1	
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	<1	<1	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	<1	<1	<1	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	<1	<1	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	<1	<1	<1	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	<1	<1	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	<1	<1	<1	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	<10	<10	<10	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	<10	<10	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	<10	<10	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	<10	<10	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	<10	<10	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	<10	<10	<10	
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	<10	
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	<10.0	<10.0	<10.0	
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	<10	
Chloroethane	75-00-3	10	µg/L	<10	<10	<10	<10	<10	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW20_12/07/17	GW21_12/07/17	GW12_12/07/17	GW16_12/07/17	GW13_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-001	EM1709192-002	EM1709192-003	EM1709192-004	EM1709192-005	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	<10	
1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	<1	
Iodomethane	74-88-4	1	µg/L	<1	<1	<1	<1	<1	
Methylene chloride	75-09-2	4	µg/L	<4	<4	<4	<4	<4	
trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	<1	<1	<1	<1	
1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	<1	<1	<1	
cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	<1	<1	<1	<1	
1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	<1	
1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	<1	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	<1	
1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	<1	
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	<1	
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	<1	
1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	<1	
1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	<1	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	<1	
1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	<1	
trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	<1	
cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	<1	<1	<1	
1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	<1	
1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	<1	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	<1	<1	<1	
1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	<1	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	<1	<1	<1	<1	
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	<1	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	<1	<1	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	<1	
1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	<1	<1	<1	
1.4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
1.2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	<1	<1	<1	
1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	<1	<1	<1	
1.2.3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	<1	<1	<1	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW20_12/07/17	GW21_12/07/17	GW12_12/07/17	GW16_12/07/17	GW13_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-001	EM1709192-002	EM1709192-003	EM1709192-004	EM1709192-005	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes</b>									
Chloroform	67-66-3	1	µg/L	<1	<1	12	<1	<1	
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	2	<1	<1	
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	<1	
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	150	<100	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	150	<50	<50	<50	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW20_12/07/17	GW21_12/07/17	GW12_12/07/17	GW16_12/07/17	GW13_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-001	EM1709192-002	EM1709192-003	EM1709192-004	EM1709192-005	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	120	<100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	120	<100	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	0.02	<0.02	----	<0.02	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	<0.02	<0.02	----	<0.02	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	0.11	<0.02	----	<0.02	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	<0.02	<0.02	----	<0.02	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	0.28	<0.01	----	<0.01	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	<0.02	<0.02	----	<0.02	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	<0.1	<0.1	----	<0.1	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	0.08	<0.02	----	<0.02	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	0.05	<0.02	----	<0.02	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	0.04	<0.02	----	<0.02	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW20_12/07/17	GW21_12/07/17	GW12_12/07/17	GW16_12/07/17	GW13_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-001	EM1709192-002	EM1709192-003	EM1709192-004	EM1709192-005	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	0.05	<0.01	----	<0.01	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	<0.02	<0.02	----	<0.02	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	<0.02	<0.02	----	<0.02	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	<0.02	<0.02	----	<0.02	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	<0.02	<0.02	----	<0.02	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	----	<0.02	<0.02	----	<0.02	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	<0.05	<0.05	----	<0.05	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	<0.02	<0.02	----	<0.02	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	<0.05	<0.05	----	<0.05	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	<0.05	<0.05	----	<0.05	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	----	<0.05	<0.05	----	<0.05	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	<0.05	<0.05	----	<0.05	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	<0.02	<0.02	----	<0.02	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	<0.02	<0.02	----	<0.02	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	<0.05	<0.05	----	<0.05	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	<0.05	<0.05	----	<0.05	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	<0.05	<0.05	----	<0.05	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW20_12/07/17	GW21_12/07/17	GW12_12/07/17	GW16_12/07/17	GW13_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-001	EM1709192-002	EM1709192-003	EM1709192-004	EM1709192-005	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	<0.05	<0.05	----	<0.05	
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	----	0.63	<0.01	----	<0.01	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	0.39	<0.01	----	<0.01	
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	0.63	<0.01	----	<0.01	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	109	107	103	103	105	
Toluene-D8	2037-26-5	1	%	113	112	105	104	109	
4-Bromofluorobenzene	460-00-4	1	%	116	113	103	109	110	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	23.9	26.0	30.0	31.1	26.2	
2-Chlorophenol-D4	93951-73-6	1	%	79.6	87.7	91.0	86.6	75.7	
2,4,6-Tribromophenol	118-79-6	1	%	75.8	85.1	76.4	77.5	66.4	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	76.6	82.5	89.0	86.3	76.4	
Anthracene-d10	1719-06-8	1	%	81.3	86.7	92.8	89.9	82.0	
4-Terphenyl-d14	1718-51-0	1	%	84.4	89.7	99.1	95.9	86.2	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	105	104	99.4	99.4	101	
Toluene-D8	2037-26-5	2	%	103	102	95.7	94.8	98.9	
4-Bromofluorobenzene	460-00-4	2	%	108	106	99.4	101	102	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	----	98.4	98.5	----	96.3	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW25_12/07/17	QC206_12/07/17	QC207_12/07/17	GW27_12/07/17	GW19_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-006	EM1709192-007	EM1709192-008	EM1709192-009	EM1709192-010	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.37	----	----	6.61	6.99	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	1980	----	----	132	14800	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	533	----	----	73	2000	
Total Alkalinity as CaCO3	----	1	mg/L	533	----	----	73	2000	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1040	----	----	20	42	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	1560	----	----	12	233	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	60	----	----	11	8830	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	284	----	----	32	290	
Magnesium	7439-95-4	1	mg/L	145	----	----	3	881	
Sodium	7440-23-5	1	mg/L	161	----	----	7	5170	
Potassium	7440-09-7	1	mg/L	35	----	----	<1	160	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.01	----	----	0.07	0.01	
Arsenic	7440-38-2	0.001	mg/L	0.002	----	----	<0.001	0.002	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	<0.001	0.004	
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	<0.001	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	<0.001	<0.001	
Manganese	7439-96-5	0.001	mg/L	0.668	----	----	0.010	0.417	
Nickel	7440-02-0	0.001	mg/L	0.024	----	----	0.012	0.001	
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	<0.01	<0.01	
Zinc	7440-66-6	0.005	mg/L	0.007	----	----	0.060	<0.005	
Iron	7439-89-6	0.05	mg/L	14.3	----	----	0.16	12.9	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	2.68	<0.01	----	1.76	0.55	
Arsenic	7440-38-2	0.001	mg/L	0.009	<0.001	----	0.009	0.003	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW25_12/07/17	QC206_12/07/17	QC207_12/07/17	GW27_12/07/17	GW19_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-006	EM1709192-007	EM1709192-008	EM1709192-009	EM1709192-010	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.009	<0.001	----	0.006	0.010	
Copper	7440-50-8	0.001	mg/L	0.004	<0.001	----	0.008	0.017	
Nickel	7440-02-0	0.001	mg/L	0.032	<0.001	----	0.013	0.003	
Lead	7439-92-1	0.001	mg/L	0.004	<0.001	----	0.003	0.002	
Zinc	7440-66-6	0.005	mg/L	0.015	<0.005	----	0.073	1.05	
Manganese	7439-96-5	0.001	mg/L	0.726	----	----	0.018	0.479	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	----	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	22.1	<0.05	----	8.04	16.9	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.4	----	----	0.2	0.5	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	4.97	----	----	0.05	36.6	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	----	----	0.02	<0.01	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	0.01	----	----	0.27	<0.01	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	0.01	----	----	0.29	<0.01	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	----	----	<0.01	<0.01	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	34.0	----	----	2.18	290	
Total Cations	----	0.01	meq/L	34.0	----	----	2.15	316	
Ionic Balance	----	0.01	%	0.01	----	----	0.85	4.30	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	11	----	----	2	86	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	----	----	<1	<1	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW25_12/07/17	QC206_12/07/17	QC207_12/07/17	GW27_12/07/17	GW19_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-006	EM1709192-007	EM1709192-008	EM1709192-009	EM1709192-010	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	----	----	<1	<1	
Ethylbenzene	100-41-4	1	µg/L	<1	----	----	<1	<1	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	----	----	<1	<1	
Styrene	100-42-5	1	µg/L	<1	----	----	<1	<1	
ortho-Xylene	95-47-6	1	µg/L	<1	----	----	<1	<1	
Isopropylbenzene	98-82-8	1	µg/L	<1	----	----	<1	<1	
n-Propylbenzene	103-65-1	1	µg/L	<1	----	----	<1	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	----	----	<1	<1	
sec-Butylbenzene	135-98-8	1	µg/L	<1	----	----	<1	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	----	----	<1	<1	
tert-Butylbenzene	98-06-6	1	µg/L	<1	----	----	<1	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	----	----	<1	<1	
n-Butylbenzene	104-51-8	1	µg/L	<1	----	----	<1	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	----	----	<10	<10	
Vinyl Acetate	108-05-4	10	µg/L	<10	----	----	<10	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	----	----	<10	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	----	----	<10	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	----	----	<10	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	----	----	<1	2	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	----	----	<1	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	----	----	<1	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	----	----	<2	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	----	----	<2	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	----	----	<1	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	----	----	<10	<10	
Chloromethane	74-87-3	10	µg/L	<10	----	----	<10	<10	
Vinyl chloride	75-01-4	10	µg/L	<10.0	----	----	<10.0	<10.0	
Bromomethane	74-83-9	10	µg/L	<10	----	----	<10	<10	
Chloroethane	75-00-3	10	µg/L	<10	----	----	<10	<10	
Trichlorofluoromethane	75-69-4	10	µg/L	<10	----	----	<10	<10	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW25_12/07/17	QC206_12/07/17	QC207_12/07/17	GW27_12/07/17	GW19_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709192-006	EM1709192-007	EM1709192-008	EM1709192-009	EM1709192-010	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	----	----	<1	<1	
Iodomethane	74-88-4	1	µg/L	<1	----	----	<1	<1	
Methylene chloride	75-09-2	4	µg/L	<4	----	----	<4	<4	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	----	----	<1	<1	
1,1-Dichloroethane	75-34-3	1	µg/L	<1	----	----	<1	<1	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	12	----	----	<1	<1	
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	----	----	<1	<1	
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	----	----	<1	<1	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	----	----	<1	<1	
1,2-Dichloroethane	107-06-2	1	µg/L	<1	----	----	<1	<1	
Trichloroethene	79-01-6	1	µg/L	<1	----	----	<1	<1	
Dibromomethane	74-95-3	1	µg/L	<1	----	----	<1	<1	
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	----	----	<1	<1	
1,3-Dichloropropane	142-28-9	1	µg/L	<1	----	----	<1	<1	
Tetrachloroethene	127-18-4	1	µg/L	<1	----	----	<1	<1	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	----	----	<1	<1	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	----	----	<1	<1	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	----	----	<1	<1	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	----	----	<1	<1	
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	----	----	<1	<1	
Pentachloroethane	76-01-7	1	µg/L	<1	----	----	<1	<1	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	----	----	<1	<1	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	----	----	<1.0	<1.0	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	----	----	<1	<1	
Bromobenzene	108-86-1	1	µg/L	<1	----	----	<1	<1	
2-Chlorotoluene	95-49-8	1	µg/L	<1	----	----	<1	<1	
4-Chlorotoluene	106-43-4	1	µg/L	<1	----	----	<1	<1	
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	----	----	<1	<1	
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	----	----	<1.0	<1.0	
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	----	----	<1	<1	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	----	----	<1	<1	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	----	----	<1	<1	
<b>EP074G: Trihalomethanes</b>									





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW25_12/07/17	QC206_12/07/17	QC207_12/07/17	GW27_12/07/17	GW19_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-006	EM1709192-007	EM1709192-008	EM1709192-009	EM1709192-010	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	<1	----	----	<1	<1	
Bromodichloromethane	75-27-4	1	µg/L	<1	----	----	<1	<1	
Dibromochloromethane	124-48-1	1	µg/L	<1	----	----	<1	<1	
Bromoform	75-25-2	1	µg/L	<1	----	----	<1	<1	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	----	----	<5	<5	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	----	----	<1.0	<1.0	
Acenaphthylene	208-96-8	1	µg/L	<1.0	----	----	<1.0	<1.0	
Acenaphthene	83-32-9	1	µg/L	<1.0	----	----	<1.0	<1.0	
Fluorene	86-73-7	1	µg/L	<1.0	----	----	<1.0	<1.0	
Phenanthrene	85-01-8	1	µg/L	<1.0	----	----	<1.0	<1.0	
Anthracene	120-12-7	1	µg/L	<1.0	----	----	<1.0	<1.0	
Fluoranthene	206-44-0	1	µg/L	<1.0	----	----	<1.0	<1.0	
Pyrene	129-00-0	1	µg/L	<1.0	----	----	<1.0	<1.0	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	----	----	<1.0	<1.0	
Chrysene	218-01-9	1	µg/L	<1.0	----	----	<1.0	<1.0	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	----	----	<1.0	<1.0	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	----	----	<1.0	<1.0	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	<0.5	<0.5	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	----	----	<1.0	<1.0	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	----	----	<1.0	<1.0	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	----	----	<1.0	<1.0	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	<0.5	<0.5	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	----	----	<0.5	<0.5	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	<50	----	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	<100	----	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	----	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	----	<50	<50	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW25_12/07/17	QC206_12/07/17	QC207_12/07/17	GW27_12/07/17	GW19_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709192-006	EM1709192-007	EM1709192-008	EM1709192-009	EM1709192-010	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	----	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	----	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	----	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	----	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	----	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	----	----	<0.02	<0.02	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	----	----	<0.02	<0.02	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	----	----	<b>0.27</b>	<0.02	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	----	----	<0.02	<0.02	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	----	----	<b>4.62</b>	<0.01	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	----	----	<0.02	<0.02	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	----	----	<0.1	<0.1	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	----	----	<0.02	<0.02	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	----	----	<0.02	<0.02	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	----	----	<0.02	<0.02	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW25_12/07/17	QC206_12/07/17	QC207_12/07/17	GW27_12/07/17	GW19_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-006	EM1709192-007	EM1709192-008	EM1709192-009	EM1709192-010	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	----	----	0.01	<0.01	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	----	----	<0.02	<0.02	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	----	----	<0.02	<0.02	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	----	----	<0.02	<0.02	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	----	----	<0.02	<0.02	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	----	----	----	<0.02	<0.02	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	----	----	<0.05	<0.05	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	----	----	<0.02	<0.02	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	----	----	<0.05	<0.05	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	----	----	<0.05	<0.05	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	----	----	----	<0.05	<0.05	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	----	----	<0.05	<0.05	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	----	----	<0.02	<0.02	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	----	----	<0.02	<0.02	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	----	----	<0.05	<0.05	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	----	----	<0.05	<0.05	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	----	----	<0.05	<0.05	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW25_12/07/17	QC206_12/07/17	QC207_12/07/17	GW27_12/07/17	GW19_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-006	EM1709192-007	EM1709192-008	EM1709192-009	EM1709192-010	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	----	----	<0.05	<0.05	
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	----	----	----	4.90	<0.01	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	----	----	4.89	<0.01	
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	----	----	4.90	<0.01	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	104	----	----	99.8	114	
Toluene-D8	2037-26-5	1	%	108	----	----	106	114	
4-Bromofluorobenzene	460-00-4	1	%	104	----	----	107	115	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	29.6	----	----	30.6	28.5	
2-Chlorophenol-D4	93951-73-6	1	%	90.4	----	----	85.8	76.6	
2,4,6-Tribromophenol	118-79-6	1	%	81.4	----	----	79.6	70.5	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	87.2	----	----	85.7	69.5	
Anthracene-d10	1719-06-8	1	%	91.1	----	----	90.6	72.9	
4-Terphenyl-d14	1718-51-0	1	%	96.6	----	----	97.8	76.4	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	100	94.2	97.7	96.6	110	
Toluene-D8	2037-26-5	2	%	97.9	90.1	92.2	96.5	104	
4-Bromofluorobenzene	460-00-4	2	%	98.1	96.2	101	101	109	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	----	----	----	97.7	88.2	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW35_12/07/17	GW24_12/07/17	GW17_12/07/17	GW15_12/07/17	QC307_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709192-011	EM1709192-012	EM1709192-013	EM1709192-014	EM1709192-015	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	5.32	6.80	6.83	7.42	----	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	3730	1880	931	20500	----	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	35	732	294	2930	----	
Total Alkalinity as CaCO3	----	1	mg/L	35	732	294	2930	----	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	2510	<1	304	171	----	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	3220	15	496	626	----	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	130	761	119	12200	----	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	454	102	126	322	----	
Magnesium	7439-95-4	1	mg/L	253	71	31	1090	----	
Sodium	7440-23-5	1	mg/L	279	555	146	7330	----	
Potassium	7440-09-7	1	mg/L	40	39	14	231	----	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	8.16	0.03	0.04	0.03	----	
Arsenic	7440-38-2	0.001	mg/L	0.009	0.004	0.004	0.002	----	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----	
Chromium	7440-47-3	0.001	mg/L	0.002	0.003	0.003	0.017	----	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	0.005	----	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----	
Manganese	7439-96-5	0.001	mg/L	3.52	0.500	0.442	0.033	----	
Nickel	7440-02-0	0.001	mg/L	0.102	0.028	0.012	0.003	----	
Selenium	7782-49-2	0.01	mg/L	0.01	<0.01	<0.01	<0.01	----	
Zinc	7440-66-6	0.005	mg/L	1.08	0.038	0.258	0.017	----	
Iron	7439-89-6	0.05	mg/L	48.4	13.5	1.39	<0.05	----	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	8.85	1.61	1.10	0.32	<0.01	
Arsenic	7440-38-2	0.001	mg/L	0.010	0.007	0.006	0.007	<0.001	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW35_12/07/17	GW24_12/07/17	GW17_12/07/17	GW15_12/07/17	QC307_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-011	EM1709192-012	EM1709192-013	EM1709192-014	EM1709192-015	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	0.0002	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.003	0.007	0.005	0.020	<0.001	
Copper	7440-50-8	0.001	mg/L	0.002	0.005	0.001	12.6	<0.001	
Nickel	7440-02-0	0.001	mg/L	0.104	0.035	0.009	0.064	<0.001	
Lead	7439-92-1	0.001	mg/L	0.002	0.002	0.001	0.001	<0.001	
Zinc	7440-66-6	0.005	mg/L	1.17	0.184	0.270	1.30	<0.005	
Manganese	7439-96-5	0.001	mg/L	3.52	0.565	0.456	0.048	----	
Selenium	7782-49-2	0.01	mg/L	0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	48.0	16.8	2.68	1.46	<0.05	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.2	0.7	0.4	0.5	----	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	7.24	10.4	0.63	36.0	----	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	0.04	0.02	0.07	0.02	----	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	0.04	0.02	0.07	0.02	----	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.03	0.08	4.70	----	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	56.6	36.1	15.6	406	----	
Total Cations	----	0.01	meq/L	56.6	36.1	15.5	430	----	
Ionic Balance	----	0.01	%	<0.01	0.03	0.04	2.90	----	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	11	33	13	108	----	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	52	<1	<1	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW35_12/07/17	GW24_12/07/17	GW17_12/07/17	GW15_12/07/17	QC307_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-011	EM1709192-012	EM1709192-013	EM1709192-014	EM1709192-015	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	<1	<1	<1	----	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	<1	<1	----	
meta- & para-Xylene	108-38-3	106-42-3	1	µg/L	<1	2	<1	----	
Styrene	100-42-5	1	µg/L	<1	<1	<1	<1	----	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	<1	<1	----	
Isopropylbenzene	98-82-8	1	µg/L	<1	3	<1	<1	----	
n-Propylbenzene	103-65-1	1	µg/L	<1	1	<1	<1	----	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	<1	<1	----	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	<1	<1	----	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	<1	<1	----	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	<1	<1	----	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	<1	<1	----	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	<1	<1	----	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	40	<10	30	----	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	<10	<10	----	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	<10	<10	----	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	<10	<10	----	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	<10	<10	----	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	<1	<1	3	----	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	----	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	----	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	----	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	----	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	----	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	<10	<10	----	
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	40	----	
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	<10.0	<10.0	----	
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	----	
Chloroethane	75-00-3	10	µg/L	<10	<10	<10	<10	----	
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW35_12/07/17	GW24_12/07/17	GW17_12/07/17	GW15_12/07/17	QC307_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-011	EM1709192-012	EM1709192-013	EM1709192-014	EM1709192-015	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	----	
Iodomethane	74-88-4	1	µg/L	<1	<1	<1	<1	----	
Methylene chloride	75-09-2	4	µg/L	<4	<4	<4	<4	----	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	<1	<1	----	
1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	<1	<1	----	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	<1	<1	----	
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	----	
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	----	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	----	
1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	----	
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	----	
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	----	
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	----	
1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	----	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	----	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	----	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	----	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	<1	<1	----	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	----	
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	----	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	<1	<1	----	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	----	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	<1	<1	<1	----	
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	----	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	<1	----	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	----	
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	<1	<1	----	
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	<1	<1	----	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	<1	<1	----	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	<1	<1	----	
<b>EP074G: Trihalomethanes</b>									





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW35_12/07/17	GW24_12/07/17	GW17_12/07/17	GW15_12/07/17	QC307_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-011	EM1709192-012	EM1709192-013	EM1709192-014	EM1709192-015	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	<1	<1	<1	<1	----	
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	<1	<1	----	
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	----	
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	----	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Acenaphthene	83-32-9	1	µg/L	<1.0	1.1	<1.0	<1.0	----	
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	1.1	<0.5	<0.5	----	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	60	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	360	<50	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	210	<100	120	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	570	<50	120	<50	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	70	<20	<20	<20	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW35_12/07/17	GW24_12/07/17	GW17_12/07/17	GW15_12/07/17	QC307_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709192-011	EM1709192-012	EM1709192-013	EM1709192-014	EM1709192-015	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	420	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	140	<100	110	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	560	<100	110	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	420	<100	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	51	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	53	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	101	104	97.1	113	----	
Toluene-D8	2037-26-5	1	%	103	105	97.4	112	----	
4-Bromofluorobenzene	460-00-4	1	%	103	93.5	96.6	110	----	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	27.6	26.6	27.3	31.2	----	
2-Chlorophenol-D4	93951-73-6	1	%	80.8	86.6	82.4	88.7	----	
2,4,6-Tribromophenol	118-79-6	1	%	78.2	95.7	80.8	85.7	----	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	78.4	85.4	79.7	84.5	----	
Anthracene-d10	1719-06-8	1	%	81.6	89.2	85.8	88.9	----	
4-Terphenyl-d14	1718-51-0	1	%	86.8	95.5	93.1	87.5	----	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	97.5	115	93.8	109	92.2	
Toluene-D8	2037-26-5	2	%	93.8	102	88.8	102	90.1	
4-Bromofluorobenzene	460-00-4	2	%	97.4	99.4	93.4	106	94.4	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC308_12/07/17	DAMW5_02_12/07/17	F3_12/07/17	MW1333_02_12/07/17	MW1371_02_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709192-016	EM1709192-017	EM1709192-018	EM1709192-019	EM1709192-020	EM1709192-020
				Result	Result	Result	Result	Result	Result
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.08	7.38	5.72	7.48	7.41	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	14100	428	222	857	730	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	2060	308	210	727	611	
Total Alkalinity as CaCO3	----	1	mg/L	2060	308	210	727	611	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	29	7	<1	<5	59	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	232	6	5	17	102	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	8840	14	13	151	46	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	287	66	19	92	58	
Magnesium	7439-95-4	1	mg/L	892	10	19	96	46	
Sodium	7440-23-5	1	mg/L	5240	46	28	130	179	
Potassium	7440-09-7	1	mg/L	162	12	12	19	13	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.02	<0.01	0.05	0.04	0.35	
Arsenic	7440-38-2	0.001	mg/L	0.002	0.005	0.002	0.003	0.032	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.006	<0.001	<0.001	0.001	0.008	
Copper	7440-50-8	0.001	mg/L	0.012	<0.001	<0.001	<0.001	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Manganese	7439-96-5	0.001	mg/L	0.501	0.349	0.557	0.211	0.143	
Nickel	7440-02-0	0.001	mg/L	0.003	0.019	0.030	0.034	0.013	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Zinc	7440-66-6	0.005	mg/L	0.014	0.009	0.015	0.025	<0.005	
Iron	7439-89-6	0.05	mg/L	23.0	4.38	6.19	2.57	0.09	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.60	0.30	2.44	10.6	0.64	
Arsenic	7440-38-2	0.001	mg/L	0.003	0.011	0.004	0.020	0.033	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC308_12/07/17	DAMW5_02_12/07/17	F3_12/07/17	MW1333_02_12/07/17	MW1371_02_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-016	EM1709192-017	EM1709192-018	EM1709192-019	EM1709192-020	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.012	0.004	0.009	0.032	0.009	
Copper	7440-50-8	0.001	mg/L	0.020	0.006	0.006	0.012	<0.001	
Nickel	7440-02-0	0.001	mg/L	0.005	0.023	0.037	0.046	0.010	
Lead	7439-92-1	0.001	mg/L	0.002	0.008	0.008	0.016	<0.001	
Zinc	7440-66-6	0.005	mg/L	0.993	0.155	0.050	0.090	0.921	
Manganese	7439-96-5	0.001	mg/L	0.496	0.372	0.604	0.276	0.168	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	21.5	8.45	11.7	23.5	0.23	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.5	1.0	0.4	0.4	0.6	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	34.0	1.02	1.62	8.44	6.69	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	0.02	<0.01	<0.01	<0.01	<0.01	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	<0.01	0.02	<0.01	5.89	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.02	<0.01	5.89	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	0.03	0.48	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	291	6.69	4.56	18.8	14.7	
Total Cations	----	0.01	meq/L	----	----	4.37	----	----	
Total Cations	----	0.01	meq/L	320	6.42	----	18.6	14.8	
Ionic Balance	----	0.01	%	----	----	2.21	----	----	
Ionic Balance	----	0.01	%	4.69	2.06	----	0.41	0.22	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	90	5	5	25	33	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC308_12/07/17	DAMW5_02_12/07/17	F3_12/07/17	MW1333_02_12/07/17	MW1371_02_12/07/17
Client sampling date / time					12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709192-016	EM1709192-017	EM1709192-018	EM1709192-019	EM1709192-020	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	1	µg/L	<1	<1	<1	<1	<1	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	<1	<1	<1	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	<1	<1	<1	
Styrene	100-42-5	1	µg/L	<1	<1	<1	<1	<1	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	<1	<1	<1	
Isopropylbenzene	98-82-8	1	µg/L	<1	<1	<1	<1	<1	
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	<1	<1	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	<1	<1	<1	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	<1	<1	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	<1	<1	<1	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	<1	<1	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	<1	<1	<1	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	<10	<10	<10	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	<10	<10	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	<10	<10	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	<10	<10	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	<10	<10	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	1	<1	<1	<1	<1	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	<10	<10	<10	
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	<10	
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	<10.0	<10.0	<10.0	
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	<10	
Chloroethane	75-00-3	10	µg/L	<10	<10	<10	20	<10	







## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC308_12/07/17	DAMW5_02_12/07/17	F3_12/07/17	MW1333_02_12/07/17	MW1371_02_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709192-016	EM1709192-017	EM1709192-018	EM1709192-019	EM1709192-020	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L	<100	<100	100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100	<100
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	<2
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	<2
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	<5
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	<0.02	----	<0.02	----	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	<0.02	----	<0.02	----	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	0.02	----	<0.02	----	<0.02
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	<0.02	----	<0.02	----	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	0.01	----	<0.01	----	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	<0.02	----	<0.02	----	<0.02
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	<0.1	----	<0.1	----	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	<0.02	----	<0.02	----	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	<0.02	----	<0.02	----	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	<0.02	----	<0.02	----	<0.02





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC308_12/07/17	DAMW5_02_12/07/17	F3_12/07/17	MW1333_02_12/07/17	MW1371_02_12/07/17
Client sampling date / time					12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00
Compound	CAS Number	LOR	Unit		EM1709192-016	EM1709192-017	EM1709192-018	EM1709192-019	EM1709192-020
					Result	Result	Result	Result	Result
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	<0.01	----	<0.01	----	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	<0.02	----	<0.02	----	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	<0.02	----	<0.02	----	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	<0.02	----	<0.02	----	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	<0.02	----	<0.02	----	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	----	<0.02	----	<0.02	----	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	<0.05	----	<0.05	----	<0.05
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	<0.02	----	<0.02	----	<0.02
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	<0.05	----	<0.05	----	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	<0.05	----	<0.05	----	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	----	<0.05	----	<0.05	----	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	<0.05	----	<0.05	----	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	<0.02	----	<0.02	----	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	<0.02	----	<0.02	----	<0.02
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	<0.05	----	<0.05	----	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	<0.05	----	<0.05	----	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	<0.05	----	<0.05	----	<0.05



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC308_12/07/17	DAMW5_02_12/07/17	F3_12/07/17	MW1333_02_12/07/17	MW1371_02_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-016	EM1709192-017	EM1709192-018	EM1709192-019	EM1709192-020	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	<0.05	----	<0.05	----	
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	----	0.03	----	<0.01	----	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	0.03	----	<0.01	----	
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	0.03	----	<0.01	----	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	108	99.8	97.5	97.8	103	
Toluene-D8	2037-26-5	1	%	108	106	103	104	110	
4-Bromofluorobenzene	460-00-4	1	%	111	102	101	102	107	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	24.3	25.3	27.5	23.3	23.5	
2-Chlorophenol-D4	93951-73-6	1	%	61.8	72.9	75.0	67.3	79.1	
2,4,6-Tribromophenol	118-79-6	1	%	77.2	68.0	79.0	67.7	78.4	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	64.2	69.7	76.6	65.5	80.0	
Anthracene-d10	1719-06-8	1	%	76.8	71.4	81.4	69.1	83.1	
4-Terphenyl-d14	1718-51-0	1	%	80.8	73.4	86.7	69.6	89.5	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	104	96.5	94.2	94.7	99.7	
Toluene-D8	2037-26-5	2	%	98.6	96.4	94.0	94.9	99.8	
4-Bromofluorobenzene	460-00-4	2	%	103	99.5	97.9	95.1	102	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	----	96.0	----	92.3	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GMW3_12/07/17	QC_103_12/07/17	QC104_12/07/17	QC105_12/07/17	QC106_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-022	EM1709192-023	EM1709192-024	EM1709192-025	EM1709192-026	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.47	----	----	----	----	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	476	----	----	----	----	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	398	----	----	----	----	
Total Alkalinity as CaCO3	----	1	mg/L	398	----	----	----	----	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	12	----	----	----	----	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	23	----	----	----	----	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	23	----	----	----	----	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	24	----	----	----	----	
Magnesium	7439-95-4	1	mg/L	24	----	----	----	----	
Sodium	7440-23-5	1	mg/L	98	----	----	----	----	
Potassium	7440-09-7	1	mg/L	33	----	----	----	----	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.03	----	----	----	----	
Arsenic	7440-38-2	0.001	mg/L	0.045	----	----	----	----	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----	
Chromium	7440-47-3	0.001	mg/L	0.004	----	----	----	----	
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----	
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----	
Manganese	7439-96-5	0.001	mg/L	0.112	----	----	----	----	
Nickel	7440-02-0	0.001	mg/L	0.023	----	----	----	----	
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	----	----	
Zinc	7440-66-6	0.005	mg/L	0.011	----	----	----	----	
Iron	7439-89-6	0.05	mg/L	6.97	----	----	----	----	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	1.05	<0.01	<0.01	----	----	
Arsenic	7440-38-2	0.001	mg/L	0.122	<0.001	<0.001	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GMW3_12/07/17	QC_103_12/07/17	QC104_12/07/17	QC105_12/07/17	QC106_12/07/17
Client sampling date / time				12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709192-022	EM1709192-023	EM1709192-024	EM1709192-025	EM1709192-026	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----	
Chromium	7440-47-3	0.001	mg/L	<b>0.010</b>	<0.001	<0.001	----	----	
Copper	7440-50-8	0.001	mg/L	<b>0.012</b>	<0.001	<0.001	----	----	
Nickel	7440-02-0	0.001	mg/L	<b>0.028</b>	<0.001	<0.001	----	----	
Lead	7439-92-1	0.001	mg/L	<b>0.006</b>	<0.001	<0.001	----	----	
Zinc	7440-66-6	0.005	mg/L	<b>0.032</b>	<0.005	<0.005	----	----	
Manganese	7439-96-5	0.001	mg/L	<b>0.130</b>	----	----	----	----	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	----	----	
Iron	7439-89-6	0.05	mg/L	<b>15.8</b>	<0.05	<0.05	----	----	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	<b>1.1</b>	----	----	----	----	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	<b>13.2</b>	----	----	----	----	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<b>0.01</b>	----	----	----	----	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<b>0.03</b>	----	----	----	----	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<b>0.04</b>	----	----	----	----	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<b>0.15</b>	----	----	----	----	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	<b>8.85</b>	----	----	----	----	
Total Cations	----	0.01	meq/L	<b>8.28</b>	----	----	----	----	
Ionic Balance	----	0.01	%	<b>3.33</b>	----	----	----	----	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	<b>48</b>	----	----	----	----	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	----	----	----	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GMW3_12/07/17	QC_103_12/07/17	QC104_12/07/17	QC105_12/07/17	QC106_12/07/17
Client sampling date / time					12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709192-022	EM1709192-023	EM1709192-024	EM1709192-025	EM1709192-026	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	----	----	----	----	----
Ethylbenzene	100-41-4	1	µg/L	<1	----	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	----	----	----	----	----
Styrene	100-42-5	1	µg/L	<1	----	----	----	----	----
ortho-Xylene	95-47-6	1	µg/L	<1	----	----	----	----	----
Isopropylbenzene	98-82-8	1	µg/L	<1	----	----	----	----	----
n-Propylbenzene	103-65-1	1	µg/L	<1	----	----	----	----	----
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	----	----	----	----	----
sec-Butylbenzene	135-98-8	1	µg/L	<1	----	----	----	----	----
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	----	----	----	----	----
tert-Butylbenzene	98-06-6	1	µg/L	<1	----	----	----	----	----
p-Isopropyltoluene	99-87-6	1	µg/L	<1	----	----	----	----	----
n-Butylbenzene	104-51-8	1	µg/L	<1	----	----	----	----	----
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	----	----	----	----	----
Vinyl Acetate	108-05-4	10	µg/L	<10	----	----	----	----	----
2-Butanone (MEK)	78-93-3	10	µg/L	<10	----	----	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	----	----	----	----	----
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	----	----	----	----	----
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	----	----	----	----	----
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	----	----	----	----	----
1,2-Dichloropropane	78-87-5	1	µg/L	<1	----	----	----	----	----
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	----	----	----	----	----
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	----	----	----	----	----
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	----	----	----	----	----
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	----	----	----	----	----
Chloromethane	74-87-3	10	µg/L	<10	----	----	----	----	----
Vinyl chloride	75-01-4	10.0	µg/L	<10.0	----	----	----	----	----
Bromomethane	74-83-9	10	µg/L	<10	----	----	----	----	----
Chloroethane	75-00-3	10	µg/L	<10	----	----	----	----	----
Trichlorofluoromethane	75-69-4	10	µg/L	<10	----	----	----	----	----



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GMW3_12/07/17	QC_103_12/07/17	QC104_12/07/17	QC105_12/07/17	QC106_12/07/17
Client sampling date / time					12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709192-022	EM1709192-023	EM1709192-024	EM1709192-025	EM1709192-026	EM1709192-026
				Result	Result	Result	Result	Result	Result
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	----	----	----	----	----
Iodomethane	74-88-4	1	µg/L	<1	----	----	----	----	----
Methylene chloride	75-09-2	4	µg/L	<4	----	----	----	----	----
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	----	----	----	----	----
1,1-Dichloroethane	75-34-3	1	µg/L	<1	----	----	----	----	----
cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	----	----	----	----	----
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	----	----	----	----	----
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	----	----	----	----	----
Carbon Tetrachloride	56-23-5	1	µg/L	<1	----	----	----	----	----
1,2-Dichloroethane	107-06-2	1	µg/L	<1	----	----	----	----	----
Trichloroethene	79-01-6	1	µg/L	<1	----	----	----	----	----
Dibromomethane	74-95-3	1	µg/L	<1	----	----	----	----	----
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	----	----	----	----	----
1,3-Dichloropropane	142-28-9	1	µg/L	<1	----	----	----	----	----
Tetrachloroethene	127-18-4	1	µg/L	<1	----	----	----	----	----
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	----	----	----	----	----
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	----	----	----	----	----
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	----	----	----	----	----
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	----	----	----	----	----
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	----	----	----	----	----
Pentachloroethane	76-01-7	1	µg/L	<1	----	----	----	----	----
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	----	----	----	----	----
Hexachlorobutadiene	87-68-3	1.0	µg/L	<1.0	----	----	----	----	----
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	----	----	----	----	----
Bromobenzene	108-86-1	1	µg/L	<1	----	----	----	----	----
2-Chlorotoluene	95-49-8	1	µg/L	<1	----	----	----	----	----
4-Chlorotoluene	106-43-4	1	µg/L	<1	----	----	----	----	----
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	----	----	----	----	----
1,4-Dichlorobenzene	106-46-7	1.0	µg/L	<1.0	----	----	----	----	----
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	----	----	----	----	----
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	----	----	----	----	----
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	----	----	----	----	----
<b>EP074G: Trihalomethanes</b>									





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GMW3_12/07/17	QC_103_12/07/17	QC104_12/07/17	QC105_12/07/17	QC106_12/07/17
Client sampling date / time					12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00	12-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709192-022	EM1709192-023	EM1709192-024	EM1709192-025	EM1709192-026	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	450	<100	<100	----	----	
>C16 - C34 Fraction	----	100	µg/L	1180	<100	<100	----	----	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	----	----	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	1630	<100	<100	----	----	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	450	<100	<100	----	----	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	109	----	----	----	----	
Toluene-D8	2037-26-5	1	%	108	----	----	----	----	
4-Bromofluorobenzene	460-00-4	1	%	106	----	----	----	----	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1.0	%	31.0	----	----	----	----	
2-Chlorophenol-D4	93951-73-6	1.0	%	74.4	----	----	----	----	
2,4,6-Tribromophenol	118-79-6	1.0	%	77.4	----	----	----	----	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1.0	%	70.4	----	----	----	----	
Anthracene-d10	1719-06-8	1.0	%	84.0	----	----	----	----	
4-Terphenyl-d14	1718-51-0	1.0	%	87.7	----	----	----	----	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	117	99.1	96.5	95.7	97.4	
Toluene-D8	2037-26-5	2	%	114	91.8	91.1	89.8	96.0	
4-Bromofluorobenzene	460-00-4	2	%	115	98.2	102	101	105	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Client sample ID		MW9AI_12/07/17	QC108_14/07/17	----	----	----
Client sampling date / time				12-Jul-2017 00:00	14-Jul-2017 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EM1709192-027	EM1709192-028	-----	-----	-----
				Result	Result	----	----	----
<b>EA005P: pH by PC Titrator</b>								
pH Value	----	0.01	pH Unit	7.13	----	----	----	----
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>								
Total Dissolved Solids @180°C	----	10	mg/L	1510	----	----	----	----
<b>ED037P: Alkalinity by PC Titrator</b>								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	505	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	505	----	----	----	----
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	127	----	----	----	----
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>								
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	266	----	----	----	----
<b>ED045G: Chloride by Discrete Analyser</b>								
Chloride	16887-00-6	1	mg/L	335	----	----	----	----
<b>ED093F: Dissolved Major Cations</b>								
Calcium	7440-70-2	1	mg/L	32	----	----	----	----
Magnesium	7439-95-4	1	mg/L	12	----	----	----	----
Sodium	7440-23-5	1	mg/L	393	----	----	----	----
Potassium	7440-09-7	1	mg/L	16	----	----	----	----
<b>EG020F: Dissolved Metals by ICP-MS</b>								
Aluminium	7429-90-5	0.01	mg/L	1.81	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	0.023	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	0.040	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	0.023	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	0.016	----	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	0.009	----	----	----	----
Iron	7439-89-6	0.05	mg/L	3.02	----	----	----	----
<b>EG020T: Total Metals by ICP-MS</b>								
Aluminium	7429-90-5	0.01	mg/L	12.0	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	0.044	----	----	----	----



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	MW9AI_12/07/17	QC108_14/07/17	----	----	----
Client sampling date / time				12-Jul-2017 00:00	14-Jul-2017 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	EM1709192-027	EM1709192-028	-----	-----	-----	
				Result	Result	----	----	----	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	----	----	
Chromium	7440-47-3	0.001	mg/L	0.106	----	----	----	----	
Copper	7440-50-8	0.001	mg/L	0.008	----	----	----	----	
Nickel	7440-02-0	0.001	mg/L	0.039	----	----	----	----	
Lead	7439-92-1	0.001	mg/L	0.008	----	----	----	----	
Zinc	7440-66-6	0.005	mg/L	0.038	----	----	----	----	
Manganese	7439-96-5	0.001	mg/L	0.042	----	----	----	----	
Selenium	7782-49-2	0.01	mg/L	0.01	----	----	----	----	
Iron	7439-89-6	0.05	mg/L	13.2	----	----	----	----	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	<0.1	----	----	----	----	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	13.4	----	----	----	----	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	----	----	----	----	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	0.13	----	----	----	----	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	0.13	----	----	----	----	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.06	----	----	----	----	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	22.2	----	----	----	----	
Total Cations	----	0.01	meq/L	20.1	----	----	----	----	
Ionic Balance	----	0.01	%	4.96	----	----	----	----	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	134	----	----	----	----	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	----	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	MW9AI_12/07/17	QC108_14/07/17	----	----	----
Client sampling date / time				12-Jul-2017 00:00	14-Jul-2017 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	EM1709192-027	EM1709192-028	-----	-----	-----	
				Result	Result	----	----	----	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	----	----	----	----	----
Ethylbenzene	100-41-4	1	µg/L	<1	----	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	----	----	----	----	----
Styrene	100-42-5	1	µg/L	<1	----	----	----	----	----
ortho-Xylene	95-47-6	1	µg/L	<1	----	----	----	----	----
Isopropylbenzene	98-82-8	1	µg/L	<1	----	----	----	----	----
n-Propylbenzene	103-65-1	1	µg/L	<1	----	----	----	----	----
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	----	----	----	----	----
sec-Butylbenzene	135-98-8	1	µg/L	<1	----	----	----	----	----
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	----	----	----	----	----
tert-Butylbenzene	98-06-6	1	µg/L	<1	----	----	----	----	----
p-Isopropyltoluene	99-87-6	1	µg/L	<1	----	----	----	----	----
n-Butylbenzene	104-51-8	1	µg/L	<1	----	----	----	----	----
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	----	----	----	----	----
Vinyl Acetate	108-05-4	10	µg/L	<10	----	----	----	----	----
2-Butanone (MEK)	78-93-3	10	µg/L	<10	----	----	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	----	----	----	----	----
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	----	----	----	----	----
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	----	----	----	----	----
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	----	----	----	----	----
1,2-Dichloropropane	78-87-5	1	µg/L	<1	----	----	----	----	----
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	----	----	----	----	----
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	----	----	----	----	----
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	----	----	----	----	----
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	----	----	----	----	----
Chloromethane	74-87-3	10	µg/L	<10	----	----	----	----	----
Vinyl chloride	75-01-4	10	µg/L	<10.0	----	----	----	----	----
Bromomethane	74-83-9	10	µg/L	<10	----	----	----	----	----
Chloroethane	75-00-3	10	µg/L	<10	----	----	----	----	----
Trichlorofluoromethane	75-69-4	10	µg/L	<10	----	----	----	----	----



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	MW9AI_12/07/17	QC108_14/07/17	----	----	----
Client sampling date / time					12-Jul-2017 00:00	14-Jul-2017 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EM1709192-027	EM1709192-028	-----	-----	-----	
				Result	Result	----	----	----	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	----	----	----	----	----
Iodomethane	74-88-4	1	µg/L	<1	----	----	----	----	----
Methylene chloride	75-09-2	4	µg/L	<4	----	----	----	----	----
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	----	----	----	----	----
1,1-Dichloroethane	75-34-3	1	µg/L	7	----	----	----	----	----
cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	----	----	----	----	----
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	----	----	----	----	----
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	----	----	----	----	----
Carbon Tetrachloride	56-23-5	1	µg/L	<1	----	----	----	----	----
1,2-Dichloroethane	107-06-2	1	µg/L	<1	----	----	----	----	----
Trichloroethene	79-01-6	1	µg/L	<1	----	----	----	----	----
Dibromomethane	74-95-3	1	µg/L	<1	----	----	----	----	----
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	----	----	----	----	----
1,3-Dichloropropane	142-28-9	1	µg/L	<1	----	----	----	----	----
Tetrachloroethene	127-18-4	1	µg/L	<1	----	----	----	----	----
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	----	----	----	----	----
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	----	----	----	----	----
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	----	----	----	----	----
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	----	----	----	----	----
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	----	----	----	----	----
Pentachloroethane	76-01-7	1	µg/L	<1	----	----	----	----	----
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	----	----	----	----	----
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	----	----	----	----	----
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	----	----	----	----	----
Bromobenzene	108-86-1	1	µg/L	<1	----	----	----	----	----
2-Chlorotoluene	95-49-8	1	µg/L	<1	----	----	----	----	----
4-Chlorotoluene	106-43-4	1	µg/L	<1	----	----	----	----	----
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	----	----	----	----	----
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	----	----	----	----	----
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	----	----	----	----	----
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	----	----	----	----	----
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	----	----	----	----	----
<b>EP074G: Trihalomethanes</b>									





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	MW9AI_12/07/17	QC108_14/07/17	----	----	----
Client sampling date / time					12-Jul-2017 00:00	14-Jul-2017 00:00	----	----	----
Compound	CAS Number	LOR	Unit	EM1709192-027	EM1709192-028	-----	-----	-----	
				Result	Result	----	----	----	
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	<1	----	----	----	----	----
Bromodichloromethane	75-27-4	1	µg/L	<1	----	----	----	----	----
Dibromochloromethane	124-48-1	1	µg/L	<1	----	----	----	----	----
Bromoform	75-25-2	1	µg/L	<1	----	----	----	----	----
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----	----
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	----	----	----	----	----
Acenaphthylene	208-96-8	1	µg/L	<1.0	----	----	----	----	----
Acenaphthene	83-32-9	1	µg/L	<1.0	----	----	----	----	----
Fluorene	86-73-7	1	µg/L	<1.0	----	----	----	----	----
Phenanthrene	85-01-8	1	µg/L	<1.0	----	----	----	----	----
Anthracene	120-12-7	1	µg/L	<1.0	----	----	----	----	----
Fluoranthene	206-44-0	1	µg/L	<1.0	----	----	----	----	----
Pyrene	129-00-0	1	µg/L	<1.0	----	----	----	----	----
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	----	----	----	----	----
Chrysene	218-01-9	1	µg/L	<1.0	----	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	----	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	----	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	----	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	----	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	----	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	----	----	----	----	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	20	<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----	----
C15 - C28 Fraction	----	100	µg/L	160	----	----	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	160	----	----	----	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	----	----	----	----



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	MW9AI_12/07/17	QC108_14/07/17	----	----	----
Client sampling date / time				12-Jul-2017 00:00	14-Jul-2017 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	EM1709192-027	EM1709192-028	-----	-----	-----	
				Result	Result	----	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	----	----	----	
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	----	----	
>C16 - C34 Fraction	----	100	µg/L	140	----	----	----	----	
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	140	----	----	----	----	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	----	----	----	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	----	----	----	
Toluene	108-88-3	2	µg/L	<2	<2	----	----	----	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	----	----	----	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	----	----	----	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	----	----	----	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	----	----	----	
^ Sum of BTEX	----	1	µg/L	<1	<1	----	----	----	
Naphthalene	91-20-3	5	µg/L	<5	<5	----	----	----	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	113	----	----	----	----	
Toluene-D8	2037-26-5	1	%	117	----	----	----	----	
4-Bromofluorobenzene	460-00-4	1	%	117	----	----	----	----	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	30.2	----	----	----	----	
2-Chlorophenol-D4	93951-73-6	1	%	82.4	----	----	----	----	
2,4,6-Tribromophenol	118-79-6	1	%	94.7	----	----	----	----	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	87.9	----	----	----	----	
Anthracene-d10	1719-06-8	1	%	93.0	----	----	----	----	
4-Terphenyl-d14	1718-51-0	1	%	95.1	----	----	----	----	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	111	101	----	----	----	
Toluene-D8	2037-26-5	2	%	119	98.6	----	----	----	
4-Bromofluorobenzene	460-00-4	2	%	119	97.5	----	----	----	



## Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	72	120
Toluene-D8	2037-26-5	70	130
4-Bromofluorobenzene	460-00-4	70	128
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	10	46
2-Chlorophenol-D4	93951-73-6	23	104
2,4,6-Tribromophenol	118-79-6	28	130
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129
<b>EP231S: PFAS Surrogate</b>			
13C4-PFOS	----	60	130

## QUALITY CONTROL REPORT

<b>Work Order</b>	: <b>EM1709192</b>	<b>Page</b>	: 1 of 47
<b>Amendment</b>	: <b>1</b>		
<b>Client</b>	: <b>AECOM Australia Pty Ltd</b>	<b>Laboratory</b>	: Environmental Division Melbourne
<b>Contact</b>	: MS AVERYLL COYNE	<b>Contact</b>	: Carol Walsh
<b>Address</b>	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	<b>Address</b>	: 4 Westall Rd Springvale VIC Australia 3171
<b>Telephone</b>	: +61 03 9653 1234	<b>Telephone</b>	: +61-3-8549 9608
<b>Project</b>	: 60537182	<b>Date Samples Received</b>	: 13-Jul-2017
<b>Order number</b>	: task 3.2	<b>Date Analysis Commenced</b>	: 14-Jul-2017
<b>C-O-C number</b>	: ----	<b>Issue Date</b>	: 04-Aug-2017
<b>Sampler</b>	: BH, BP, JM		
<b>Site</b>	: ----		
<b>Quote number</b>	: ME/199/16		
<b>No. of samples received</b>	: 27		
<b>No. of samples analysed</b>	: 27		



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Chris Lemaitre	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Herman Lin	Laboratory Manager	Melbourne Inorganics, Springvale, VIC
Nancy Wang	Senior Semivolatile Instrument Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC





## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :  
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot  
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
 LOR = Limit of reporting  
 RPD = Relative Percentage Difference  
 # = Indicates failed QC

## Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA005P: pH by PC Titrator (QC Lot: 1027402)</b>									
EM1710070-003	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.40	7.51	1.48	0% - 20%
EM1709371-011	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.30	7.34	0.546	0% - 20%
<b>EA005P: pH by PC Titrator (QC Lot: 999218)</b>									
EM1709188-004	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.60	7.63	0.394	0% - 20%
EM1709192-006	GW25_12/07/17	EA005-P: pH Value	----	0.01	pH Unit	7.37	7.38	0.136	0% - 20%
<b>EA005P: pH by PC Titrator (QC Lot: 999220)</b>									
EM1709192-019	MW1333_02_12/07/17	EA005-P: pH Value	----	0.01	pH Unit	7.48	7.54	0.799	0% - 20%
EM1709201-002	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.68	7.78	1.29	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 1027297)</b>									
EM1709192-022	GMW3_12/07/17	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	476	486	1.87	0% - 20%
EM1710018-002	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	580	585	0.858	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 996496)</b>									
EM1709188-003	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	5410	5720	5.57	0% - 20%
EM1709192-004	GW16_12/07/17	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	687	685	0.292	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 996497)</b>									
EM1709192-018	F3_12/07/17	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	222	214	3.89	0% - 20%
EM1709196-006	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	4980	4820	3.34	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 999164)</b>									
EM1709192-027	MW9AI_12/07/17	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	1510	1500	0.399	0% - 20%
EM1709220-007	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	14900	14700	1.19	0% - 20%
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 1027403)</b>									
EM1710018-005	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 1027403) - continued</b>									
EM1710018-005	Anonymous	ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	2	<1	81.3	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	2	<1	81.3	No Limit
EM1709371-011	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	610	579	5.31	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	610	579	5.31	0% - 20%
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 999215)</b>									
EM1709163-001	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	305	298	2.32	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	305	298	2.32	0% - 20%
EM1709188-004	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	654	657	0.485	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	654	657	0.485	0% - 20%
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 999219)</b>									
EM1709192-006	GW25_12/07/17	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	533	527	1.08	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	533	527	1.08	0% - 20%
EM1709192-019	MW1333_02_12/07/17	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	727	718	1.34	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	727	718	1.34	0% - 20%
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 1027436)</b>									
EM1710018-003	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	<1	0.00	No Limit
EM1709192-022	GMW3_12/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	12	12	0.00	0% - 50%
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 996588)</b>									
EM1709163-004	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1870	1870	0.00	0% - 20%
EM1709106-026	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	137	136	0.757	0% - 20%
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 996591)</b>									
EM1709192-010	GW19_12/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	42	38	10.3	0% - 20%
EM1709192-017	DAMW5_02_12/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	7	3	85.0	No Limit
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 999296)</b>									
EM1709227-004	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	1220	1260	3.53	0% - 20%
EM1709159-002	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	3020	3060	1.44	0% - 20%
<b>ED043: Total Oxidised Sulfur as SO4 2- (QC Lot: 1009657)</b>									
EM1709192-003	GW12_12/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	66	73	10.5	0% - 20%
EM1709371-019	Anonymous	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	1410	1550	9.64	0% - 20%



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>ED043: Total Oxidised Sulfur as SO4 2- (QC Lot: 1032270)</b>									
EM1709192-022	GMW3_12/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	23	22	8.47	0% - 20%
<b>ED043: Total Oxidised Sulfur as SO4 2- (QC Lot: 999497)</b>									
EM1709192-001	GW20_12/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	1030	1070	3.75	0% - 20%
EM1709192-012	GW24_12/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	15	13	13.4	0% - 50%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 1027435)</b>									
EM1709648-002	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	19	19	0.00	0% - 50%
EM1709192-022	GMW3_12/07/17	ED045G: Chloride	16887-00-6	1	mg/L	23	22	0.00	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 996587)</b>									
EM1709163-004	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	7230	7180	0.662	0% - 20%
EM1709106-026	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	500	502	0.397	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 996590)</b>									
EM1709192-010	GW19_12/07/17	ED045G: Chloride	16887-00-6	1	mg/L	8830	8620	2.51	0% - 20%
EM1709192-017	DAMW5_02_12/07/17	ED045G: Chloride	16887-00-6	1	mg/L	14	14	0.00	0% - 50%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 999297)</b>									
EM1709227-004	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	7350	6920	6.12	0% - 20%
EM1709159-002	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	639	631	1.34	0% - 20%
<b>ED093F: Dissolved Major Cations (QC Lot: 1028386)</b>									
EM1709371-011	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	160	163	1.74	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	73	75	2.48	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	146	150	2.51	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	22	22	0.00	0% - 20%
EM1710085-004	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	1560	1610	3.07	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	902	931	3.18	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	4880	5010	2.56	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	71	73	2.19	0% - 50%
<b>ED093F: Dissolved Major Cations (QC Lot: 996717)</b>									
EM1709186-001	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	1240	1250	0.493	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	181	180	0.854	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	6650	6670	0.394	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	537	530	1.20	0% - 20%
EM1709188-007	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	109	106	3.38	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	168	162	3.74	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	1330	1290	3.16	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	20	18	14.3	0% - 20%
<b>ED093F: Dissolved Major Cations (QC Lot: 996718)</b>									
EM1709192-013	GW17_12/07/17	ED093F: Calcium	7440-70-2	1	mg/L	126	129	2.39	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	31	32	0.00	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	146	148	1.91	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	14	14	0.00	0% - 50%



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>ED093F: Dissolved Major Cations (QC Lot: 996718) - continued</b>									
EM1709201-002	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	13	13	0.00	0% - 50%
		ED093F: Magnesium	7439-95-4	1	mg/L	20	20	0.00	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	166	166	0.00	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	5	5	0.00	No Limit
<b>ED093F: Dissolved Major Cations (QC Lot: 999474)</b>									
EM1709292-002	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	6	6	0.00	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	6	6	0.00	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	9	9	0.00	No Limit
		ED093F: Potassium	7440-09-7	1	mg/L	1	1	0.00	No Limit
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 1028385)</b>									
EM1710085-003	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	5.71	5.77	1.01	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.015	0.016	9.25	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	2.19	2.20	0.00	0% - 20%
EM1709192-022	GMW3_12/07/17	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.045	0.045	0.00	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.004	0.004	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.112	0.113	1.34	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.023	0.023	0.00	0% - 20%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.011	0.010	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.03	0.03	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	6.97	7.01	0.534	0% - 20%
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 996715)</b>									
EM1709106-026	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.033	0.032	3.13	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.007	0.007	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.554	0.544	1.85	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.012	0.012	0.00	0% - 50%





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 996715) - continued</b>									
EM1709106-026	Anonymous	EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.008	0.008	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.41	0.37	10.4	0% - 20%
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	2.10	2.09	0.783	0% - 20%
EM1709192-010	GW19_12/07/17	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.004	0.005	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.417	0.430	3.07	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.001	0.002	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.01	<0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-F: Iron	7439-89-6	0.05	mg/L	12.9	13.2	2.22	0% - 20%		
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 999473)</b>									
EM1709237-010	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.002	0.003	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.04	0.03	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.05	0.00	No Limit		
EM1709192-027	MW9AI_12/07/17	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.023	0.024	0.00	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.040	0.042	6.49	0% - 20%
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.023	0.024	0.00	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.016	0.016	0.00	0% - 50%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.009	0.007	18.8	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	1.81	1.89	4.31	0% - 20%
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-F: Iron	7439-89-6	0.05	mg/L	3.02	3.08	1.81	0% - 20%		
<b>EG020T: Total Metals by ICP-MS (QC Lot: 1027626)</b>									
EM1709192-022	GMW3_12/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020T: Total Metals by ICP-MS (QC Lot: 1027626) - continued</b>									
EM1709192-022	GMW3_12/07/17	EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.122	0.121	0.00	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.010	0.010	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.012	0.011	0.00	0% - 50%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.006	0.006	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.130	0.130	0.00	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.028	0.028	0.00	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.032	0.032	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	1.05	1.02	2.82	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	15.8	15.7	0.489	0% - 20%
EM1709981-003	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.005	0.005	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.093	0.095	2.23	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.004	0.005	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.02	0.03	35.5	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-T: Iron	7439-89-6	0.05	mg/L	0.08	0.08	0.00	No Limit		
<b>EG020T: Total Metals by ICP-MS (QC Lot: 996726)</b>									
EM1709192-001	GW20_12/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.010	0.010	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.010	0.009	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.008	0.007	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.009	0.009	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.243	0.248	2.12	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.015	0.015	0.00	0% - 50%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.045	0.034	26.5	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	2.89	2.86	1.15	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-T: Iron	7439-89-6	0.05	mg/L	12.8	13.2	3.14	0% - 20%		
EM1709192-011	GW35_12/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0002	0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.010	0.011	0.00	0% - 50%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.003	0.003	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.003	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	3.52	3.51	0.289	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.104	0.103	0.00	0% - 20%



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EG020T: Total Metals by ICP-MS (QC Lot: 996726) - continued</b>										
EM1709192-011	GW35_12/07/17	EG020A-T: Zinc	7440-66-6	0.005	mg/L	1.17	1.15	1.77	0% - 20%	
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	8.85	8.88	0.271	0% - 20%	
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	0.01	0.01	0.00	No Limit	
		EG020A-T: Iron	7439-89-6	0.05	mg/L	48.0	48.1	0.217	0% - 20%	
<b>EG020T: Total Metals by ICP-MS (QC Lot: 996727)</b>										
EM1709192-024	QC104_12/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit	
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit	
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit	
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit	
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit	
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit	
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit	
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit	
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.00	No Limit	
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit	
EM1709210-001	Anonymous	EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit	
		EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0001	<0.0001	0.00	No Limit	
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.006	0.006	0.00	No Limit	
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.003	0.003	0.00	No Limit	
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.003	0.003	0.00	No Limit	
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.002	0.002	0.00	No Limit	
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.360	0.356	1.04	0% - 20%	
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.010	0.011	0.00	0% - 50%	
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.136	0.134	1.56	0% - 20%	
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.88	0.93	6.11	0% - 20%	
<b>EG020T: Total Metals by ICP-MS (QC Lot: 999480)</b>	EM1709192-027	MW9AI_12/07/17	EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
			EG020A-T: Iron	7439-89-6	0.05	mg/L	1.41	1.66	16.1	0% - 20%
			EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
			EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.044	0.046	2.89	0% - 20%
			EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.106	0.107	1.02	0% - 20%
			EG020A-T: Copper	7440-50-8	0.001	mg/L	0.008	0.010	13.8	No Limit
			EG020A-T: Lead	7439-92-1	0.001	mg/L	0.008	0.009	0.00	No Limit
			EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.042	0.044	3.83	0% - 20%
			EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.039	0.044	11.3	0% - 20%
			EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.038	0.038	0.00	No Limit
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 1028384)</b>	EM1709192-027	MW9AI_12/07/17	EG020A-T: Aluminium	7429-90-5	0.01	mg/L	12.0	11.9	0.904	0% - 20%
			EG020A-T: Selenium	7782-49-2	0.01	mg/L	0.01	<0.01	0.00	No Limit
			EG020A-T: Iron	7439-89-6	0.05	mg/L	13.2	13.4	1.72	0% - 20%

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 Work Order : EM1709192 Amendment 1  
 Client : AECOM Australia Pty Ltd  
 Project : 60537182



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 1028384) - continued</b>									
EM1709192-022	GMW3_12/07/17	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1710085-004	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 996716)</b>									
EM1709106-026	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709192-010	GW19_12/07/17	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 999472)</b>									
EM1709288-003	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709192-027	MW9AI_12/07/17	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1002551)</b>									
EM1709192-001	GW20_12/07/17	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709192-011	GW35_12/07/17	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1002552)</b>									
EM1709192-024	QC104_12/07/17	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1027923)</b>									
EM1709192-022	GMW3_12/07/17	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1710066-005	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EK040P: Fluoride by PC Titrator (QC Lot: 1027404)</b>									
EM1709371-011	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.3	0.3	0.00	No Limit
<b>EK040P: Fluoride by PC Titrator (QC Lot: 999216)</b>									
EM1709192-006	GW25_12/07/17	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.4	0.4	0.00	No Limit
EM1709192-019	MW1333_02_12/07/17	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.4	0.5	0.00	No Limit
<b>EK055G: Ammonia as N by Discrete Analyser (QC Lot: 1030195)</b>									
EM1709192-022	GMW3_12/07/17	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	13.2	12.9	2.27	0% - 20%
EM1710025-034	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.90	0.82	9.57	0% - 20%
<b>EK055G: Ammonia as N by Discrete Analyser (QC Lot: 999271)</b>									
EM1709192-001	GW20_12/07/17	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	4.29	4.44	3.46	0% - 20%
EM1709192-012	GW24_12/07/17	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	10.4	10.2	1.50	0% - 20%
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 1027437)</b>									
EM1710018-003	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EM1709192-022	GMW3_12/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.01	<0.01	0.00	No Limit
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 996589)</b>									
EM1709168-009	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.01	0.00	No Limit
EM1709192-003	GW12_12/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.02	0.02	0.00	No Limit
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 996592)</b>									
EM1709196-015	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EM1709192-017	DAMW5_02_12/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 999299)</b>									
EM1709192-027	MW9AI_12/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit





Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 1030194)</b>										
EM1709192-022	GMW3_12/07/17	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.04	0.04	0.00	No Limit	
EM1710025-034	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 999270)</b>										
EM1709137-006	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.02	0.00	No Limit	
EM1709192-011	GW35_12/07/17	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.04	0.04	0.00	No Limit	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 1027438)</b>										
EM1709192-022	GMW3_12/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.15	0.14	0.00	0% - 50%	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 996585)</b>										
EM1709192-010	GW19_12/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit	
EM1709106-026	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.05	0.04	35.3	No Limit	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 999300)</b>										
EM1709192-027	MW9AI_12/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.06	0.06	0.00	No Limit	
<b>EP005: Total Organic Carbon (TOC) (QC Lot: 1000200)</b>										
EM1709106-022	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	64	68	5.90	0% - 20%	
EM1709192-006	GW25_12/07/17	EP005: Total Organic Carbon	----	1	mg/L	11	11	0.00	0% - 50%	
<b>EP005: Total Organic Carbon (TOC) (QC Lot: 1000201)</b>										
EM1709192-020	MW1371_02_12/07/17	EP005: Total Organic Carbon	----	1	mg/L	33	32	0.00	0% - 20%	
<b>EP005: Total Organic Carbon (TOC) (QC Lot: 1033529)</b>										
EM1709192-022	GMW3_12/07/17	EP005: Total Organic Carbon	----	1	mg/L	48	44	7.55	0% - 20%	
EM1710240-002	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	32	38	16.4	0% - 20%	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 1026376)</b>										
EM1709192-022	GMW3_12/07/17	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit			
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 996236)</b>										
EM1709192-001	GW20_12/07/17	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 996236) - continued</b>									
EM1709192-001	GW20_12/07/17	EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit
		EM1709192-012	GW24_12/07/17	EP074-WF: Benzene	71-43-2	1	µg/L	52	48
EP074-WF: Toluene	108-88-3			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: Ethylbenzene	100-41-4			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: meta- & para-Xylene	108-38-3 106-42-3			1	µg/L	2	2	0.00	No Limit
EP074-WF: Styrene	100-42-5			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: ortho-Xylene	95-47-6			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: Isopropylbenzene	98-82-8			1	µg/L	3	3	0.00	No Limit
EP074-WF: n-Propylbenzene	103-65-1			1	µg/L	1	1	0.00	No Limit
EP074-WF: 1.3.5-Trimethylbenzene	108-67-8			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: sec-Butylbenzene	135-98-8			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 1.2.4-Trimethylbenzene	95-63-6			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: tert-Butylbenzene	98-06-6			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: p-Isopropyltoluene	99-87-6			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: n-Butylbenzene	104-51-8			1	µg/L	<1	<1	0.00	No Limit
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 999456)</b>									
EM1709256-007	Anonymous	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 999456) - continued</b>										
EM1709256-007	Anonymous	EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit	
EM1709242-001	Anonymous	EP074-WF: Benzene	71-43-2	1	µg/L	2	1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	2	2	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit	
<b>EP074B: Oxygenated Compounds (QC Lot: 1026376)</b>										
EM1709192-022	GMW3_12/07/17	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit	
<b>EP074B: Oxygenated Compounds (QC Lot: 996236)</b>										
EM1709192-001	GW20_12/07/17	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit	
EM1709192-012	GW24_12/07/17	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	40	40	0.00	No Limit	
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit	
<b>EP074B: Oxygenated Compounds (QC Lot: 999456)</b>										
EM1709256-007	Anonymous	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit	



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074B: Oxygenated Compounds (QC Lot: 999456) - continued</b>									
EM1709256-007	Anonymous	EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit
EM1709242-001	Anonymous	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<20	<10	66.7	No Limit
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 1026376)</b>									
EM1709192-022	GMW3_12/07/17	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 996236)</b>									
EM1709192-001	GW20_12/07/17	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
EM1709192-012	GW24_12/07/17	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 999456)</b>									
EM1709256-007	Anonymous	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
EM1709242-001	Anonymous	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
<b>EP074D: Fumigants (QC Lot: 1026376)</b>									
EM1709192-022	GMW3_12/07/17	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
<b>EP074D: Fumigants (QC Lot: 996236)</b>									
EM1709192-001	GW20_12/07/17	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
EM1709192-012	GW24_12/07/17	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
<b>EP074D: Fumigants (QC Lot: 999456)</b>									
EM1709256-007	Anonymous	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074D: Fumigants (QC Lot: 999456) - continued</b>									
EM1709242-001	Anonymous	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 1026376)</b>									
EM1709192-022	GMW3_12/07/17	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit		
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 996236)</b>									
EM1709192-001	GW20_12/07/17	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 996236) - continued</b>									
EM1709192-001	GW20_12/07/17	EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit
EM1709192-012	GW24_12/07/17	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 996236) - continued</b>									
EM1709192-012	GW24_12/07/17	EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 999456)</b>									
EM1709256-007	Anonymous	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP074-WF: 1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 999456) - continued</b>									
EM1709256-007	Anonymous	EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	<2	0.00	No Limit
EM1709242-001	Anonymous	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	1	1	0.00	No Limit
		EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	35	36	2.91	0% - 20%
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	4	4	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	1	1	0.00	No Limit
		EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit		
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit		
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit		
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit		
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	<2	0.00	No Limit		
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 1026376)</b>									
EM1709192-022	GMW3_12/07/17	EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 1026376) - continued</b>									
EM1709192-022	GMW3_12/07/17	EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 996236)</b>									
EM1709192-001	GW20_12/07/17	EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
EM1709192-012	GW24_12/07/17	EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
EM1709256-007	Anonymous	EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
EM1709242-001	Anonymous	EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	0.8	0.9	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	48	45	4.70	0% - 20%
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 999456) - continued</b>									
EM1709242-001	Anonymous	EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 1026376)</b>									
EM1709192-022	GMW3_12/07/17	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 996236)</b>									
EM1709192-001	GW20_12/07/17	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
EM1709192-012	GW24_12/07/17	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 999456)</b>									
EM1709256-007	Anonymous	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
EM1709242-001	Anonymous	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
<b>EP074H: Naphthalene (QC Lot: 1026376)</b>									
EM1709192-022	GMW3_12/07/17	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP074H: Naphthalene (QC Lot: 996236)</b>									
EM1709192-001	GW20_12/07/17	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EM1709192-012	GW24_12/07/17	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP074H: Naphthalene (QC Lot: 999456)</b>									
EM1709256-007	Anonymous	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EM1709242-001	Anonymous	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1001673)</b>									
EM1709192-028	QC108_14/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1709309-034	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1026375)</b>									
EM1710018-028	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1709192-022	GMW3_12/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 996235)</b>									
EM1709192-001	GW20_12/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1709192-012	GW24_12/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	60	60	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 996272)</b>									
EM1709148-020	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1709192-023	QC_103_12/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 996508)</b>									
EM1709210-005	Anonymous	EP071: C15 - C28 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	µg/L	<50	<50	0.00	No Limit
		EP071: C29 - C36 Fraction	----	50	µg/L	<50	<50	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 999455)</b>									
EM1709256-007	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1709242-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	110	120	9.01	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1001673)</b>									
EM1709192-028	QC108_14/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM1709309-034	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1026375)</b>									
EM1710018-028	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM1709192-022	GMW3_12/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 996235)</b>									
EM1709192-001	GW20_12/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM1709192-012	GW24_12/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	70	70	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 996272)</b>									
EM1709148-020	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM1709192-023	QC_103_12/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 996508)</b>									
EM1709210-005	Anonymous	EP071: >C10 - C16 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: >C16 - C34 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 999455)</b>									
EM1709256-007	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM1709242-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	110	120	0.00	No Limit
<b>EP080: BTEXN (QC Lot: 1001673)</b>									
EM1709192-028	QC108_14/07/17	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP080: BTEXN (QC Lot: 1001673) - continued</b>									
EM1709192-028	QC108_14/07/17	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EM1709309-034	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP080: BTEXN (QC Lot: 1026375)</b>									
EM1710018-028	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EM1709192-022	GMW3_12/07/17	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP080: BTEXN (QC Lot: 996235)</b>									
EM1709192-001	GW20_12/07/17	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EM1709192-012	GW24_12/07/17	EP080: Benzene	71-43-2	1	µg/L	51	48	6.78	0% - 20%
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	2	2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP080: BTEXN (QC Lot: 996272)</b>									
EM1709148-020	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EP080: BTEXN (QC Lot: 996272) - continued</b>										
EM1709148-020	Anonymous	EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
EM1709192-023	QC_103_12/07/17	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
<b>EP080: BTEXN (QC Lot: 999455)</b>										
EM1709256-007	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
EM1709242-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	1	1	0.00	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	2	<2	0.00	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 999277)</b>										
EM1709192-002	GW21_12/07/17	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.28	0.26	4.07	0% - 20%	
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.02	0.02	0.00	No Limit	
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.11	0.10	11.3	No Limit	
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
ES1717348-001	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.58	0.61	4.51	0% - 20%	
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.08	0.07	0.00	No Limit	
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.05	0.05	0.00	No Limit	
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.25	0.25	0.00	0% - 50%	
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit	



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 999277) - continued</b>									
ES1717348-001	Anonymous	EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 999277)</b>									
EM1709192-002	GW21_12/07/17	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.05	0.04	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.08	0.08	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.05	0.05	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.04	0.03	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
ES1717348-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.05	0.05	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.11	0.11	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
<b>EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 999277)</b>									
EM1709192-002	GW21_12/07/17	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
ES1717348-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 999277) - continued</b>									
ES1717348-001	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 999277)</b>									
EM1709192-002	GW21_12/07/17	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
ES1717348-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231P: PFAS Sums (QC Lot: 999277)</b>									
EM1709192-002	GW21_12/07/17	EP231X: Sum of PFAS	----	0.01	µg/L	0.63	0.58	8.26	0% - 20%
ES1717348-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	1.14	1.16	1.74	0% - 20%



### Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 1027297)</b>									
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	99.1	95	105	
				<10	293 mg/L	99.0	95	105	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 996496)</b>									
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	99.4	95	105	
				<10	293 mg/L	100	95	105	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 996497)</b>									
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	100	95	105	
				<10	293 mg/L	103	95	105	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 999164)</b>									
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	100	95	105	
				<10	293 mg/L	99.6	95	105	
<b>ED037P: Alkalinity by PC Titrator (QCLot: 1027403)</b>									
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	94.9	88	109	
<b>ED037P: Alkalinity by PC Titrator (QCLot: 999215)</b>									
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	95.6	88	109	
<b>ED037P: Alkalinity by PC Titrator (QCLot: 999219)</b>									
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	95.4	88	109	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 1027436)</b>									
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	110	92	115	
				<1	100 mg/L	105	92	115	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 996588)</b>									
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	111	92	115	
				<1	100 mg/L	103	92	115	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 996591)</b>									
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	112	92	115	
				<1	100 mg/L	104	92	115	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 999296)</b>									
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	107	92	115	
				<1	100 mg/L	104	92	115	
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 1009657)</b>									
ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	<1	500 mg/L	107	82	122	
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 1032270)</b>									
ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	<1	500 mg/L	97.4	82	122	





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 999497)</b>									
ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	<1	500 mg/L	105	82	122	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 1027435)</b>									
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	105	88	118	
				<1	1000 mg/L	107	88	118	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 996587)</b>									
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	113	88	118	
				<1	1000 mg/L	103	88	118	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 996590)</b>									
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	105	88	118	
				<1	1000 mg/L	103	88	118	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 999297)</b>									
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	106	88	118	
				<1	1000 mg/L	106	88	118	
<b>ED093F: Dissolved Major Cations (QCLot: 1028386)</b>									
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	101	93	110	
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	101	91	110	
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	101	90	109	
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	103	89	109	
<b>ED093F: Dissolved Major Cations (QCLot: 996717)</b>									
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	103	93	110	
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	103	91	110	
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	107	90	109	
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	106	89	109	
<b>ED093F: Dissolved Major Cations (QCLot: 996718)</b>									
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	104	93	110	
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	103	91	110	
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	109	90	109	
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	108	89	109	
<b>ED093F: Dissolved Major Cations (QCLot: 999474)</b>									
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	106	93	110	
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	107	91	110	
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	102	90	109	
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	102	89	109	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 1028385)</b>									
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	99.3	93	105	
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	99.4	91	107	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	102	84	104	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	95.2	83	103	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 1028385) - continued</b>									
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.0	82	103	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	99.0	83	105	
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	96.8	83	105	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	98.9	82	106	
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	96.9	82	109	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	102	85	109	
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	100	94	106	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 996715)</b>									
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	98.0	93	105	
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	96.3	91	107	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	92.9	84	104	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	90.8	83	103	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	93.3	82	103	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	92.2	83	105	
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	91.8	83	105	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	93.9	82	106	
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	91.8	82	109	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	97.1	85	109	
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	99.5	94	106	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 999473)</b>									
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	103	93	105	
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	99.5	91	107	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	87.0	84	104	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	86.0	83	103	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	88.9	82	103	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	88.4	83	105	
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	88.4	83	105	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	85.2	82	106	
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	92.9	82	109	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	94.2	85	109	
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	100.0	94	106	
<b>EG020T: Total Metals by ICP-MS (QCLot: 1027626)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	107	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	106	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	105	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	96.7	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.4	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	103	88	109	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EG020T: Total Metals by ICP-MS (QCLot: 1027626) - continued</b>									
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	102	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	98.3	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	111	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	101	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	107	80	120	
<b>EG020T: Total Metals by ICP-MS (QCLot: 996726)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	103	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	99.4	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	91.6	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	95.5	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.8	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	99.6	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	98.6	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	96.6	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	92.6	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	93.4	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	98.6	80	120	
<b>EG020T: Total Metals by ICP-MS (QCLot: 996727)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	103	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	97.9	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	95.8	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	97.0	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	94.6	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	98.9	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	101	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.0	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	89.6	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	100	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	103	80	120	
<b>EG020T: Total Metals by ICP-MS (QCLot: 999480)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	107	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	91.9	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	95.8	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	91.1	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	89.9	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	90.3	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	93.4	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	90.3	87	111	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
					LCS	Low	High		
<b>EG020T: Total Metals by ICP-MS (QCLot: 999480) - continued</b>									
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	94.3	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	89.8	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	95.9	80	120	
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 1028384)</b>									
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	87.8	81	114	
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 996716)</b>									
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	94.4	81	114	
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 999472)</b>									
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	89.7	81	114	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1002551)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	84.4	81	114	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1002552)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	88.6	81	114	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1027923)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	91.0	81	114	
<b>EK040P: Fluoride by PC Titrator (QCLot: 1027404)</b>									
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	101	85	112	
<b>EK040P: Fluoride by PC Titrator (QCLot: 999216)</b>									
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	92.4	85	112	
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 1030195)</b>									
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	102	80	115	
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 999271)</b>									
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	108	80	115	
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 1027437)</b>									
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	106	94	107	
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 996589)</b>									
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	97.4	94	107	
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 996592)</b>									
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	99.6	94	107	
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 999299)</b>									
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	102	94	107	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 1030194)</b>									
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	107	89	114	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 999270)</b>									
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	110	89	114	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 1027438)</b>									





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 1027438) - continued</b>									
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	102	94	108	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 996585)</b>									
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	104	94	108	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 999300)</b>									
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	107	94	108	
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1000200)</b>									
EP005: Total Organic Carbon	----	1	mg/L	<1	100 mg/L	94.0	81	109	
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1000201)</b>									
EP005: Total Organic Carbon	----	1	mg/L	<1	100 mg/L	93.6	81	109	
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1033529)</b>									
EP005: Total Organic Carbon	----	1	mg/L	<1	100 mg/L	101	81	109	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1026376)</b>									
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	87.5	81	119	
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	91.2	84	117	
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	90.4	83	114	
EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	40 µg/L	88.0	81	116	
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	91.2	82	118	
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	91.4	85	115	
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	90.5	81	113	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	92.3	76	111	
EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	94.2	79	109	
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	93.6	77	111	
EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	93.1	79	108	
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	94.1	80	110	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	91.3	75	111	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	87.8	68	111	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 996236)</b>									
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	96.6	81	119	
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	102	84	117	
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	101	83	114	
EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	40 µg/L	101	81	116	
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	100	82	118	
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	101	85	115	
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	99.4	81	113	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	98.8	76	111	
EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	97.3	79	109	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 996236) - continued</b>									
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	95.9	77	111	
EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	96.6	79	108	
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	97.6	80	110	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	97.5	75	111	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	95.5	68	111	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 999456)</b>									
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	108	81	119	
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	103	84	117	
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	102	83	114	
EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	40 µg/L	104	81	116	
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	105	82	118	
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	104	85	115	
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	102	81	113	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	99.3	76	111	
EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	101	79	109	
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	99.9	77	111	
EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	99.2	79	108	
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	101	80	110	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	101	75	111	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	103	68	111	
<b>EP074B: Oxygenated Compounds (QCLot: 1026376)</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	69.6	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	85.0	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	78.4	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	86.9	73	128	
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	83.9	75	129	
<b>EP074B: Oxygenated Compounds (QCLot: 996236)</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	104	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	97.8	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	101	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	102	73	128	
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	109	75	129	
<b>EP074B: Oxygenated Compounds (QCLot: 999456)</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	120	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	100	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	91.1	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	100	73	128	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074B: Oxygenated Compounds (QCLot: 999456) - continued</b>									
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	99.5	75	129	
<b>EP074C: Sulfonated Compounds (QCLot: 1026376)</b>									
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	76.0	64	119	
<b>EP074C: Sulfonated Compounds (QCLot: 996236)</b>									
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	94.0	64	119	
<b>EP074C: Sulfonated Compounds (QCLot: 999456)</b>									
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	102	64	119	
<b>EP074D: Fumigants (QCLot: 1026376)</b>									
EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	88.0	74	117	
EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	92.3	83	118	
EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	87.6	74	109	
EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	86.1	70	109	
EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	88.1	81	116	
<b>EP074D: Fumigants (QCLot: 996236)</b>									
EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	96.7	74	117	
EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	96.4	83	118	
EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	94.7	74	109	
EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	95.0	70	109	
EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	101	81	116	
<b>EP074D: Fumigants (QCLot: 999456)</b>									
EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	95.6	74	117	
EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	102	83	118	
EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	94.6	74	109	
EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	92.1	70	109	
EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	93.1	81	116	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1026376)</b>									
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	62.4	61	137	
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	66.3	66	137	
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	76.7	67	135	
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	68.4	52	128	
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	79.8	76	125	
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	77.8	74	123	
EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	77.4	75	120	
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	63.9	37	120	
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	20 µg/L	94.6	72	159	
EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	81.8	78	117	
EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	89.4	81	118	
EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	90.2	83	118	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1026376) - continued</b>									
EP074-WF: 1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	88.5	76	115	
EP074-WF: 1.1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	81.6	75	117	
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	83.9	72	111	
EP074-WF: 1.2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	89.8	81	120	
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	80.4	78	116	
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	91.0	79	116	
EP074-WF: 1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	91.8	85	119	
EP074-WF: 1.3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	93.3	85	119	
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	86.4	76	120	
EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	90.8	78	110	
EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	83.1	64	118	
EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	79.8	51	113	
EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	89.3	85	121	
EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	89.6	84	118	
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	91.8	64	109	
EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	87.8	65	115	
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	92.2	70	121	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 996236)</b>									
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	96.4	61	137	
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	97.1	66	137	
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	94.4	67	135	
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	79.8	52	128	
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	90.6	76	125	
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	96.5	74	123	
EP074-WF: 1.1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	98.7	75	120	
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	44.9	37	120	
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	20 µg/L	111	72	159	
EP074-WF: trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	98.2	78	117	
EP074-WF: 1.1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	100	81	118	
EP074-WF: cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	99.6	83	118	
EP074-WF: 1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	96.2	76	115	
EP074-WF: 1.1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	95.2	75	117	
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	91.5	72	111	
EP074-WF: 1.2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	101	81	120	
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	87.9	78	116	
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	101	79	116	
EP074-WF: 1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	101	85	119	
EP074-WF: 1.3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	102	85	119	
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	102	76	120	





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 996236) - continued</b>									
EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	96.0	78	110	
EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	106	64	118	
EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	97.6	51	113	
EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	103	85	121	
EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	104	84	118	
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	87.4	64	109	
EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	95.8	65	115	
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	91.6	70	121	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 999456)</b>									
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	134	61	137	
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	121	66	137	
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	114	67	135	
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	108	52	128	
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	108	76	125	
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	115	74	123	
EP074-WF: 1.1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	110	75	120	
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	99.6	37	120	
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	20 µg/L	128	72	159	
EP074-WF: trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	108	78	117	
EP074-WF: 1.1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	108	81	118	
EP074-WF: cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	94.0	83	118	
EP074-WF: 1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	106	76	115	
EP074-WF: 1.1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	91.1	75	117	
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	101	72	111	
EP074-WF: 1.2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	107	81	120	
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	106	78	116	
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	101	79	116	
EP074-WF: 1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	100.0	85	119	
EP074-WF: 1.3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	95.7	85	119	
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	103	76	120	
EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	92.8	78	110	
EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	88.4	64	118	
EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	83.8	51	113	
EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	99.7	85	121	
EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	96.3	84	118	
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	91.3	64	109	
EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	86.7	65	115	
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	110	70	121	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 1026376)</b>									



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 1026376) - continued</b>									
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	90.8	85	115	
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	85.2	82	116	
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	94.5	81	112	
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	94.0	80	110	
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	92.7	80	110	
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	92.6	80	112	
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	93.1	84	111	
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	89.7	70	114	
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	91.6	78	116	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 996236)</b>									
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	102	85	115	
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	103	82	116	
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	98.6	81	112	
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	99.0	80	110	
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	97.0	80	110	
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	98.2	80	112	
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	99.6	84	111	
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	93.9	70	114	
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	95.7	78	116	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 999456)</b>									
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	101	85	115	
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	98.6	82	116	
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	98.7	81	112	
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	99.4	80	110	
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	103	80	110	
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	107	80	112	
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	103	84	111	
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	108	70	114	
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	105	78	116	
<b>EP074G: Trihalomethanes (QCLot: 1026376)</b>									
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	92.6	82	118	
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	90.6	75	112	
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	87.4	73	108	
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	84.1	68	107	
<b>EP074G: Trihalomethanes (QCLot: 996236)</b>									
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	100.0	82	118	
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	93.9	75	112	
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	91.5	73	108	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP074G: Trihalomethanes (QCLot: 996236) - continued</b>									
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	90.6	68	107	
<b>EP074G: Trihalomethanes (QCLot: 999456)</b>									
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	98.1	82	118	
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	97.6	75	112	
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	89.2	73	108	
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	94.8	68	107	
<b>EP074H: Naphthalene (QCLot: 1026376)</b>									
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	92.4	80	116	
<b>EP074H: Naphthalene (QCLot: 996236)</b>									
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	98.6	80	116	
<b>EP074H: Naphthalene (QCLot: 999456)</b>									
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	98.9	80	116	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1026163)</b>									
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	60.1	39	110	
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	65.2	40	124	
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	69.1	47	117	
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	69.9	51	118	
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	72.8	53	119	
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	66.7	51	113	
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	74.0	59	123	
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	73.3	58	123	
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	65.4	52	126	
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	70.9	55	123	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	70.7	52	131	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	70.3	57	126	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	65.2	56	126	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	71.6	53	123	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	70.4	53	125	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	73.6	53	125	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 996505)</b>									
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	69.1	39	110	
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	71.3	40	124	
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	68.7	47	117	
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	69.0	51	118	
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	69.0	53	119	
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	53.4	51	113	
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	70.7	59	123	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 996505) - continued</b>									
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	71.2	58	123	
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	68.2	52	126	
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	73.5	55	123	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	65.8	52	131	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	73.1	57	126	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	64.7	56	126	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	66.6	53	123	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	66.0	53	125	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	68.0	53	125	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 999335)</b>									
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	62.2	39	110	
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	66.2	40	124	
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	72.1	47	117	
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	75.1	51	118	
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	79.2	53	119	
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	51.2	51	113	
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	81.7	59	123	
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	80.7	58	123	
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	75.9	52	126	
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	82.0	55	123	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	79.7	52	131	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	81.1	57	126	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	71.9	56	126	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	76.6	53	123	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	75.0	53	125	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	78.6	53	125	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1001673)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	90.8	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1026164)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	102	53	123	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	109	57	133	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	102	55	141	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1026375)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	89.7	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996235)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	98.4	67	127	





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996272)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	106	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996504)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	98.3	53	123	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	99.8	57	133	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	94.3	55	141	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996508)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	87.8	53	123	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	86.0	57	133	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	77.2	55	141	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 999334)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	86.4	53	123	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	89.3	57	133	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	81.7	55	141	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 999455)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	101	67	127	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1001673)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	86.4	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1026164)</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	101	54	122	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	103	56	132	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	111	51	137	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1026375)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	89.9	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996235)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	98.2	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996272)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	106	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996504)</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	97.0	54	122	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	94.4	56	132	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	103	51	137	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996508)</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	67.6	54	122	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	80.9	56	132	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	83.5	51	137	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 999334)</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	86.4	54	122	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 999334) - continued</b>									
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	84.3	56	132	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	86.3	51	137	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 999455)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	97.8	65	125	
<b>EP080: BTEXN (QCLot: 1001673)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	101	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	102	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	96.1	72	124	
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	40 µg/L	95.4	72	130	
	106-42-3								
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	98.9	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	99.0	71	129	
<b>EP080: BTEXN (QCLot: 1026375)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	91.0	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	94.1	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	91.8	72	124	
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	40 µg/L	92.8	72	130	
	106-42-3								
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	94.5	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	98.4	71	129	
<b>EP080: BTEXN (QCLot: 996235)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	103	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	103	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	99.6	72	124	
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	40 µg/L	99.6	72	130	
	106-42-3								
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	101	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	100	71	129	
<b>EP080: BTEXN (QCLot: 996272)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	106	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	109	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	108	72	124	
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	40 µg/L	108	72	130	
	106-42-3								
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	109	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	113	71	129	
<b>EP080: BTEXN (QCLot: 999455)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	105	76	120	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP080: BTEXN (QCLot: 999455) - continued</b>									
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	106	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	104	72	124	
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	107	72	130	
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	108	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	109	71	129	
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 999277)</b>									
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.5 µg/L	86.4	70	130	
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.5 µg/L	92.2	70	130	
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.5 µg/L	85.0	70	130	
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.5 µg/L	79.0	70	130	
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.5 µg/L	103	70	130	
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	108	70	130	
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 999277)</b>									
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	2.5 µg/L	100	70	130	
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	85.0	70	130	
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	84.2	70	130	
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	93.0	70	130	
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	97.0	70	130	
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	109	70	130	
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	106	70	130	
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	119	70	130	
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	116	70	130	
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	72.0	70	130	
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	99.2	70	150	
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 999277)</b>									
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	101	70	130	
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	114	70	150	
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	117	70	150	
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	1.25 µg/L	116	70	150	
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	101	70	150	
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	109	70	130	
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	125	70	130	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 999277)</b>									
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.5 µg/L	78.8	70	130	



Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 999277) - continued</b>									
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.5 µg/L	104	70	130	
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.5 µg/L	119	70	130	
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.5 µg/L	128	70	130	

### Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report				
				Spike Concentration	Spike Recovery(%)		Recovery Limits (%)	
					MS	Low	High	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 1027436)</b>								
EM1709371-011	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70	130	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 996588)</b>								
EM1709162-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	73.6	70	130	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 996591)</b>								
EM1709192-009	GW27_12/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	95.8	70	130	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 999296)</b>								
EM1709159-005	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	72.3	70	130	
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 1009657)</b>								
EM1709192-009	GW27_12/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	500 mg/L	129	70	130	
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 1032270)</b>								
EM1709371-011	Anonymous	ED043: Total Oxidised Sulfur as SO4 2-	----	500 mg/L	106	70	130	
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 999497)</b>								
EM1709192-002	GW21_12/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	500 mg/L	130	70	130	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 1027435)</b>								
EM1709371-011	Anonymous	ED045G: Chloride	16887-00-6	400 mg/L	102	70	130	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 996587)</b>								
EM1709162-001	Anonymous	ED045G: Chloride	16887-00-6	400 mg/L	85.6	70	130	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 996590)</b>								
EM1709192-009	GW27_12/07/17	ED045G: Chloride	16887-00-6	400 mg/L	97.5	70	130	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 999297)</b>								
EM1709159-005	Anonymous	ED045G: Chloride	16887-00-6	400 mg/L	93.1	70	130	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 1028385)</b>								





Sub-Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	SpikeRecovery(%) MS	Recovery Limits (%)	
				Low	High		
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 1028385) - continued</b>							
EM1709192-022	GMW3_12/07/17	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	98.2	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	101	81	133
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	97.4	71	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	96.4	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	99.6	75	133
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	98.2	64	134
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	97.2	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	101	75	131
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 996715)</b>							
EM1709106-026	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	103	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	97.3	81	133
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	96.5	71	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	95.7	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	95.2	75	133
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	80.0	64	134
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	98.5	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	97.0	75	131
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 999473)</b>							
EM1709192-027	MW9AI_12/07/17	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	106	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	99.9	81	133
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	81.8	71	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	91.1	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	94.9	75	133
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	100	64	134
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	101	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	109	75	131
<b>EG020T: Total Metals by ICP-MS (QCLot: 1027626)</b>							
EM1709192-022	GMW3_12/07/17	EG020A-T: Arsenic	7440-38-2	1 mg/L	98.2	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	98.2	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	87.9	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	86.6	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	93.9	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	94.6	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	92.1	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	93.9	74	116
<b>EG020T: Total Metals by ICP-MS (QCLot: 996726)</b>							
EM1709192-001	GW20_12/07/17	EG020A-T: Arsenic	7440-38-2	1 mg/L	98.8	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	90.3	75	129



Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EG020T: Total Metals by ICP-MS (QCLot: 996726) - continued</b>							
EM1709192-001	GW20_12/07/17	EG020A-T: Chromium	7440-47-3	1 mg/L	93.0	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	93.4	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	99.2	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	93.6	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	93.3	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	90.1	74	116
<b>EG020T: Total Metals by ICP-MS (QCLot: 996727)</b>							
EM1709192-024	QC104_12/07/17	EG020A-T: Arsenic	7440-38-2	1 mg/L	91.8	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	91.3	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	91.3	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	90.3	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	96.4	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	92.2	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	89.3	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	88.6	74	116
<b>EG020T: Total Metals by ICP-MS (QCLot: 999480)</b>							
EM1709192-027	MW9AI_12/07/17	EG020A-T: Arsenic	7440-38-2	1 mg/L	95.5	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	98.8	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	90.8	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	93.5	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	97.0	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	89.6	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	90.6	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	93.0	74	116
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 1028384)</b>							
EM1709371-011	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	84.6	70	120
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 996716)</b>							
EM1709191-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	84.8	70	120
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 999472)</b>							
EM1709248-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	95.9	70	120
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1002551)</b>							
EM1709192-002	GW21_12/07/17	EG035T: Mercury	7439-97-6	0.01 mg/L	96.2	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1002552)</b>							
EM1709192-027	MW9AI_12/07/17	EG035T: Mercury	7439-97-6	0.01 mg/L	93.1	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1027923)</b>							
EM1709371-011	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	80.5	70	130



Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EK040P: Fluoride by PC Titrator (QCLot: 1027404)</b>							
EM1709371-012	Anonymous	EK040P: Fluoride	16984-48-8	5 mg/L	107	70	130
<b>EK040P: Fluoride by PC Titrator (QCLot: 999216)</b>							
EM1709192-001	GW20_12/07/17	EK040P: Fluoride	16984-48-8	5 mg/L	95.2	70	130
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 1030195)</b>							
EM1709371-011	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	# Not Determined	70	130
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 999271)</b>							
EM1709192-002	GW21_12/07/17	EK055G: Ammonia as N	7664-41-7	1 mg/L	82.6	70	130
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 1027437)</b>							
EM1709371-011	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	90.7	80	114
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 996589)</b>							
EM1709191-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	91.2	80	114
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 996592)</b>							
EM1709192-018	F3_12/07/17	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	95.7	80	114
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 999299)</b>							
EM1709277-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	94.0	80	114
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 1030194)</b>							
EM1709371-011	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	97.1	70	130
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 999270)</b>							
EM1709192-001	GW20_12/07/17	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	99.3	70	130
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 1027438)</b>							
EM1709371-011	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	102	79	123
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 996585)</b>							
EM1709191-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	102	79	123
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1000200)</b>							
EM1709106-023	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	95.0	80	114
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1000201)</b>							
EM1709192-027	MW9AI_12/07/17	EP005: Total Organic Carbon	----	100 mg/L	102	80	114
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1033529)</b>							
EM1709371-011	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	110	80	114
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1026376)</b>							
EM1709371-011	Anonymous	EP074-WF: Benzene	71-43-2	20 µg/L	89.7	76	128
		EP074-WF: Toluene	108-88-3	20 µg/L	84.3	72	132



Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 996236)</b>							
EM1709192-002	GW21_12/07/17	EP074-WF: Benzene	71-43-2	20 µg/L	104	76	128
		EP074-WF: Toluene	108-88-3	20 µg/L	109	72	132
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 999456)</b>							
EM1709242-002	Anonymous	EP074-WF: Benzene	71-43-2	20 µg/L	115	76	128
		EP074-WF: Toluene	108-88-3	20 µg/L	100.0	72	132
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1026376)</b>							
EM1709371-011	Anonymous	EP074-WF: 1,1-Dichloroethene	75-35-4	20 µg/L	86.7	63	129
		EP074-WF: Trichloroethene	79-01-6	20 µg/L	77.7	64	126
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 996236)</b>							
EM1709192-002	GW21_12/07/17	EP074-WF: 1,1-Dichloroethene	75-35-4	20 µg/L	# 115	63	129
		EP074-WF: Trichloroethene	79-01-6	20 µg/L	93.0	64	126
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 999456)</b>							
EM1709242-002	Anonymous	EP074-WF: 1,1-Dichloroethene	75-35-4	20 µg/L	# 117	63	129
		EP074-WF: Trichloroethene	79-01-6	20 µg/L	94.8	64	126
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 1026376)</b>							
EM1709371-011	Anonymous	EP074-WF: Chlorobenzene	108-90-7	20 µg/L	86.6	81	119
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 996236)</b>							
EM1709192-002	GW21_12/07/17	EP074-WF: Chlorobenzene	108-90-7	20 µg/L	108	81	119
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 999456)</b>							
EM1709242-002	Anonymous	EP074-WF: Chlorobenzene	108-90-7	20 µg/L	98.0	81	119
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1001673)</b>							
EM1709202-015	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	49.5	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1026375)</b>							
EM1709371-011	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	62.5	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996235)</b>							
EM1709192-002	GW21_12/07/17	EP080: C6 - C9 Fraction	----	280 µg/L	81.6	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996272)</b>							
EM1709151-001	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	87.2	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 996508)</b>							
EM1709210-003	Anonymous	EP071: C10 - C14 Fraction	----	3368 µg/L	100	50	130
		EP071: C15 - C28 Fraction	----	14735 µg/L	98.9	54	136
		EP071: C29 - C36 Fraction	----	7856 µg/L	89.3	50	142
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 999455)</b>							
EM1709242-002	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	97.5	43	125





Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1001673)</b>							
EM1709202-015	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	48.4	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1026375)</b>							
EM1709371-011	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	62.2	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996235)</b>							
EM1709192-002	GW21_12/07/17	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	81.3	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996272)</b>							
EM1709151-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	85.8	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 996508)</b>							
EM1709210-003	Anonymous	EP071: >C10 - C16 Fraction	----	5225 µg/L	97.3	50	128
		EP071: >C16 - C34 Fraction	----	19994 µg/L	93.0	50	150
		EP071: >C34 - C40 Fraction	----	1449 µg/L	96.8	51	159
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 999455)</b>							
EM1709242-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	93.8	44	122
<b>EP080: BTEXN (QCLot: 1001673)</b>							
EM1709202-015	Anonymous	EP080: Benzene	71-43-2	20 µg/L	77.2	68	130
		EP080: Toluene	108-88-3	20 µg/L	75.5	72	132
<b>EP080: BTEXN (QCLot: 1026375)</b>							
EM1709371-011	Anonymous	EP080: Benzene	71-43-2	20 µg/L	85.3	68	130
		EP080: Toluene	108-88-3	20 µg/L	85.8	72	132
<b>EP080: BTEXN (QCLot: 996235)</b>							
EM1709192-002	GW21_12/07/17	EP080: Benzene	71-43-2	20 µg/L	101	68	130
		EP080: Toluene	108-88-3	20 µg/L	103	72	132
<b>EP080: BTEXN (QCLot: 996272)</b>							
EM1709151-001	Anonymous	EP080: Benzene	71-43-2	20 µg/L	99.2	68	130
		EP080: Toluene	108-88-3	20 µg/L	99.1	72	132
<b>EP080: BTEXN (QCLot: 999455)</b>							
EM1709242-002	Anonymous	EP080: Benzene	71-43-2	20 µg/L	113	68	130
		EP080: Toluene	108-88-3	20 µg/L	111	72	132
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 999277)</b>							
EM1709192-002	GW21_12/07/17	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.5 µg/L	79.8	50	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.5 µg/L	96.2	50	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.5 µg/L	82.0	50	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.5 µg/L	61.8	50	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	93.4	50	130
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.5 µg/L	86.2	50	130



Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 999277)</b>							
EM1709192-002	GW21_12/07/17	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	121	50	130
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	83.0	50	130
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	82.8	50	130
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	84.2	50	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	82.6	50	130
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	86.0	50	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	93.2	50	130
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	82.8	50	130
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	113	50	130
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	91.6	50	130
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	63.8	50	150
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 999277)</b>							
EM1709192-002	GW21_12/07/17	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	87.6	50	130
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	110	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	113	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	1.25 µg/L	114	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	115	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	99.2	50	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	99.4	50	130
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 999277)</b>							
EM1709192-002	GW21_12/07/17	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.5 µg/L	75.8	50	130
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.5 µg/L	94.0	50	130
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.5 µg/L	89.8	50	130
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.5 µg/L	89.4	50	130

## QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM1709192	Page	: 1 of 25
Amendment	: 1		
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: MS AVERYLL COYNE	Telephone	: +61-3-8549 9608
Project	: 60537182	Date Samples Received	: 13-Jul-2017
Site	: ----	Issue Date	: 04-Aug-2017
Sampler	: BH, BP, JM	No. of samples received	: 27
Order number	: task 3.2	No. of samples analysed	: 27

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

### Summary of Outliers

#### Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

#### Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

#### Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



### Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
<b>Matrix Spike (MS) Recoveries</b>							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	EM1709371--011	Anonymous	Sulfate as SO4 - Turbidimetric	14808-79-8	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EK055G: Ammonia as N by Discrete Analyser	EM1709371--011	Anonymous	Ammonia as N	7664-41-7	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EP074E: Halogenated Aliphatic Compounds	EM1709192--002	GW21_12/07/17	1.1-Dichloroethene	75-35-4	115 %	63-129%	Recovery greater than upper control limit
EP074E: Halogenated Aliphatic Compounds	EM1709242--002	Anonymous	1.1-Dichloroethene	75-35-4	117 %	63-129%	Recovery greater than upper control limit

### Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method	Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EA005P: pH by PC Titrator</b>							
<b>Clear Plastic Bottle - Natural</b>							
GMW3_12/07/17		----	----	----	01-Aug-2017	12-Jul-2017	20
<b>Clear Plastic Bottle - Natural</b>							
MW9AI_12/07/17		----	----	----	14-Jul-2017	12-Jul-2017	2
<b>Clear Plastic Bottle - Natural</b>							
GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	----	----	----	17-Jul-2017	12-Jul-2017	5
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>							
<b>Clear Plastic Bottle - Natural</b>							
GMW3_12/07/17		----	----	----	01-Aug-2017	19-Jul-2017	13
<b>ED037P: Alkalinity by PC Titrator</b>							
<b>Clear Plastic Bottle - Natural</b>							
GMW3_12/07/17		----	----	----	01-Aug-2017	26-Jul-2017	6
<b>EK057G: Nitrite as N by Discrete Analyser</b>							
<b>Clear Plastic Bottle - Natural</b>							
GMW3_12/07/17		----	----	----	01-Aug-2017	14-Jul-2017	18





Matrix: **WATER**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>						
Clear Plastic Bottle - Natural GMW3_12/07/17	----	----	----	01-Aug-2017	14-Jul-2017	18
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>						
Amber VOC Vial - Sulfuric Acid GMW3_12/07/17	31-Jul-2017	26-Jul-2017	5	01-Aug-2017	26-Jul-2017	6
<b>EP074B: Oxygenated Compounds</b>						
Amber VOC Vial - Sulfuric Acid GMW3_12/07/17	31-Jul-2017	26-Jul-2017	5	01-Aug-2017	26-Jul-2017	6
<b>EP074C: Sulfonated Compounds</b>						
Amber VOC Vial - Sulfuric Acid GMW3_12/07/17	31-Jul-2017	26-Jul-2017	5	01-Aug-2017	26-Jul-2017	6
<b>EP074D: Fumigants</b>						
Amber VOC Vial - Sulfuric Acid GMW3_12/07/17	31-Jul-2017	26-Jul-2017	5	01-Aug-2017	26-Jul-2017	6
<b>EP074E: Halogenated Aliphatic Compounds</b>						
Amber VOC Vial - Sulfuric Acid GMW3_12/07/17	31-Jul-2017	26-Jul-2017	5	01-Aug-2017	26-Jul-2017	6
<b>EP074F: Halogenated Aromatic Compounds</b>						
Amber VOC Vial - Sulfuric Acid GMW3_12/07/17	31-Jul-2017	26-Jul-2017	5	01-Aug-2017	26-Jul-2017	6
<b>EP074G: Trihalomethanes</b>						
Amber VOC Vial - Sulfuric Acid GMW3_12/07/17	31-Jul-2017	26-Jul-2017	5	01-Aug-2017	26-Jul-2017	6
<b>EP074H: Naphthalene</b>						
Amber VOC Vial - Sulfuric Acid GMW3_12/07/17	31-Jul-2017	26-Jul-2017	5	01-Aug-2017	26-Jul-2017	6
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>						
Amber Glass Bottle - Unpreserved GMW3_12/07/17	31-Jul-2017	19-Jul-2017	12	----	----	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>						
Amber Glass Bottle - Unpreserved GMW3_12/07/17	31-Jul-2017	19-Jul-2017	12	----	----	----
Amber VOC Vial - Sulfuric Acid GMW3_12/07/17	31-Jul-2017	26-Jul-2017	5	01-Aug-2017	26-Jul-2017	6
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>						
Amber Glass Bottle - Unpreserved GMW3_12/07/17	31-Jul-2017	19-Jul-2017	12	----	----	----
Amber VOC Vial - Sulfuric Acid GMW3_12/07/17	31-Jul-2017	26-Jul-2017	5	01-Aug-2017	26-Jul-2017	6



Matrix: **WATER**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EP080: BTEXN</b> Amber VOC Vial - Sulfuric Acid GMW3_12/07/17	31-Jul-2017	26-Jul-2017	5	01-Aug-2017	26-Jul-2017	6

### Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
<b>Laboratory Duplicates (DUP)</b>					
Fluoride by PC Titrator	3	31	9.68	10.00	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	0	23	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	1	63	1.59	10.00	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>					
PAH/Phenols (GC/MS - SIM)	0	23	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	1	63	1.59	5.00	NEPM 2013 B3 & ALS QC Standard

### Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for **VOC in soils** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EA005P: pH by PC Titrator</b>							
Clear Plastic Bottle - Natural (EA005-P) GMW3_12/07/17	12-Jul-2017	----	----	----	01-Aug-2017	12-Jul-2017	*
Clear Plastic Bottle - Natural (EA005-P) MW9AI_12/07/17	12-Jul-2017	----	----	----	14-Jul-2017	12-Jul-2017	*
Clear Plastic Bottle - Natural (EA005-P) GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	12-Jul-2017	----	----	----	17-Jul-2017	12-Jul-2017	*



Matrix: **WATER** Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EA005P: pH by PC Titrator - Continued</b>								
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>								
<b>Clear Plastic Bottle - Natural (EA015H)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	----	----	----	14-Jul-2017	19-Jul-2017	✔
<b>Clear Plastic Bottle - Natural (EA015H)</b> MW9AI_12/07/17		12-Jul-2017	----	----	----	17-Jul-2017	19-Jul-2017	✔
<b>Clear Plastic Bottle - Natural (EA015H)</b> GMW3_12/07/17		12-Jul-2017	----	----	----	01-Aug-2017	19-Jul-2017	✘
<b>ED037P: Alkalinity by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural (ED037-P)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17,	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17, MW9AI_12/07/17	12-Jul-2017	----	----	----	17-Jul-2017	26-Jul-2017	✔
<b>Clear Plastic Bottle - Natural (ED037-P)</b> GMW3_12/07/17		12-Jul-2017	----	----	----	01-Aug-2017	26-Jul-2017	✘



Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>							
<b>Clear Plastic Bottle - Natural (ED041G)</b> GMW3_12/07/17	12-Jul-2017	----	----	----	01-Aug-2017	09-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (ED041G)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17 GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	----	----	----	14-Jul-2017	09-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (ED041G)</b> MW9AI_12/07/17	12-Jul-2017	----	----	----	17-Jul-2017	09-Aug-2017	✓
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>							
<b>Clear Plastic Bottle - Natural (ED043)</b> GMW3_12/07/17	12-Jul-2017	03-Aug-2017	09-Aug-2017	✓	04-Aug-2017	09-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (ED043)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17, GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17, MW9AI_12/07/17	12-Jul-2017	18-Jul-2017	09-Aug-2017	✓	18-Jul-2017	09-Aug-2017	✓
<b>ED045G: Chloride by Discrete Analyser</b>							
<b>Clear Plastic Bottle - Natural (ED045G)</b> GMW3_12/07/17	12-Jul-2017	----	----	----	01-Aug-2017	09-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (ED045G)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17 GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	----	----	----	14-Jul-2017	09-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (ED045G)</b> MW9AI_12/07/17	12-Jul-2017	----	----	----	17-Jul-2017	09-Aug-2017	✓





Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>ED093F: Dissolved Major Cations</b>								
Clear Plastic Bottle - Natural (ED093F) MW1371_02_12/07/17	12-Jul-2017	----	----	----	17-Jul-2017	19-Jul-2017	✓	
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F) GMW3_12/07/17	12-Jul-2017	----	----	----	03-Aug-2017	09-Aug-2017	✓	
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F) GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW9AI_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	----	----	----	17-Jul-2017	09-Aug-2017	✓
<b>EG020F: Dissolved Metals by ICP-MS</b>								
Clear Plastic Bottle - Natural (EG020A-F) MW1371_02_12/07/17	12-Jul-2017	----	----	----	14-Jul-2017	08-Jan-2018	✓	
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) GMW3_12/07/17	12-Jul-2017	----	----	----	02-Aug-2017	08-Jan-2018	✓	
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW9AI_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17	12-Jul-2017	----	----	----	14-Jul-2017	08-Jan-2018	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) MW9AI_12/07/17	12-Jul-2017	----	----	----	17-Jul-2017	08-Jan-2018	✓	



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EG020T: Total Metals by ICP-MS</b>							
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)</b> GMW3_12/07/17	12-Jul-2017	01-Aug-2017	08-Jan-2018	✓	02-Aug-2017	08-Jan-2018	✓
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, QC206_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17, GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	12-Jul-2017	14-Jul-2017	08-Jan-2018	✓	14-Jul-2017	08-Jan-2018	✓
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)</b> MW9AI_12/07/17	12-Jul-2017	17-Jul-2017	08-Jan-2018	✓	18-Jul-2017	08-Jan-2018	✓
<b>Clear Plastic Bottle - Nitric Acid; Unspecified (EG020A-T)</b> QC307_12/07/17, QC104_12/07/17, QC_103_12/07/17,	12-Jul-2017	14-Jul-2017	08-Jan-2018	✓	14-Jul-2017	08-Jan-2018	✓
<b>EG035F: Dissolved Mercury by FIMS</b>							
<b>Clear Plastic Bottle - Natural (EG035F)</b> MW1371_02_12/07/17	12-Jul-2017	----	----	----	17-Jul-2017	09-Aug-2017	✓
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)</b> GMW3_12/07/17	12-Jul-2017	----	----	----	03-Aug-2017	09-Aug-2017	✓
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW9AI_12/07/17, GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	----	----	----	17-Jul-2017	09-Aug-2017	✓



Matrix: WATER

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)</b> GMW3_12/07/17	12-Jul-2017	----	----	----	03-Aug-2017	09-Aug-2017	✓	
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, QC206_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17, MW9AI_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17,	12-Jul-2017	----	----	----	19-Jul-2017	09-Aug-2017	✓
<b>Clear Plastic Bottle - Nitric Acid; Unspecified (EG035T)</b> QC307_12/07/17, QC104_12/07/17	QC_103_12/07/17,	12-Jul-2017	----	----	----	19-Jul-2017	09-Aug-2017	✓
<b>EK040P: Fluoride by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural (EK040P)</b> GMW3_12/07/17	12-Jul-2017	----	----	----	01-Aug-2017	09-Aug-2017	✓	
<b>Clear Plastic Bottle - Natural (EK040P)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17,	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17, MW9AI_12/07/17	12-Jul-2017	----	----	----	17-Jul-2017	09-Aug-2017	✓
<b>EK055G: Ammonia as N by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Sulfuric Acid (EK055G)</b> GMW3_12/07/17	12-Jul-2017	----	----	----	03-Aug-2017	09-Aug-2017	✓	
<b>Clear Plastic Bottle - Sulfuric Acid (EK055G)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17,	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17, MW9AI_12/07/17	12-Jul-2017	----	----	----	17-Jul-2017	09-Aug-2017	✓



Matrix: WATER

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EK057G: Nitrite as N by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Natural (EK057G)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17,	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17, MW9AI_12/07/17	12-Jul-2017	----	----	----	14-Jul-2017	14-Jul-2017	✓
<b>Clear Plastic Bottle - Natural (EK057G)</b> GMW3_12/07/17		12-Jul-2017	----	----	----	01-Aug-2017	14-Jul-2017	*
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Sulfuric Acid (EK059G)</b> GMW3_12/07/17		12-Jul-2017	----	----	----	03-Aug-2017	09-Aug-2017	✓
<b>Clear Plastic Bottle - Sulfuric Acid (EK059G)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17,	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17, MW9AI_12/07/17	12-Jul-2017	----	----	----	17-Jul-2017	09-Aug-2017	✓
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>								
<b>Clear Plastic Bottle - Natural (EK071G)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17,	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17, MW9AI_12/07/17	12-Jul-2017	----	----	----	14-Jul-2017	14-Jul-2017	✓
<b>Clear Plastic Bottle - Natural (EK071G)</b> GMW3_12/07/17		12-Jul-2017	----	----	----	01-Aug-2017	14-Jul-2017	*





Matrix: **WATER** Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP005: Total Organic Carbon (TOC)</b>							
<b>Amber VOC Vial - Sulfuric Acid (EP005)</b> GMW3_12/07/17	12-Jul-2017	----	----	----	03-Aug-2017	09-Aug-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP005)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17, GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17, MW9AI_12/07/17	12-Jul-2017	----	----	----	17-Jul-2017	09-Aug-2017	✔
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>							
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17, GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	14-Jul-2017	26-Jul-2017	✔	14-Jul-2017	26-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> MW9AI_12/07/17	12-Jul-2017	17-Jul-2017	26-Jul-2017	✔	17-Jul-2017	26-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GMW3_12/07/17	12-Jul-2017	31-Jul-2017	26-Jul-2017	✘	01-Aug-2017	26-Jul-2017	✘
<b>EP074B: Oxygenated Compounds</b>							
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17, GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	14-Jul-2017	26-Jul-2017	✔	14-Jul-2017	26-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> MW9AI_12/07/17	12-Jul-2017	17-Jul-2017	26-Jul-2017	✔	17-Jul-2017	26-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GMW3_12/07/17	12-Jul-2017	31-Jul-2017	26-Jul-2017	✘	01-Aug-2017	26-Jul-2017	✘



Matrix: **WATER** Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP074C: Sulfonated Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	14-Jul-2017	26-Jul-2017	✔	14-Jul-2017	26-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> MW9AI_12/07/17		12-Jul-2017	17-Jul-2017	26-Jul-2017	✔	17-Jul-2017	26-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GMW3_12/07/17		12-Jul-2017	31-Jul-2017	26-Jul-2017	✘	01-Aug-2017	26-Jul-2017	✘
<b>EP074D: Fumigants</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	14-Jul-2017	26-Jul-2017	✔	14-Jul-2017	26-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> MW9AI_12/07/17		12-Jul-2017	17-Jul-2017	26-Jul-2017	✔	17-Jul-2017	26-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GMW3_12/07/17		12-Jul-2017	31-Jul-2017	26-Jul-2017	✘	01-Aug-2017	26-Jul-2017	✘



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP074E: Halogenated Aliphatic Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	14-Jul-2017	26-Jul-2017	✓	14-Jul-2017	26-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> MW9AI_12/07/17		12-Jul-2017	17-Jul-2017	26-Jul-2017	✓	17-Jul-2017	26-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GMW3_12/07/17		12-Jul-2017	31-Jul-2017	26-Jul-2017	*	01-Aug-2017	26-Jul-2017	*
<b>EP074F: Halogenated Aromatic Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	14-Jul-2017	26-Jul-2017	✓	14-Jul-2017	26-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> MW9AI_12/07/17		12-Jul-2017	17-Jul-2017	26-Jul-2017	✓	17-Jul-2017	26-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GMW3_12/07/17		12-Jul-2017	31-Jul-2017	26-Jul-2017	*	01-Aug-2017	26-Jul-2017	*



Matrix: **WATER** Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP074G: Trihalomethanes</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	14-Jul-2017	26-Jul-2017	✔	14-Jul-2017	26-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> MW9AI_12/07/17		12-Jul-2017	17-Jul-2017	26-Jul-2017	✔	17-Jul-2017	26-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GMW3_12/07/17		12-Jul-2017	31-Jul-2017	26-Jul-2017	✘	01-Aug-2017	26-Jul-2017	✘
<b>EP074H: Naphthalene</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	14-Jul-2017	26-Jul-2017	✔	14-Jul-2017	26-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> MW9AI_12/07/17		12-Jul-2017	17-Jul-2017	26-Jul-2017	✔	17-Jul-2017	26-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GMW3_12/07/17		12-Jul-2017	31-Jul-2017	26-Jul-2017	✘	01-Aug-2017	26-Jul-2017	✘





Matrix: **WATER** Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
<b>Amber Glass Bottle - Unpreserved (EP075(SIM))</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	17-Jul-2017	19-Jul-2017	✔	19-Jul-2017	26-Aug-2017	✔
<b>Amber Glass Bottle - Unpreserved (EP075(SIM))</b> MW9AI_12/07/17		12-Jul-2017	18-Jul-2017	19-Jul-2017	✔	18-Jul-2017	27-Aug-2017	✔
<b>Amber Glass Bottle - Unpreserved (EP075(SIM))</b> GMW3_12/07/17		12-Jul-2017	31-Jul-2017	19-Jul-2017	✘	02-Aug-2017	09-Sep-2017	✔



Matrix: **WATER**

Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, QC206_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC307_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	17-Jul-2017	19-Jul-2017	✔	19-Jul-2017	26-Aug-2017	✔
<b>Amber Glass Bottle - Unpreserved (EP071)</b> MW9AI_12/07/17		12-Jul-2017	18-Jul-2017	19-Jul-2017	✔	18-Jul-2017	27-Aug-2017	✔
<b>Amber Glass Bottle - Unpreserved (EP071)</b> QC_103_12/07/17,	QC104_12/07/17	12-Jul-2017	18-Jul-2017	19-Jul-2017	✔	19-Jul-2017	27-Aug-2017	✔
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GMW3_12/07/17		12-Jul-2017	31-Jul-2017	19-Jul-2017	✘	01-Aug-2017	09-Sep-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, QC206_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC307_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17, QC_103_12/07/17, QC105_12/07/17,	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, QC207_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17, QC104_12/07/17, QC106_12/07/17	12-Jul-2017	14-Jul-2017	26-Jul-2017	✔	14-Jul-2017	26-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> MW9AI_12/07/17		12-Jul-2017	17-Jul-2017	26-Jul-2017	✔	17-Jul-2017	26-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GMW3_12/07/17		12-Jul-2017	31-Jul-2017	26-Jul-2017	✘	01-Aug-2017	26-Jul-2017	✘
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> QC108_14/07/17		14-Jul-2017	18-Jul-2017	28-Jul-2017	✔	19-Jul-2017	28-Jul-2017	✔



Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>								
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, QC206_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC307_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17,	12-Jul-2017	17-Jul-2017	19-Jul-2017	✓	19-Jul-2017	26-Aug-2017	✓
<b>Amber Glass Bottle - Unpreserved (EP071)</b> MW9AI_12/07/17		12-Jul-2017	18-Jul-2017	19-Jul-2017	✓	18-Jul-2017	27-Aug-2017	✓
<b>Amber Glass Bottle - Unpreserved (EP071)</b> QC_103_12/07/17,	QC104_12/07/17	12-Jul-2017	18-Jul-2017	19-Jul-2017	✓	19-Jul-2017	27-Aug-2017	✓
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GMW3_12/07/17		12-Jul-2017	31-Jul-2017	19-Jul-2017	*	01-Aug-2017	09-Sep-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, QC206_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC307_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17, QC_103_12/07/17, QC105_12/07/17,	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, QC207_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17, QC104_12/07/17, QC106_12/07/17	12-Jul-2017	14-Jul-2017	26-Jul-2017	✓	14-Jul-2017	26-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> MW9AI_12/07/17		12-Jul-2017	17-Jul-2017	26-Jul-2017	✓	17-Jul-2017	26-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GMW3_12/07/17		12-Jul-2017	31-Jul-2017	26-Jul-2017	*	01-Aug-2017	26-Jul-2017	*
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> QC108_14/07/17		14-Jul-2017	18-Jul-2017	28-Jul-2017	✓	19-Jul-2017	28-Jul-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080: BTEXN</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW20_12/07/17, GW12_12/07/17, GW13_12/07/17, QC206_12/07/17, GW27_12/07/17, GW35_12/07/17, GW17_12/07/17, QC307_12/07/17, DAMW5_02_12/07/17, MW1333_02_12/07/17, QC_103_12/07/17, QC105_12/07/17,	GW21_12/07/17, GW16_12/07/17, GW25_12/07/17, QC207_12/07/17, GW19_12/07/17, GW24_12/07/17, GW15_12/07/17, QC308_12/07/17, F3_12/07/17, MW1371_02_12/07/17, QC104_12/07/17, QC106_12/07/17	12-Jul-2017	14-Jul-2017	26-Jul-2017	✓	14-Jul-2017	26-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> MW9AI_12/07/17		12-Jul-2017	17-Jul-2017	26-Jul-2017	✓	17-Jul-2017	26-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GMW3_12/07/17		12-Jul-2017	31-Jul-2017	26-Jul-2017	*	01-Aug-2017	26-Jul-2017	*
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> QC108_14/07/17		14-Jul-2017	18-Jul-2017	28-Jul-2017	✓	19-Jul-2017	28-Jul-2017	✓
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW21_12/07/17, GW13_12/07/17, GW19_12/07/17, MW1333_02_12/07/17	GW12_12/07/17, GW27_12/07/17, DAMW5_02_12/07/17,	12-Jul-2017	----	----	----	19-Jul-2017	08-Jan-2018	✓
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW21_12/07/17, GW13_12/07/17, GW19_12/07/17, MW1333_02_12/07/17	GW12_12/07/17, GW27_12/07/17, DAMW5_02_12/07/17,	12-Jul-2017	----	----	----	19-Jul-2017	08-Jan-2018	✓
<b>EP231C: Perfluoroalkyl Sulfonamides</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW21_12/07/17, GW13_12/07/17, GW19_12/07/17, MW1333_02_12/07/17	GW12_12/07/17, GW27_12/07/17, DAMW5_02_12/07/17,	12-Jul-2017	----	----	----	19-Jul-2017	08-Jan-2018	✓





Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW21_12/07/17, GW13_12/07/17, GW19_12/07/17, MW1333_02_12/07/17	GW12_12/07/17, GW27_12/07/17, DAMW5_02_12/07/17,	12-Jul-2017	----	----	----	19-Jul-2017	08-Jan-2018	✓
<b>EP231P: PFAS Sums</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW21_12/07/17, GW13_12/07/17, GW19_12/07/17, MW1333_02_12/07/17	GW12_12/07/17, GW27_12/07/17, DAMW5_02_12/07/17,	12-Jul-2017	----	----	----	19-Jul-2017	08-Jan-2018	✓



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Laboratory Duplicates (DUP)</b>							
Alkalinity by PC Titrator	ED037-P	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	8	80	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	6	49	12.24	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	3	31	9.68	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	7	60	11.67	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	4	39	10.26	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	7	64	10.94	10.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	23	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	19	10.53	10.00	✔	NEPM 2013 B3 & ALS QC Standard
pH by PC Titrator	EA005-P	6	54	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	4	28	14.29	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	8	80	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	8	80	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	5	35	14.29	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	7	61	11.48	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	5	38	13.16	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	5	37	13.51	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	63	1.59	10.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	10	89	11.24	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	5	41	12.20	10.00	✔	NEPM 2013 B3 & ALS QC Standard
<b>Laboratory Control Samples (LCS)</b>							
Alkalinity by PC Titrator	ED037-P	3	60	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	8	80	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	3	49	6.12	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	3	60	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	2	31	6.45	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	4	60	6.67	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	39	5.13	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	4	64	6.25	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	3	23	13.04	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	3	28	10.71	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	8	80	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard



Matrix: **WATER** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Control Samples (LCS) - Continued</b>							
Total Dissolved Solids (High Level)	EA015H	8	80	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	35	8.57	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	4	61	6.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	3	38	7.89	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	3	37	8.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	4	63	6.35	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	5	89	5.62	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	3	41	7.32	5.00	✓	NEPM 2013 B3 & ALS QC Standard
<b>Method Blanks (MB)</b>							
Ammonia as N by Discrete analyser	EK055G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	4	80	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	3	49	6.12	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	3	60	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	2	31	6.45	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	4	60	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	39	5.13	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	4	64	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	3	23	13.04	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	3	28	10.71	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	4	80	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	4	80	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	35	8.57	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	4	61	6.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	3	38	7.89	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	3	37	8.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	4	63	6.35	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	5	89	5.62	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	3	41	7.32	5.00	✓	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>							
Ammonia as N by Discrete analyser	EK055G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	4	80	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	3	49	6.12	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	3	60	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	2	31	6.45	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	39	5.13	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	4	64	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	23	0.00	5.00	*	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	28	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Matrix Spikes (MS) - Continued</b>							
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	4	80	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	35	8.57	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	4	61	6.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	3	38	7.89	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	3	37	8.11	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	63	1.59	5.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	5	89	5.62	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	3	41	7.32	5.00	✔	NEPM 2013 B3 & ALS QC Standard





## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by PC Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of 'filterable' residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM (2013) Schedule B(3)
Alkalinity by PC Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM (2013) Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Oxidised Sulfur as SO4 2-	ED043	WATER	In house: The sample is treated with Peroxide to convert all Sulfur species to Sulfate. Sulfate in the sample can then be determined by ICPAES and reported as TOS as SO4 2-.
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm APHA 21st edition seal method 2 017-1-L april 2003
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM (2013) Schedule B(3)  Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM (2013) Schedule B(3)  Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM (2013) Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.



Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Fluoride by PC Titrator	EK040P	WATER	In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3)
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO <sub>2</sub> - B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO <sub>3</sub> - F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined separately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite and Nitrate as N (NO <sub>x</sub> ) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO <sub>3</sub> - F. Combined oxidised Nitrogen (NO <sub>2</sub> +NO <sub>3</sub> ) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with orthophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM (2013) Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Volatile Organic Compounds WF Detection Limits	EP074-WF	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)



<i>Analytical Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with methanol. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers.
<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Total Oxidisable Sulfur as SO4 2- Prep	ED043-PR	WATER	In house
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (2013) Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

**FQM - Generic Chain of Custody Form**

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: JM BP BH		Destination Laboratory						
PROJECT MANAGER (PM): <b>Averyll Coyne</b>		SITE:		MOBILE: 0409536240		PHONE:						
PROJECT NUMBER & TASK CO <b>60537182</b>		P.O. NO.:		EMAIL REPORT TO: <b>Averyll Coyne</b>								
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)								
[REDACTED]		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:		pH, TDS, TOC TRH (CS-40) PAH Nitrogen oxides/sulphur oxides VOC (ALSERP/4HR) includes BTEN Ionic chemistry (Na), (Ca), (Mg), (K), (Cl), (NO3), (NO2), (NH3) (pCa), (pCu), (F), (Fe) PFAS - 28 analytes Dissolved metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg) Total Metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)								
		SAMPLE INFORMATION (note: S = Soil, W=Water)						CONTAINER INFORMATION				
		ALS ID	SAMPLE ID					MATRX	DATE	Time	Type / Code	Total bottles
		Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.										
1	GW20-12/07/17	W	12/07/17			10	HOLD OTEX 11-00-00					
2	GW21-12/07/17					12						
3	GW12-12/07/17					13						
4	GW16-12/07/17					10						
5	GW13-12/07/17					12						
6	GW25-12/07/17					10						
7	QC206-12/07/17					4						
8	QC207-12/07/17					1						
9	GW27-12/7/17					12						
10	GW19-12/7/17					12						
11	GW35-12/7/17					10						
12	GW24-12/7/17					10						
13	GW17-12/7/17					10						
14	GW15-12/7/17					10						
	<del>QC309-12/7/17</del>					<del>10</del>						
15	QC307-12/7/17					4						
16	QC308-12/7/17					10						
RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:		METHOD OF SHIPMENT						
Name: <i>[Signature]</i>	Date: 12/07/17	Name:	Date:	Name:	Date:	Con' Note No:						
Of: AECOM	Time: PM	Of:	Time:	Of:	Time:	Transport Co:						

Environmental Division  
Melbourne  
Work Order Reference  
**EM1709192**



Telephone - 61-3-8549 9600

*Manuel (Am) 13/07 11-00-00*

COC Page of



**FQM - Generic Chain of Custody Form**

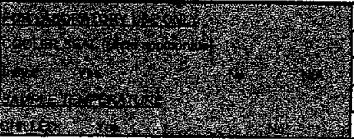
CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: JM BP BH		Destination Laboratory				
PROJECT MANAGER (PM): Averyll Coyne		SITE:		MOBILE: 0409536240		ALS				
PROJECT NUMBER & TASK CO 60537182		P.O. NO.:		EMAIL REPORT TO: Averyll Coyne						
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)						
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: [Redacted]		pH, TDS, TOC TRH (C6-40) PAH Nitrogen oxides/sulphur oxides VOC (ALSER074-WF) includes BTEXN Ionic chemistry (Ni), (Cr), (Mn), (K), (Cl), (HCO3), (NO3), (NO2), (NH3) (PM10), (SO4), (Pb) (Mn) PFAS - 28 analyses Dissolved metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg) Total Metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg) BTEX TRH 6-C9 HOLD		Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.						
				SAMPLE INFORMATION (note: S = Soil, W=Water)		CONTAINER INFORMATION				
				ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles
				17	DAMPW5-02-12/07/17	W	12/7			
18	F3-12/07/17									
19	MW1333-02-12/07/17									
20	MW1371-02-12/07/17									
21	MW19A1-12/07/17									
22	GMW3-12/07/17									
23	QL-103-12/07/17									
24	QL104-12/07/17					5				
25	QL105-12/07/17									
26	QL106-12/07/17									
RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:		METHOD OF SHIPMENT				
Name:	Date:	Name:	Date:	Name:	Date:	Corr Note No:				
Of:	Time:	Of:	Time:	Of:	Time:	Transport Co:				

**Water Container Codes:** P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic  
 V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;  
 F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag  
**Soil Container Codes:** Jar = Unpreserved glass jar

*Manu (AW)*  
 13/7 11-05

**FQM - Generic Chain of Custody Form**

Q4AN(EV)-007-FM1

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: JM BP BH		Destination Laboratory	
PROJECT MANAGER (PM): Averyll Coyne		SITE:		MOBILE: 0409536240		PHONE:	
PROJECT NUMBER & TASK CO 60537182		P.O. NO.:		EMAIL REPORT TO: Averyll Coyne			
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)			
		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:		PH, TDS, TOC TRH (CS-40) PAH Nitrogen oxides/sulphur oxides VOC (ALSER/74-MF) includes BTEXN Ionic chemistry (Na, Ca), (Mg), (K), (Cl), (HCO3), (NO3), (NO2), (NH3) (TDS), (SO4), (F), (Mn) PFAS - 28 analytes Dissolved metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg) Total Metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)			
SAMPLE INFORMATION (note: S = Soil, W=Water)				CONTAINER INFORMATION			
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	HOLD
1	GW20-12/07/17	W	12/07/17			10	
2	GW21-12/07/17					12	
3	GW2-12/07/17					12	
4	GW16-12/07/17					10	
5	GW13-12/07/17					12	
6	GW25-12/07/17					10	
7	QC206-12/07/17					4	
8	QC207-12/07/17					1	
9	GW27-12/7/17					12	
10	GW19-12/7/17					12	
11	GW35-12/7/17					10	
12	GW24-12/7/17					10	
13	GW17-12/7/17					10	
14	GW15-12/7/17					10	
	<del>QC307-12/7/17</del>					<del>10</del>	
15	QC307-12/7/17					4	
16	QC308-12/7/17					10	
RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:		METHOD OF SHIPMENT	
Name: <i>B. Coyne</i>	Date: 12/07/17	Name:	Date:	Name:	Date:	Con' Note No:	
Of: <i>AECOM</i>	Time: <i>PM</i>	Of:	Time:	Of:	Time:	Transport Co:	

HOLD  
 01-11-17  
 CC-01

Environmental Division  
 Melbourne  
 Work Order Reference  
**EM1709192**



Telephone +61-3-8548 9800

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic  
 V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;  
 F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag.  
 Soil Container Codes: Jer = Unpreserved glass jar

*Marcus (AM) 13/12, 11-05*

COC Page of

ANZ  
**FQM - Generic Chain of Custody Form**

CONSULTANT: <b>AECOM</b>				ADDRESS / OFFICE:				SAMPLER: <b>JM BP BH</b>				Destination Laboratory						
PROJECT MANAGER (PM): <b>Averyll Coyne</b>				SITE:				MOBILE: <b>0409536240</b>				PHONE:						
PROJECT NUMBER & TASK CO <b>60537182</b>				P.O. NO.:				EMAIL REPORT TO: <b>Averyll Coyne</b>				<b>ALS</b>						
RESULTS REQUIRED (Date):				QUOTE NO.:				ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)										
[REDACTED]				COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:								Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.						
SAMPLE INFORMATION (note: S = Soil, W=Water)								CONTAINER INFORMATION										
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	pH, TDS, TOC	TRH (CS-40)	PAH	Nitrogen oxides/sulphur oxides	VOC (AL-SEP074-WF) includes BTEX	ionic chemistry (As, Cd, Cr, (Hg), (K), (Ni), (NO3), (NO2), (NH3), (PO4), (SO4), (F), (Mn))	PFAS - 28 analytes	Dissolved metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)	Total Metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)	BTEX	TRH 6-C9	HOLD
17	DAMW5-02-12/07/17	W	12/7				X	X	X	X	X	X	X	X	X			
18	F3-12/07/17						X	X	X	X	X	X	X	X	X			
19	MW1333-02-12/07/17						X	X	X	X	X	X	X	X	X			
20	MW1371-02-12/07/17						X	X	X	X	X	X	X	X	X			
21	MW9A1-12/07/17						X	X	X	X	X	X	X	X	X			
22	GMW3-12/07/17																	
23	QC-103-12/07/17							X						X	X	X		
24	QC104-12/07/17					5		X						X	X	X		
25	QC105-12/07/17							<del>X</del>						<del>X</del>	<del>X</del>	<del>X</del>		
26	QC106-12/07/17															X	X	
RELINQUISHED BY:				RECEIVED BY				RECEIVED BY				METHOD OF SHIPMENT						
Name:		Date:		Name:		Date:		Name:		Date:		Con' Note No:						
Of:		Time:		Of:		Time:		Of:		Time:		Transport Co:						

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic  
 V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;  
 F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.  
 Soil Container Codes: Jar = Unpreserved glass jar

COC Page 2 of 2

*MANU (AW)*  
 13/7 11-005

ANZ  
FQM - Generic Chain of Custody Form

CONSULTANT: AECOM			ADDRESS / OFFICE:			SAMPLER: JM BP BH			Destination Laboratory										
PROJECT MANAGER (PM): Averyll Coyne			SITE:			MOBILE: 0409536240			ALC										
PROJECT NUMBER & TASK CD 60537182			P.O. NO.:			EMAIL REPORT TO: Averyll Coyne													
RESULTS REQUIRED (Date):			QUOTE NO.:			ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)													
[REDACTED]			COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:  NP (AW) 1417			pH, TDS, TOC	TRH (CG-40)	PAN	Nitrogen oxides/sulphur oxides	VOC (ALSEP/PAH/F) includes BTEX	Ionic chemistry (Na, Ca, Mg), (K, Cl), (NO3), (NO2), (NH4), (NH3) (ppm), (ppb), (ppm), (ppb)	PFAS - 28 analytes	Dissolved metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)	Total Metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)	OTHER	TRH CG-09	HOLD	Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.	
SAMPLE INFORMATION (note: S = Soil, W = Water)						CONTAINER INFORMATION													
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles													
27	MW9A1-12/07/17	W	14/07/17				X	X	X	X	X	X	X	X					
28	QC108-12/07/17	W	11/14/17																
RELINQUISHED BY:			RECEIVED BY:			RECEIVED BY:			METHOD OF SHIPMENT										
Name: Jacob		Date: 14/07/17		Name:		Date:		Name: RANU 1417		Date:		Cont' Note No:							
Of: AECOM		Time:		Of:		Time:		Of: ALC 13.45		Time:		Transport Co:							
Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic																			
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;																			
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.												Soil Container Codes: Jer = Unpreserved glass jar							

NO2  
NP 1417

QC108



ANZ  
FQM - Generic Chain of Custody Form

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: JM BP BH		Destination Laboratory								
PROJECT MANAGER (PM): <b>Averyll Coyne</b>		SITE:		MOBILE: 0409536240		PHONE:								
PROJECT NUMBER & TASK CO 60537182		P.O. NO.:		EMAIL REPORT TO: Averyll Coyne										
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED including SITES (note - suite codes must be listed to attract suite prices)										
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: _____ _____ _____		PH, TDS, TOC TRH (CR-40) PAH Nitrogen oxides/sulphur oxides VOC (ALSEP/PA-WF) includes BTEXN Ionic chemistry (Ni), (Cu), (Mg), (K), (Cl), (HCO3), (NO3), (NO2), (NH3) (PO4), (SO4), (F), (Mn) PFAS - 28 analytes Dissolved metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg) Total Metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)		Notes: e.g. Highly contaminated sample e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.		ATX TAT CC-6 HOLD								
								SAMPLE INFORMATION (note: S = Soil, W = Water)		CONTAINER INFORMATION				
								ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles
								1	GW20-12/07/17	W	12/07/17			10
2	GW21-12/07/17					12								
3	GW12-12/07/17					13								
4	GW10-12/07/17					10								
5	GW13-12/07/17					12								
6	GW25-12/07/17					10								
7	QC206-12/07/17					4								
8	QC207-12/07/17					1								
9	GN27-12/7/17					12								
10	GN19-12/7/17					12								
11	GW35-12/7/17					10								
12	GN24-12/7/17					10								
13	GW17-12/7/17					10								
14	GW15-12/7/17					10								
	<del>QC309-12/7/17</del>					<del>10</del>								
15	QC307-12/7/17					4								
16	QC308-12/7/17					10								
RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:		METHOD OF SHIPMENT								
Name: <i>B. Coyne</i>	Date: 12/07/17	Name:	Date:	Name:	Date:	Con' Note No:								
Of: <i>AECOM</i>	Time: <i>PM</i>	Of:	Time:	Of:	Time:	Transport Co:								
Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.														

Environmental Division  
Melbourne  
Work Order Reference  
**EM1709192**



Telephone - 61-3-8549 9600

*Mona (AM) 13/12, 11-005*

COC Page of

ANZ

FQM - Generic Chain of Custody Form

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: JM BP BH		Destination Laboratory																			
PROJECT MANAGER (PM): Averyll Coyne		SITE:		MOBILE: 0408536240		PHONE:																			
PROJECT NUMBER & TASK CO 60537182		P.O. NO.:		EMAIL REPORT TO: Averyll Coyne		ALS																			
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)																					
[REDACTED]		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:				pH, TDS, TOC	TRH (CS-40)	PAH	Nitrogen oxides/sulphur oxides	VOC (ALSERV4-NF) includes BTEX	Ionic chemistry (Na), (Ca), (Mg), (SO <sub>4</sub> ), (CO <sub>3</sub> ), (HCO <sub>3</sub> ), (NO <sub>3</sub> ), (NO <sub>2</sub> ), (NH <sub>4</sub> ), (PO <sub>4</sub> ), (SO <sub>4</sub> ), (F <sup>-</sup> ), (OH <sup>-</sup> )	PFAS - 28 analyses	Dissolved metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)	Total Metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)	BTEX	TRH 6-L9	HOLD	Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.							
																			SAMPLE INFORMATION (note: S = Soil, W = Water)		CONTAINER INFORMATION				
																			ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles
																			17	DAMW5-02-12/07/17	W	12/7			
18	F3-12/07/17																								
19	MW1333-02-12/07/17																								
20	MW1371-02-12/07/17																								
21	MW9A1-12/07/17																								
22	6MW3-12/07/17																								
23	QL103-12/07/17				X																				
24	QL104-12/07/17				X	5																			
25	QL105-12/07/17				<del>X</del>																				
26	QL106-12/07/17																								
RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:		METHOD OF SHIPMENT:																			
Name:	Date:	Name:	Date:	Name:	Date:	Con' Note No:																			
Of:	Time:	Of:	Time:	Of:	Time:	Transport Co:																			

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic  
 V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;  
 F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. Soil Container Codes: Jar = Unpreserved glass jar

COC Page 2 of 2

*MANN (AW)*  
 13/7 11-05

ANZ

FQM - Generic Chain of Custody Form

CONSULTANT: AECOM	ADDRESS / OFFICE:	SAMPLER: JM BP BH	Destination Laboratory
PROJECT MANAGER (PM): Averyll Coyne	SITE:	MOBILE: 0408536240	ALS
PROJECT NUMBER & TASK CO 60537182	P.O. NO.:	EMAIL REPORT TO: Averyll Coyne	
RESULTS REQUIRED (Date):	QUOTE NO.:	ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)	

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

NP (AS) 1417

SAMPLE INFORMATION (note: S = Soil, W=Water)						CONTAINER INFORMATION		pH, TDS, TOC	TRH (CS-48)	PAH	Nitrogen oxides/sulphur oxides	VOC (ALSEP94-WF) Includes BTEXN	ionic chemistry (Na, Ca, Mg), (K), (Cl), (HCO3), (NO3), (NO2), (NH3) (Min)	PFAS - 28 analytes	Dissolved metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)	Total Metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)	672X TRH 6-69 HOLD	Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles												
27	X MW941-12/07/17	W	14/07/17				X	X	X	X	X	X	X	X	X	X		
28	X Q108-14/07/17	W	11/14/17															

NO2  
NP 1417.

RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:		METHOD OF SHIPMENT:	
Name: Jacob	Date: 14/07/17	Name:	Date:	Name: RANU	Date: 14/7	Cont' Note No:	
Of: AECOM	Time:	Of:	Time:	Of: ALS	Time: 13:45	Transport Co:	

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic  
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;  
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solts; B = Unpreserved Bag.  
Soil Container Codes: Jar = Unpreserved glass jar

ANZ  
**FQM - Generic Chain of Custody Form**

**AECOM**

Q4AN(EV)-007-FM1

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: JM BP 9H		Destination Laboratory	
PROJECT MANAGER (PM): Averyll Coyne		SITE:		MOBILE: 0409536240		PHONE:	
PROJECT NUMBER & TASK GO 80537182		P.O. NO.:		EMAIL REPORT TO: Averyll Coyne			
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)			
[REDACTED]		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:		PH, TDS, TOC		Notes: e.g. Highly contaminated sample e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.	
				TRM (Cu, Pb)		Notes: e.g. Highly contaminated sample e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.	
SAMPLE INFORMATION (note: S = Soil, W=Water)		CONTAINER INFORMATION		PAH		Notes: e.g. Highly contaminated sample e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.	
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	
1	GW20-12/07/17	W	12/07/17			10	
2	GW21-12/07/17					12	
3	GW12-12/07/17					12	
4	GW16-12/07/17					10	
5	GW13-12/07/17					12	
6	GW25-12/07/17					10	
7	QC206-12/07/17					4	
8	QC207-12/07/17					1	
9	GW27-12/7/17					12	
10	GW19-12/7/17					12	
11	GW35-12/7/17					10	
12	GW24-12/7/17					10	
13	GW17-12/7/17					10	
14	GW15-12/7/17					10	
	<del>QC307-12/7/17</del>					<del>10</del>	
15	QC307-12/7/17					4	
16	QC308-12/7/17					10	

Environmental Division  
 Melbourne  
 Work Order Reference  
**EM1709192**



Telephone - 01-4-8549 9600

RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT	
Name: <i>B. Coyne</i>	Date: <i>12/07/17</i>	Name:	Date:	Name:	Date:	Conf Note No:	
Of: <i>AECOM</i>	Time: <i>PM</i>	Of:	Time:	Of:	Time:	Transport Co:	

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cl Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Amber Glass Preserved Plastic  
 V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airtight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic  
 F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulfate Soils; B = Unpreserved Bag  
 Soil Container Codes: Jar = Unpreserved glass jar

*Morgan (AM) 13/07 11-465*

COC Page of



ANZ  
FGM - Generic Chain of Custody Form

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: JM BP BH		Destination Laboratory													
PROJECT MANAGER (PM): Avernill Coyne		SITE:		MOBILE: 0408636240		PHONE:													
PROJECT NUMBER & TASK CO: 08837182		P.O. NO.:		EMAIL REPORT TO: Avernill Coyne		ALS													
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED (including SLETES (note - suite codes must be listed to extract suite prices))															
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:				PH, TOC	TRM (CSAP)	PAH	Nitrogen ammonium nitrate	VOC (ALSER/4-HF) includes BTDX	Inch chemistry (Hg, Cd, Ni), (Mn), (Pb), (TrCAS), (PbO), (PCO), (Mn) (ppb), (ppb), (P, (ug)	PFAS - 28 analytes	Distilled metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)	Total metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)	BTEX	TRH6-C9	FOUR	Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.			
																SAMPLE INFORMATION (note: S = Soil, W=Water)		CONTAINER INFORMATION	
																ALS ID	SAMPLE ID	MATRIX	DATE
17	DAMW5-02-12/07/17	W	12/7				X	X	X	X	X	X	X	X	X				
18	F3-12/07/17						X	X	X	X	X	X	X	X	X				
19	MW1333-02-12/07/17						X	X	X	X	X	X	X	X	X				
20	MW1371-02-12/07/17						X	X	X	X	X	X	X	X	X				
21	MWPA1-12/07/17						X	X	X	X	X	X	X	X	X				
22	GIMW03-12/07/17						X	X	X	X	X	X	X	X	X				
23	QL103-12/07/17						X				X	X	X	X					
24	QL104-12/07/17					5	X				X	X	X	X					
25	QL105-12/07/17						X				X	X	X	X			only BTEX TRH6-C9		
26	QL106-12/07/17						X				X	X	X	X					
RELINQUISHED BY:				RECEIVED BY				RECEIVED BY				METHOD OF SHIPMENT							
Name:		Date:		Name:		Date:		Name:		Date:		Con't Note No:							
Of:		Time:		Of:		Time:		Of:		Time:		Transport Co:							

MP(A)  
13/7  
NA  
03

COC Page 2 of 2

plan (Am)  
13/7 11-05

ANZ  
**FQM - Generic Chain of Custody Form**

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: JM BP BH		Destination Laboratory	
PROJECT MANAGER (PM): Averyll Coyne		SITE:		MOBILE: 0408536240		PHONE:	
PROJECT NUMBER & TASK CODE: 60637182		P.O. NO.:		EMAIL REPORT TO: Averyll Coyne		ALS	
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED including SITES (note - suite codes must be listed to attract suite prices)			
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: NP (AUS) 1417		pH, TDS, TOC		TRH (C&A)		PAH	
		Nitrogen		condensable sulfur dioxide		VOC (ALSEP/4-MP) includes BTEX	
		Inorganic chemistry (As, Cd, Cr, Ni, Pb, Se, Zn)		Organic chemistry (As, Cd, Cr, Ni, Pb, Se, Zn)		PFAS - 28 analytes	
Total Metals (As, Cd, Cr, Cu, Fe, Ni, Zn, Al, Fe, Mn, Hg)		672X		TRH C6-C9		Notes: e.g. Highly contaminated sample e.g. "High PAHs expected". Extra volume for IQC or trace LORs etc.	
SAMPLE INFORMATION (note: B = Soil, W = Water)				CONTAINER INFORMATION			
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	
27	MW9A1-12/07/17	W	14/07/17				X X X X X X X X
28	QC108-14/07/17	W	11/14/17				
RELINQUISHED BY:		RECEIVED BY		RECEIVED BY		METHOD OF SHIPMENT	
Name: Jacob	Date: 14/07/17	Name:	Date:	Name: P. N. N.	Date: 14/7	Name:	Cont Note No:
Of: AECOM	Time:	Of:	Time:	Of: AECOM	Time: 13:45	Time:	Transport Co:

NOZ  
 NO 1417.

**Ryan O'Donnell**

---

**From:** Shirley LeCornu  
**Sent:** Monday, 31 July 2017 9:44 AM  
**To:** Ryan O'Donnell  
**Subject:** FW: Fishermens Bend EM1709371 & EM1709192

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Hi Ryan

Can you please organise for EM1709371 and EN1709192 to be amended and for the samples below to be analysed.

Thanks

Shirley

**Shirley LeCornu**  
 Client Services Officer – Springvale  
 Environmental



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**F** +61 3 8549 9626

[Shirley.lecornu@alsglobal.com](mailto:Shirley.lecornu@alsglobal.com)

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Springvale Vic 3171

Australia

**We are keen for your feedback!** [Please click here for your 1 question survey](#)

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EnviroMail™ 112 – Algal Capabilities

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**From:** Muller, Jacob [mailto:Jacob.Muller@aecom.com]  
**Sent:** Monday, 31 July 2017 8:59 AM  
**To:** Melbourne Enviro Services <MelbourneEnviroSer@alsglobal.com>  
**Subject:** FW: Fishermens Bend EM1709371 & EM1709192

Hi ALS

I as after sending the below email to Peter but he appears to be out of the office, it possible to get someone else to give me a hand with this?

Regards

**Jacob Muller**

Graduate Environmental Scientist

D +61 3 9653 2616

[Jacob.Muller@aecom.com](mailto:Jacob.Muller@aecom.com)

**AECOM**

Collins Square, Level 10, Tower Two, 727 Collins Street, Melbourne, VIC 3008

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[aecom.com](http://aecom.com)

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**From:** Muller, Jacob

**Sent:** Monday, 31 July 2017 8:55 AM

**To:** 'Peter Ravlic'

**Subject:** Fishermens Bend EM1709371 & EM1709192

Hi Peter

The follow samples were accidently left blank on the COC 1709371

GW69

GW61 (PFAS)

GW65

GW30

GW74

And on EM1709192

GMW03

Would it be possible to get these tested? Hopefully you still have the samples, also is GW32 still on hold.

Regards,

**Jacob Muller**

Graduate Environmental Scientist

D +61 3 9653 2616

[Jacob.Muller@aecom.com](mailto:Jacob.Muller@aecom.com)

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ALS Group: Click [here](#) to report this email as spam.



## Shirley LeCornu

---

**From:** Muller, Jacob <Jacob.Muller@aecom.com>  
**Sent:** Monday, 31 July 2017 10:03 AM  
**To:** Shirley LeCornu  
**Subject:** RE: Fishermens Bend EM1709371 & EM1709192  
**Attachments:** updated COCs.pdf

Hi Shirley

Thanks for that, I have attached a updated COC for your records, Also please also proceed to test GW32

Regards

**Jacob Muller**  
Graduate Environmental Scientist  
D +61 3 9653 2616  
[Jacob.Muller@aecom.com](mailto:Jacob.Muller@aecom.com)

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---

**From:** Shirley LeCornu [<mailto:shirley.lecornu@alsglobal.com>]  
**Sent:** Monday, 31 July 2017 9:43 AM  
**To:** Muller, Jacob; Melbourne Enviro Services  
**Subject:** RE: Fishermens Bend EM1709371 & EM1709192

Hi Jacob

I will organise for the work orders to be amended and analysis added.

Analysis added will be appropriate to the bottles received: There will be some holding time breaches. Please scrutinise your SRN carefully and let me know if any changes are required.

Thanks

Shirley

**Shirley LeCornu**  
Client Services Officer – Springvale  
Environmental



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[Shirley.lecornu@alsglobal.com](mailto:Shirley.lecornu@alsglobal.com)  
2-4 Westall Rd

## CERTIFICATE OF ANALYSIS

**Work Order** : **EM1709231**  
**Client** : **AECOM Australia Pty Ltd**  
**Contact** : **MS AVERYLL COYNE**  
**Address** : **COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET  
MELBOURNE VIC, AUSTRALIA 3004**  
**Telephone** : **+61 03 9653 1234**  
**Project** : **60537182**  
**Order number** : **task 3.2**  
**C-O-C number** : **----**  
**Sampler** : **BH, BP, JM**  
**Site** : **----**  
**Quote number** : **ME/199/16**  
**No. of samples received** : **16**  
**No. of samples analysed** : **14**

**Page** : 1 of 25  
**Laboratory** : Environmental Division Melbourne  
**Contact** : Carol Walsh  
**Address** : 4 Westall Rd Springvale VIC Australia 3171  
**Telephone** : +61-3-8549 9608  
**Date Samples Received** : 14-Jul-2017 10:05  
**Date Analysis Commenced** : 14-Jul-2017  
**Issue Date** : 24-Jul-2017 09:31



Accreditation No. 825  
Accredited for compliance with  
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

**Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.**

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	Senior Semivolatile Instrument Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC



## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
LOR = Limit of reporting  
^ = This result is computed from individual analyte detections at or above the level of reporting  
∅ = ALS is not NATA accredited for these tests.  
~ = Indicates an estimated value.

- EP074-WF: Minor cis-1,2-dichloroethylene has been confirmed for sample EM1709231\_11 by re-analysis.
- It is recognised that total zinc is less than dissolved zinc for samples #7. However, the difference is within experimental variation of the methods.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- ED045G: The presence of thiocyanate can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW43_13/7/17	GW46_13/7/17	GW67_13/7/17	GW76_13/7/17	GW77_13/7/17
Client sampling date / time				13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709231-003	EM1709231-004	EM1709231-005	EM1709231-006	EM1709231-007	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.74	7.40	7.60	7.54	7.54	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	965	1100	1060	1330	440	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	284	308	490	442	243	
Total Alkalinity as CaCO3	----	1	mg/L	284	308	490	442	243	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	196	434	180	136	101	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	----	----	372	----	----	
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	365	655	----	206	137	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	121	40	147	321	21	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	133	174	146	105	87	
Magnesium	7439-95-4	1	mg/L	30	46	49	32	18	
Sodium	7440-23-5	1	mg/L	84	76	154	235	26	
Potassium	7440-09-7	1	mg/L	18	14	16	21	4	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.01	0.01	0.02	0.01	<0.01	
Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.005	0.002	0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.006	0.004	0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Zinc	7440-66-6	0.005	mg/L	0.057	0.054	0.116	0.057	0.045	
Manganese	7439-96-5	0.001	mg/L	0.152	0.288	0.532	0.141	0.109	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	2.20	3.44	4.32	1.43	1.23	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	1.58	15.3	3.42	25.4	2.21	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW43_13/7/17	GW46_13/7/17	GW67_13/7/17	GW76_13/7/17	GW77_13/7/17
Client sampling date / time				13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709231-003	EM1709231-004	EM1709231-005	EM1709231-006	EM1709231-007	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Arsenic	7440-38-2	0.001	mg/L	0.006	0.030	0.011	0.033	0.005	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0004	0.0020	0.0012	0.0002	
Chromium	7440-47-3	0.001	mg/L	0.005	0.041	0.012	0.071	0.006	
Copper	7440-50-8	0.001	mg/L	0.005	0.042	0.008	0.026	0.004	
Nickel	7440-02-0	0.001	mg/L	0.002	0.034	0.010	0.027	0.002	
Lead	7439-92-1	0.001	mg/L	0.001	0.015	0.003	0.028	0.007	
Zinc	7440-66-6	0.005	mg/L	0.095	0.183	0.187	0.427	0.069	
Manganese	7439-96-5	0.001	mg/L	0.176	0.376	0.630	0.266	0.154	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	6.41	30.6	12.7	40.3	6.73	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.4	0.4	0.2	0.2	<0.1	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	0.92	1.70	1.24	2.51	0.14	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	0.05	<0.01	<0.01	0.01	<0.01	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	0.03	0.01	<0.01	1.90	0.02	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	0.08	0.01	<0.01	1.91	0.02	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.03	<0.01	<0.01	0.05	<0.01	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	13.2	16.3	17.7	20.7	7.55	
Total Cations	----	0.01	meq/L	13.2	16.1	18.4	18.6	7.06	
Ionic Balance	----	0.01	%	0.20	0.57	2.05	5.30	3.38	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	5	10	13	13	4	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW43_13/7/17	GW46_13/7/17	GW67_13/7/17	GW76_13/7/17	GW77_13/7/17
Client sampling date / time				13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709231-003	EM1709231-004	EM1709231-005	EM1709231-006	EM1709231-007	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	1	µg/L	<1	<1	<1	<1	<1	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	<1	<1	<1	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	<1	<1	<1	
Styrene	100-42-5	1	µg/L	<1	<1	<1	<1	<1	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	<1	<1	<1	
Isopropylbenzene	98-82-8	1	µg/L	<1	<1	<1	<1	<1	
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	<1	<1	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	<1	<1	<1	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	<1	<1	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	<1	<1	<1	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	<1	<1	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	<1	<1	<1	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	60	10	<10	30	30	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	<10	<10	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	<10	<10	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	<10	<10	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	<10	<10	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	<10	<10	<10	
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	<10	
Vinyl chloride	75-01-4	10	µg/L	<10.0	42.2	<10.0	<10.0	<10.0	
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	<10	
Chloroethane	75-00-3	10	µg/L	<10	<10	<10	<10	<10	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW43_13/7/17	GW46_13/7/17	GW67_13/7/17	GW76_13/7/17	GW77_13/7/17
Client sampling date / time				13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709231-003	EM1709231-004	EM1709231-005	EM1709231-006	EM1709231-007	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	<10	
1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	<1	
Iodomethane	74-88-4	1	µg/L	<1	<1	<1	<1	<1	
Methylene chloride	75-09-2	4	µg/L	<4	<4	<4	<4	<4	
trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	<1	<1	<1	<1	
1.1-Dichloroethane	75-34-3	1	µg/L	<1	8	<1	<1	<1	
cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	14	24	<1	<1	
1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	<1	
1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	<1	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	<1	
1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	<1	
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	<1	
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	<1	
1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	<1	
1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	<1	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	<1	
1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	<1	
trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	<1	
cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	<1	<1	<1	
1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	<1	
1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	<1	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	<1	<1	<1	
1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	<1	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	2	<1	<1	<1	
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	<1	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	<1	<1	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	<1	
1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	<1	<1	<1	
1.4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
1.2-Dichlorobenzene	95-50-1	1	µg/L	<1	7	<1	<1	<1	
1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	<1	<1	<1	
1.2.3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	<1	<1	<1	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW43_13/7/17	GW46_13/7/17	GW67_13/7/17	GW76_13/7/17	GW77_13/7/17
Client sampling date / time				13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709231-003	EM1709231-004	EM1709231-005	EM1709231-006	EM1709231-007	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes</b>									
Chloroform	67-66-3	1	µg/L	<1	<1	<1	<1	<1	
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	<1	<1	<1	
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	<1	
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	<b>340</b>	<100	<b>230</b>	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<b>80</b>	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<b>340</b>	<50	<b>310</b>	<50	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<b>20</b>	<20	<20	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW43_13/7/17	GW46_13/7/17	GW67_13/7/17	GW76_13/7/17	GW77_13/7/17
Client sampling date / time				13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709231-003	EM1709231-004	EM1709231-005	EM1709231-006	EM1709231-007	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	340	100	270	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	340	100	270	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	----	<0.02	----	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	----	<0.02	----	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	----	<0.02	----	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	----	<0.02	----	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	----	0.08	----	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	----	<0.02	----	----	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	----	<0.1	----	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	----	<0.02	----	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	----	<0.02	----	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	----	<0.02	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW43_13/7/17	GW46_13/7/17	GW67_13/7/17	GW76_13/7/17	GW77_13/7/17
Client sampling date / time				13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709231-003	EM1709231-004	EM1709231-005	EM1709231-006	EM1709231-007	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	----	<0.01	----	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	----	<0.02	----	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	----	<0.02	----	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	----	<0.02	----	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	----	<0.02	----	----	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	----	----	<0.02	----	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	----	<0.05	----	----	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	----	<0.02	----	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	----	<0.05	----	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	----	<0.05	----	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	----	----	<0.05	----	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	----	<0.05	----	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	----	<0.02	----	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	----	<0.02	----	----	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	----	<0.05	----	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	----	<0.05	----	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	----	<0.05	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW43_13/7/17	GW46_13/7/17	GW67_13/7/17	GW76_13/7/17	GW77_13/7/17
Client sampling date / time				13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709231-003	EM1709231-004	EM1709231-005	EM1709231-006	EM1709231-007	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	----	<0.05	----	----	
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	----	----	0.08	----	----	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	----	0.08	----	----	
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	----	0.08	----	----	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	97.4	101	103	98.7	93.4	
Toluene-D8	2037-26-5	1	%	103	105	108	106	96.1	
4-Bromofluorobenzene	460-00-4	1	%	99.1	102	103	101	95.7	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	23.3	24.2	23.3	24.3	24.6	
2-Chlorophenol-D4	93951-73-6	1	%	70.4	73.8	73.8	73.6	70.9	
2,4,6-Tribromophenol	118-79-6	1	%	68.3	82.4	79.1	87.9	76.3	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	78.1	78.4	78.6	76.2	76.9	
Anthracene-d10	1719-06-8	1	%	82.7	79.7	84.1	84.3	85.6	
4-Terphenyl-d14	1718-51-0	1	%	84.5	82.6	84.5	83.8	84.3	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	107	112	113	109	102	
Toluene-D8	2037-26-5	2	%	100	102	105	103	93.3	
4-Bromofluorobenzene	460-00-4	2	%	105	106	109	104	99.4	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	----	----	98.0	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW82_13/7/17	GW42AC_13/7/17	GW70_13/7/17	GW73_13/7/17	GMW02_13/7/17
Client sampling date / time				13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709231-008	EM1709231-009	EM1709231-010	EM1709231-011	EM1709231-012	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.56	6.05	6.66	7.58	7.44	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	2080	197	474	881	1120	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	267	8	156	633	376	
Total Alkalinity as CaCO3	----	1	mg/L	267	8	156	633	376	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	450	31	59	150	20	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	750	18	326	224	27	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	720	17	33	43	491	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	243	11	46	141	80	
Magnesium	7439-95-4	1	mg/L	79	5	10	58	49	
Sodium	7440-23-5	1	mg/L	392	13	40	110	245	
Potassium	7440-09-7	1	mg/L	29	2	3	13	18	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	<0.01	0.85	0.07	0.02	0.01	
Arsenic	7440-38-2	0.001	mg/L	0.002	0.012	0.007	0.005	0.008	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	0.007	0.001	0.001	0.002	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Nickel	7440-02-0	0.001	mg/L	0.010	0.010	0.010	0.025	0.013	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Zinc	7440-66-6	0.005	mg/L	0.036	0.008	0.013	0.013	0.020	
Manganese	7439-96-5	0.001	mg/L	0.207	0.140	0.016	0.147	0.118	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	2.25	1.21	1.93	2.58	4.66	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	1.21	3.10	61.4	6.10	21.0	
Arsenic	7440-38-2	0.001	mg/L	0.005	0.015	0.100	0.014	0.072	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW82_13/7/17	GW42AC_13/7/17	GW70_13/7/17	GW73_13/7/17	GMW02_13/7/17
Client sampling date / time				13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709231-008	EM1709231-009	EM1709231-010	EM1709231-011	EM1709231-012	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	0.0002	0.0002	
Chromium	7440-47-3	0.001	mg/L	0.003	0.012	0.151	0.015	0.052	
Copper	7440-50-8	0.001	mg/L	0.003	<0.001	0.030	0.020	0.070	
Nickel	7440-02-0	0.001	mg/L	0.019	0.010	0.097	0.040	0.054	
Lead	7439-92-1	0.001	mg/L	0.001	<0.001	0.076	0.024	0.175	
Zinc	7440-66-6	0.005	mg/L	0.040	0.007	0.165	0.076	0.436	
Manganese	7439-96-5	0.001	mg/L	0.238	0.168	0.220	0.197	0.276	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	6.31	2.36	80.0	13.0	44.7	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.2	0.2	0.2	0.1	<0.1	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	0.49	0.10	0.31	2.82	5.05	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	0.02	<0.01	<0.01	<0.01	<0.01	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	0.02	0.02	<0.01	<0.01	<0.01	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	0.04	0.02	<0.01	<0.01	<0.01	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.02	<0.01	<0.01	0.04	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	35.0	1.28	5.28	17.0	21.8	
Total Cations	----	0.01	meq/L	36.4	1.58	4.94	16.9	19.1	
Ionic Balance	----	0.01	%	1.97	----	3.34	0.17	6.44	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	6	24	9	13	16	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	1	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW82_13/7/17	GW42AC_13/7/17	GW70_13/7/17	GW73_13/7/17	GMW02_13/7/17
Client sampling date / time				13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709231-008	EM1709231-009	EM1709231-010	EM1709231-011	EM1709231-012	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	<1	<1	<1	<1	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	<1	<1	<1	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	<1	<1	<1	
Styrene	100-42-5	1	µg/L	<1	<1	<1	<1	<1	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	<1	<1	<1	
Isopropylbenzene	98-82-8	1	µg/L	<1	<1	<1	<1	<1	
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	<1	<1	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	<1	<1	<1	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	<1	<1	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	<1	<1	<1	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	<1	<1	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	<1	<1	<1	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	10	<10	<10	<10	<10	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	<10	<10	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	<10	<10	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	<10	<10	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	<10	<10	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	<10	<10	<10	
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	<10	
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	<10.0	<10.0	91.3	
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	<10	
Chloroethane	75-00-3	10	µg/L	<10	<10	<10	<10	<10	
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	<10	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW82_13/7/17	GW42AC_13/7/17	GW70_13/7/17	GW73_13/7/17	GMW02_13/7/17
Client sampling date / time				13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709231-008	EM1709231-009	EM1709231-010	EM1709231-011	EM1709231-012	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	<1	
Iodomethane	74-88-4	1	µg/L	<1	<1	<1	<1	<1	
Methylene chloride	75-09-2	4	µg/L	<4	<4	<4	<4	<4	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	<1	<1	6	
1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	<1	<1	<1	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	2	<1	<1	1	81	
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	<1	
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	<1	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	<1	
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	<1	
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	<1	
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	<1	
1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	<1	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	<1	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	<1	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	<1	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	<1	<1	<1	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	<1	
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	<1	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	<1	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	<1	<1	<1	<1	
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	<1	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	<1	<1	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	<1	
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	<1	<1	<1	
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	<1	<1	<1	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	<1	<1	<1	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074G: Trihalomethanes</b>									



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW82_13/7/17	GW42AC_13/7/17	GW70_13/7/17	GW73_13/7/17	GMW02_13/7/17
Client sampling date / time				13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709231-008	EM1709231-009	EM1709231-010	EM1709231-011	EM1709231-012	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	<1	<1	<1	<1	<1	
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	<1	<1	<1	
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	<1	
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<b>50</b>	
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<b>50</b>	
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<b>280</b>	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<b>330</b>	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<b>50</b>	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW82_13/7/17	GW42AC_13/7/17	GW70_13/7/17	GW73_13/7/17	GMW02_13/7/17
Client sampling date / time				13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709231-008	EM1709231-009	EM1709231-010	EM1709231-011	EM1709231-012	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<b>50</b>	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<b>250</b>	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<b>250</b>	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<b>1</b>	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<b>1</b>	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	<0.02	----	<0.02	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	<0.02	----	<0.02	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	<0.02	----	<0.02	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	<0.02	----	<0.02	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	<b>0.68</b>	----	<0.01	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	<0.02	----	<0.02	----	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	<0.1	----	<0.1	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	<0.02	----	<0.02	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	<0.02	----	<0.02	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	<0.02	----	<0.02	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW82_13/7/17	GW42AC_13/7/17	GW70_13/7/17	GW73_13/7/17	GMW02_13/7/17
Client sampling date / time				13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709231-008	EM1709231-009	EM1709231-010	EM1709231-011	EM1709231-012	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	<0.01	----	<0.01	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	<0.02	----	<0.02	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	<0.02	----	<0.02	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	<0.02	----	<0.02	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	<0.02	----	<0.02	----	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	----	<0.02	----	<0.02	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	<0.05	----	<0.05	----	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	<0.02	----	<0.02	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	<0.05	----	<0.05	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	<0.05	----	<0.05	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	----	<0.05	----	<0.05	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	<0.05	----	<0.05	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	<0.02	----	<0.02	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	<0.02	----	<0.02	----	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	<0.05	----	<0.05	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	<0.05	----	<0.05	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	<0.05	----	<0.05	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW82_13/7/17	GW42AC_13/7/17	GW70_13/7/17	GW73_13/7/17	GMW02_13/7/17
Client sampling date / time				13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709231-008	EM1709231-009	EM1709231-010	EM1709231-011	EM1709231-012	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	<0.05	----	<0.05	----	
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	----	0.68	----	<0.01	----	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	0.68	----	<0.01	----	
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	0.68	----	<0.01	----	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	92.7	99.8	96.7	97.7	101	
Toluene-D8	2037-26-5	1	%	99.0	105	99.9	104	108	
4-Bromofluorobenzene	460-00-4	1	%	93.3	100.0	99.1	96.1	101	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	24.7	26.3	26.5	28.2	27.8	
2-Chlorophenol-D4	93951-73-6	1	%	74.0	75.3	74.6	77.2	76.2	
2,4,6-Tribromophenol	118-79-6	1	%	67.5	67.0	67.1	71.1	79.8	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	75.0	70.2	75.9	80.4	77.2	
Anthracene-d10	1719-06-8	1	%	79.7	72.4	77.9	82.6	78.8	
4-Terphenyl-d14	1718-51-0	1	%	80.5	75.2	79.4	81.7	79.0	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	102	110	107	107	112	
Toluene-D8	2037-26-5	2	%	96.2	102	97.0	101	105	
4-Bromofluorobenzene	460-00-4	2	%	98.6	105	102	102	106	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	----	102	----	97.0	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Client sample ID		GW57_13/7/17	QC106_13/7/17	QC107_13/7/17	QC108_13/7/17	----
Client sampling date / time				13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	----
Compound	CAS Number	LOR	Unit	EM1709231-013	EM1709231-014	EM1709231-015	EM1709231-016	-----
				Result	Result	Result	Result	----
<b>EA005P: pH by PC Titrator</b>								
pH Value	----	0.01	pH Unit	7.66	----	----	----	----
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>								
Total Dissolved Solids @180°C	----	10	mg/L	763	----	----	----	----
<b>ED037P: Alkalinity by PC Titrator</b>								
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	343	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	343	----	----	----	----
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>								
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	155	----	----	----	----
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>								
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	237	----	----	----	----
<b>ED045G: Chloride by Discrete Analyser</b>								
Chloride	16887-00-6	1	mg/L	145	----	----	----	----
<b>ED093F: Dissolved Major Cations</b>								
Calcium	7440-70-2	1	mg/L	57	----	----	----	----
Magnesium	7439-95-4	1	mg/L	7	----	----	----	----
Sodium	7440-23-5	1	mg/L	173	----	----	----	----
Potassium	7440-09-7	1	mg/L	84	----	----	----	----
<b>EG020F: Dissolved Metals by ICP-MS</b>								
Aluminium	7429-90-5	0.01	mg/L	0.02	----	<0.01	----	----
Arsenic	7440-38-2	0.001	mg/L	0.003	----	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	<0.001	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	----	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L	0.025	----	<0.001	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	<0.001	----	----
Zinc	7440-66-6	0.005	mg/L	0.047	----	<0.005	----	----
Manganese	7439-96-5	0.001	mg/L	0.009	----	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	----	<0.01	----	----
Iron	7439-89-6	0.05	mg/L	0.23	----	<0.05	----	----
<b>EG020T: Total Metals by ICP-MS</b>								
Aluminium	7429-90-5	0.01	mg/L	0.37	----	<0.01	----	----
Arsenic	7440-38-2	0.001	mg/L	0.004	----	<0.001	----	----





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW57_13/7/17	QC106_13/7/17	QC107_13/7/17	QC108_13/7/17	----
Client sampling date / time				13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	----	
Compound	CAS Number	LOR	Unit	EM1709231-013	EM1709231-014	EM1709231-015	EM1709231-016	-----	
				Result	Result	Result	Result	----	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	<0.0001	----	----	
Chromium	7440-47-3	0.001	mg/L	<b>0.002</b>	----	<0.001	----	----	
Copper	7440-50-8	0.001	mg/L	<0.001	----	<0.001	----	----	
Nickel	7440-02-0	0.001	mg/L	<b>0.028</b>	----	<0.001	----	----	
Lead	7439-92-1	0.001	mg/L	<b>0.001</b>	----	<0.001	----	----	
Zinc	7440-66-6	0.005	mg/L	<b>0.124</b>	----	<0.005	----	----	
Manganese	7439-96-5	0.001	mg/L	<b>0.013</b>	----	----	----	----	
Selenium	7782-49-2	0.01	mg/L	<0.01	----	<0.01	----	----	
Iron	7439-89-6	0.05	mg/L	<b>0.61</b>	----	<0.05	----	----	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	<0.0001	----	----	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	<0.0001	----	----	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	<0.1	----	----	----	----	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	<b>1.88</b>	----	----	----	----	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	----	----	----	----	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	----	----	----	----	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	----	----	----	----	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<b>0.11</b>	----	----	----	----	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	<b>14.2</b>	----	----	----	----	
Total Cations	----	0.01	meq/L	<b>13.1</b>	----	----	----	----	
Ionic Balance	----	0.01	%	<b>3.95</b>	----	----	----	----	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	<b>8</b>	----	----	----	----	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	----	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW57_13/7/17	QC106_13/7/17	QC107_13/7/17	QC108_13/7/17	----
Client sampling date / time				13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	----	
Compound	CAS Number	LOR	Unit	EM1709231-013	EM1709231-014	EM1709231-015	EM1709231-016	-----	
				Result	Result	Result	Result	----	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	----	----	----	----	----
Ethylbenzene	100-41-4	1	µg/L	<1	----	----	----	----	----
meta- & para-Xylene	108-38-3	106-42-3	1	µg/L	<1	----	----	----	----
Styrene	100-42-5	1	µg/L	<1	----	----	----	----	----
ortho-Xylene	95-47-6	1	µg/L	<1	----	----	----	----	----
Isopropylbenzene	98-82-8	1	µg/L	<1	----	----	----	----	----
n-Propylbenzene	103-65-1	1	µg/L	<1	----	----	----	----	----
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	----	----	----	----	----
sec-Butylbenzene	135-98-8	1	µg/L	<1	----	----	----	----	----
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	----	----	----	----	----
tert-Butylbenzene	98-06-6	1	µg/L	<1	----	----	----	----	----
p-Isopropyltoluene	99-87-6	1	µg/L	<1	----	----	----	----	----
n-Butylbenzene	104-51-8	1	µg/L	<1	----	----	----	----	----
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	30	----	----	----	----	----
Vinyl Acetate	108-05-4	10	µg/L	<10	----	----	----	----	----
2-Butanone (MEK)	78-93-3	10	µg/L	<10	----	----	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	----	----	----	----	----
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	----	----	----	----	----
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	----	----	----	----	----
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	----	----	----	----	----
1,2-Dichloropropane	78-87-5	1	µg/L	<1	----	----	----	----	----
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	----	----	----	----	----
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	----	----	----	----	----
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	----	----	----	----	----
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	----	----	----	----	----
Chloromethane	74-87-3	10	µg/L	<10	----	----	----	----	----
Vinyl chloride	75-01-4	10	µg/L	<10.0	----	----	----	----	----
Bromomethane	74-83-9	10	µg/L	<10	----	----	----	----	----
Chloroethane	75-00-3	10	µg/L	<10	----	----	----	----	----
Trichlorofluoromethane	75-69-4	10	µg/L	<10	----	----	----	----	----



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW57_13/7/17	QC106_13/7/17	QC107_13/7/17	QC108_13/7/17	----
Client sampling date / time					13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	----
Compound	CAS Number	LOR	Unit	EM1709231-013	EM1709231-014	EM1709231-015	EM1709231-016	-----	-----
				Result	Result	Result	Result	----	----
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	----	----	----	----	----
Iodomethane	74-88-4	1	µg/L	<1	----	----	----	----	----
Methylene chloride	75-09-2	4	µg/L	<4	----	----	----	----	----
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	----	----	----	----	----
1,1-Dichloroethane	75-34-3	1	µg/L	<1	----	----	----	----	----
cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	----	----	----	----	----
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	----	----	----	----	----
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	----	----	----	----	----
Carbon Tetrachloride	56-23-5	1	µg/L	<1	----	----	----	----	----
1,2-Dichloroethane	107-06-2	1	µg/L	<1	----	----	----	----	----
Trichloroethene	79-01-6	1	µg/L	<1	----	----	----	----	----
Dibromomethane	74-95-3	1	µg/L	<1	----	----	----	----	----
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	----	----	----	----	----
1,3-Dichloropropane	142-28-9	1	µg/L	<1	----	----	----	----	----
Tetrachloroethene	127-18-4	1	µg/L	<1	----	----	----	----	----
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	----	----	----	----	----
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	----	----	----	----	----
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	----	----	----	----	----
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	----	----	----	----	----
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	----	----	----	----	----
Pentachloroethane	76-01-7	1	µg/L	<1	----	----	----	----	----
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	----	----	----	----	----
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	----	----	----	----	----
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	----	----	----	----	----
Bromobenzene	108-86-1	1	µg/L	<1	----	----	----	----	----
2-Chlorotoluene	95-49-8	1	µg/L	<1	----	----	----	----	----
4-Chlorotoluene	106-43-4	1	µg/L	<1	----	----	----	----	----
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	----	----	----	----	----
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	----	----	----	----	----
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	----	----	----	----	----
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	----	----	----	----	----
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	----	----	----	----	----
<b>EP074G: Trihalomethanes</b>									



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW57_13/7/17	QC106_13/7/17	QC107_13/7/17	QC108_13/7/17	----
Client sampling date / time				13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	----	
Compound	CAS Number	LOR	Unit	EM1709231-013	EM1709231-014	EM1709231-015	EM1709231-016	-----	
				Result	Result	Result	Result	----	
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	<1	----	----	----	----	
Bromodichloromethane	75-27-4	1	µg/L	<1	----	----	----	----	
Dibromochloromethane	124-48-1	1	µg/L	<1	----	----	----	----	
Bromoform	75-25-2	1	µg/L	<1	----	----	----	----	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	----	----	----	----	
Acenaphthylene	208-96-8	1	µg/L	<1.0	----	----	----	----	
Acenaphthene	83-32-9	1	µg/L	<1.0	----	----	----	----	
Fluorene	86-73-7	1	µg/L	<1.0	----	----	----	----	
Phenanthrene	85-01-8	1	µg/L	<1.0	----	----	----	----	
Anthracene	120-12-7	1	µg/L	<1.0	----	----	----	----	
Fluoranthene	206-44-0	1	µg/L	<1.0	----	----	----	----	
Pyrene	129-00-0	1	µg/L	<1.0	----	----	----	----	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	----	----	----	----	
Chrysene	218-01-9	1	µg/L	<1.0	----	----	----	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	----	----	----	----	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	----	----	----	----	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	----	----	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	----	----	----	----	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	----	----	----	----	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	----	----	----	----	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	----	----	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	----	----	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	----	
C10 - C14 Fraction	----	50	µg/L	<50	----	<50	----	----	
C15 - C28 Fraction	----	100	µg/L	<100	----	<100	----	----	
C29 - C36 Fraction	----	50	µg/L	<50	----	<50	----	----	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	<50	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW57_13/7/17	QC106_13/7/17	QC107_13/7/17	QC108_13/7/17	----
Client sampling date / time				13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	13-Jul-2017 00:00	----	
Compound	CAS Number	LOR	Unit	EM1709231-013	EM1709231-014	EM1709231-015	EM1709231-016	-----	
				Result	Result	Result	Result	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	----	
>C10 - C16 Fraction	----	100	µg/L	<100	----	<100	----	----	
>C16 - C34 Fraction	----	100	µg/L	<100	----	<100	----	----	
>C34 - C40 Fraction	----	100	µg/L	<100	----	<100	----	----	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	<100	----	----	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	<100	----	----	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	----	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	----	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	----	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	----	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	----	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	----	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	----	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	----	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	95.8	----	----	----	----	
Toluene-D8	2037-26-5	1	%	99.1	----	----	----	----	
4-Bromofluorobenzene	460-00-4	1	%	95.3	----	----	----	----	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	29.5	----	----	----	----	
2-Chlorophenol-D4	93951-73-6	1	%	82.3	----	----	----	----	
2,4,6-Tribromophenol	118-79-6	1	%	78.4	----	----	----	----	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	87.3	----	----	----	----	
Anthracene-d10	1719-06-8	1	%	91.3	----	----	----	----	
4-Terphenyl-d14	1718-51-0	1	%	93.2	----	----	----	----	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	105	107	106	107	----	
Toluene-D8	2037-26-5	2	%	96.0	98.0	98.5	97.4	----	
4-Bromofluorobenzene	460-00-4	2	%	101	102	101	100	----	



## Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	72	120
Toluene-D8	2037-26-5	70	130
4-Bromofluorobenzene	460-00-4	70	128
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	10	46
2-Chlorophenol-D4	93951-73-6	23	104
2,4,6-Tribromophenol	118-79-6	28	130
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129
<b>EP231S: PFAS Surrogate</b>			
13C4-PFOS	----	60	130

## QUALITY CONTROL REPORT

<b>Work Order</b>	<b>: EM1709231</b>	<b>Page</b>	: 1 of 22
<b>Client</b>	<b>: AECOM Australia Pty Ltd</b>	<b>Laboratory</b>	: Environmental Division Melbourne
<b>Contact</b>	<b>: MS AVERYLL COYNE</b>	<b>Contact</b>	: Carol Walsh
<b>Address</b>	<b>: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004</b>	<b>Address</b>	: 4 Westall Rd Springvale VIC Australia 3171
<b>Telephone</b>	<b>: +61 03 9653 1234</b>	<b>Telephone</b>	: +61-3-8549 9608
<b>Project</b>	<b>: 60537182</b>	<b>Date Samples Received</b>	: 14-Jul-2017
<b>Order number</b>	<b>: task 3.2</b>	<b>Date Analysis Commenced</b>	: 14-Jul-2017
<b>C-O-C number</b>	<b>: ----</b>	<b>Issue Date</b>	: 24-Jul-2017
<b>Sampler</b>	<b>: BH, BP, JM</b>		
<b>Site</b>	<b>: ----</b>		
<b>Quote number</b>	<b>: ME/199/16</b>		
<b>No. of samples received</b>	<b>: 16</b>		
<b>No. of samples analysed</b>	<b>: 14</b>		



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nancy Wang	Senior Semivolatile Instrument Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC



## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :  
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot  
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
 LOR = Limit of reporting  
 RPD = Relative Percentage Difference  
 # = Indicates failed QC

## Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA005P: pH by PC Titrator (QC Lot: 999223)</b>									
EM1709231-013	GW57_13/7/17	EA005-P: pH Value	----	0.01	pH Unit	7.66	7.60	0.786	0% - 20%
EM1709231-010	GW70_13/7/17	EA005-P: pH Value	----	0.01	pH Unit	6.66	6.68	0.300	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 999166)</b>									
EM1709227-009	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	16400	17600	6.77	0% - 20%
EM1709227-018	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	13600	14000	2.58	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 999167)</b>									
EM1709231-012	GMW02_13/7/17	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	1120	1080	3.45	0% - 20%
EM1709250-001	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	488	538	9.64	0% - 20%
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 999224)</b>									
EM1709231-013	GW57_13/7/17	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	343	343	0.00	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	343	343	0.00	0% - 20%
EM1709231-010	GW70_13/7/17	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	156	160	2.25	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	156	160	2.25	0% - 20%
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 997356)</b>									
EM1709231-008	GW82_13/7/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	450	516	13.6	0% - 20%
EM1709231-003	GW43_13/7/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	196	199	1.11	0% - 20%
<b>ED043: Total Oxidised Sulfur as SO4 2- (QC Lot: 999497)</b>									
EM1709192-001	Anonymous	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	1030	1070	3.75	0% - 20%
EM1709192-012	Anonymous	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	15	13	13.4	0% - 50%
<b>ED043: Total Oxidised Sulfur as SO4 2- (QC Lot: 999499)</b>									





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>ED043: Total Oxidised Sulfur as SO4 2- (QC Lot: 999499) - continued</b>									
EM1709231-004	GW46_13/7/17	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	655	694	5.84	0% - 20%
EM1709231-013	GW57_13/7/17	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	237	234	1.05	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 997357)</b>									
EM1709231-008	GW82_13/7/17	ED045G: Chloride	16887-00-6	1	mg/L	720	721	0.00	0% - 20%
EM1709231-003	GW43_13/7/17	ED045G: Chloride	16887-00-6	1	mg/L	121	114	6.60	0% - 20%
<b>ED093F: Dissolved Major Cations (QC Lot: 997190)</b>									
EM1709227-002	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	28	28	0.00	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	412	409	0.770	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	3800	3780	0.625	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	78	78	0.00	0% - 50%
EM1709227-010	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	44	44	0.00	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	553	555	0.491	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	4460	4500	0.818	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	90	90	0.00	0% - 50%
<b>ED093F: Dissolved Major Cations (QC Lot: 997192)</b>									
EM1709231-005	GW67_13/7/17	ED093F: Calcium	7440-70-2	1	mg/L	146	141	3.76	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	49	48	3.13	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	154	150	2.44	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	16	15	0.00	0% - 50%
EM1709231-013	GW57_13/7/17	ED093F: Calcium	7440-70-2	1	mg/L	57	56	0.00	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	7	7	0.00	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	173	170	1.83	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	84	83	1.38	0% - 20%
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 997191)</b>									
EM1709231-003	GW43_13/7/17	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.152	0.158	3.66	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.057	0.061	7.04	0% - 50%
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.01	<0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	2.20	2.28	3.39	0% - 20%
EM1709231-012	GMW02_13/7/17	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.008	0.008	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 997191) - continued</b>									
EM1709231-012	GMW02_13/7/17	EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.118	0.121	2.45	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.013	0.014	0.00	0% - 50%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.020	0.022	4.91	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.01	0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	4.66	4.81	3.14	0% - 20%
<b>EG020T: Total Metals by ICP-MS (QC Lot: 997181)</b>									
EM1709106-025	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.004	114	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.03	87.0	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.05	0.00	No Limit
EM1709206-002	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0006	0.0004	28.9	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.049	0.047	2.85	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.128	0.122	4.57	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.339	0.328	3.24	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.062	0.060	3.47	0% - 20%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	1.28	1.24	3.76	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.090	0.090	0.00	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.570	0.559	1.92	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	53.4	51.9	2.80	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	0.02	0.02	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	77.6	74.5	4.06	0% - 20%
<b>EG020T: Total Metals by ICP-MS (QC Lot: 997182)</b>									
EM1709231-010	GW70_13/7/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.100	0.089	11.0	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.151	0.139	8.42	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.030	0.026	10.8	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.076	0.068	10.6	0% - 20%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.220	0.204	7.75	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.097	0.086	12.4	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.165	0.155	6.18	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	61.4	56.5	8.27	0% - 20%



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020T: Total Metals by ICP-MS (QC Lot: 997182) - continued</b>									
EM1709231-010	GW70_13/7/17	EG020A-T: Selenium	7782-49-2	0.01	mg/L	0.01	<0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	80.0	75.4	5.92	0% - 20%
EM1709238-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0002	0.0002	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.014	0.013	7.22	0% - 50%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.010	<0.010	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.005	0.005	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.006	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.05	0.06	0.00	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.10	<0.10	0.00	No Limit
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 997189)</b>									
EM1709231-011	GW73_13/7/17	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709210-006	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1007147)</b>									
EM1709231-003	GW43_13/7/17	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709231-012	GMW02_13/7/17	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EK040P: Fluoride by PC Titrator (QC Lot: 999222)</b>									
EM1709201-002	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	<0.1	0.00	No Limit
EM1709231-010	GW70_13/7/17	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.2	0.2	0.00	No Limit
<b>EK055G: Ammonia as N by Discrete Analyser (QC Lot: 999273)</b>									
EM1709210-003	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.76	0.79	3.80	0% - 20%
EM1709231-008	GW82_13/7/17	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.49	0.44	10.8	0% - 20%
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 997355)</b>									
EM1709222-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EM1709231-003	GW43_13/7/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.05	0.05	0.00	No Limit
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 999272)</b>									
EM1709210-002	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	218	219	0.582	0% - 20%
EM1709231-003	GW43_13/7/17	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.08	0.06	16.1	No Limit
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 997354)</b>									
EM1709222-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.97	0.97	0.00	0% - 20%
EM1709231-008	GW82_13/7/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
<b>EP005: Total Organic Carbon (TOC) (QC Lot: 1007488)</b>									
EM1709231-003	GW43_13/7/17	EP005: Total Organic Carbon	----	1	mg/L	5	5	0.00	No Limit
EM1709231-012	GMW02_13/7/17	EP005: Total Organic Carbon	----	1	mg/L	16	17	7.19	0% - 50%
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 999810)</b>									



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 999810) - continued</b>									
EM1709231-003	GW43_13/7/17	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit
EM1709231-013	GW57_13/7/17	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 999810)</b>									
EM1709231-003	GW43_13/7/17	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	60	60	0.00	No Limit
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit
EM1709231-013	GW57_13/7/17	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	30	20	0.00	No Limit
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit





Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074B: Oxygenated Compounds (QC Lot: 999810) - continued</b>									
EM1709231-013	GW57_13/7/17	EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 999810)</b>									
EM1709231-003	GW43_13/7/17	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
EM1709231-013	GW57_13/7/17	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
<b>EP074D: Fumigants (QC Lot: 999810)</b>									
EM1709231-003	GW43_13/7/17	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
EM1709231-013	GW57_13/7/17	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 999810)</b>									
EM1709231-003	GW43_13/7/17	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 999810) - continued</b>									
EM1709231-003	GW43_13/7/17	EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit
EM1709231-013	GW57_13/7/17	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit		
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 999810)</b>									
EM1709231-003	GW43_13/7/17	EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 999810) - continued</b>										
EM1709231-003	GW43_13/7/17	EP074-WF: 1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.2.3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit	
EM1709231-013	GW57_13/7/17	EP074-WF: 1.4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit	
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit	
<b>EP074G: Trihalomethanes (QC Lot: 999810)</b>										
EM1709231-003	GW43_13/7/17	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit	
EM1709231-013	GW57_13/7/17	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit	
<b>EP074H: Naphthalene (QC Lot: 999810)</b>										
EM1709231-003	GW43_13/7/17	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
EM1709231-013	GW57_13/7/17	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 999809)</b>										
EM1709231-003	GW43_13/7/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit	
EM1709231-013	GW57_13/7/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 999809)</b>										
EM1709231-003	GW43_13/7/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
EM1709231-013	GW57_13/7/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080: BTEXN (QC Lot: 999809)</b>										
EM1709231-003	GW43_13/7/17	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)		
<b>EP080: BTEXN (QC Lot: 999809) - continued</b>											
EM1709231-013	GW57_13/7/17	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit		
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit		
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit		
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit		
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit		
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit		
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 1004281)</b>											
EM1709231-005	GW67_13/7/17	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.08	0.08	0.00	No Limit		
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
ES1717636-004	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit		
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 1004281)</b>											
EM1709231-005	GW67_13/7/17	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit		
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit		
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit		
		ES1717636-004	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
				EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
				EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9			0.02	µg/L	<0.02	<0.02	0.00	No Limit		
EP231X: Perfluorononanoic acid (PFNA)	375-95-1			0.02	µg/L	<0.02	<0.02	0.00	No Limit		
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2			0.02	µg/L	<0.02	<0.02	0.00	No Limit		
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8			0.02	µg/L	<0.02	<0.02	0.00	No Limit		
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1			0.02	µg/L	<0.02	<0.02	0.00	No Limit		





Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 1004281) - continued</b>									
ES1717636-004	Anonymous	EP231X: Perfluorotridecanoic acid (PFTTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
<b>EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 1004281)</b>									
EM1709231-005	GW67_13/7/17	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
ES1717636-004	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 1004281)</b>									
EM1709231-005	GW67_13/7/17	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
ES1717636-004	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit

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 Work Order : EM1709231  
 Client : AECOM Australia Pty Ltd  
 Project : 60537182



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 1004281) - continued</b>									
ES1717636-004	Anonymous	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231P: PFAS Sums (QC Lot: 1004281)</b>									
EM1709231-005	GW67_13/7/17	EP231X: Sum of PFAS	----	0.01	µg/L	0.08	0.08	0.00	No Limit
ES1717636-004	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit



## Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 999166)</b>									
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	99.2	95	105	
				<10	293 mg/L	102	95	105	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 999167)</b>									
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	99.5	95	105	
				<10	293 mg/L	98.2	95	105	
<b>ED037P: Alkalinity by PC Titrator (QCLot: 999224)</b>									
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	101	88	109	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 997356)</b>									
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	109	92	115	
				<1	100 mg/L	101	92	115	
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 999497)</b>									
ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	<1	500 mg/L	105	82	122	
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 999499)</b>									
ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	<1	500 mg/L	102	82	122	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 997357)</b>									
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	101	88	118	
				<1	1000 mg/L	99.6	88	118	
<b>ED093F: Dissolved Major Cations (QCLot: 997190)</b>									
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	103	93	110	
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	104	91	110	
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	100	90	109	
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	99.3	89	109	
<b>ED093F: Dissolved Major Cations (QCLot: 997192)</b>									
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	105	93	110	
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	106	91	110	
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	102	90	109	
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	102	89	109	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 997191)</b>									
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	99.7	93	105	
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	102	91	107	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	102	84	104	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	102	83	103	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	102	82	103	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 997191) - continued</b>									
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	99.3	83	105	
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	104	83	105	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	101	82	106	
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	104	82	109	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	101	85	109	
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	100	94	106	
<b>EG020T: Total Metals by ICP-MS (QCLot: 997181)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	96.2	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	104	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	92.4	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	102	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	99.1	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	95.2	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	99.9	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	98.6	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	94.0	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	100	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	108	80	120	
<b>EG020T: Total Metals by ICP-MS (QCLot: 997182)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	106	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	103	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	97.5	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	104	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	97.2	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	104	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	103	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	99.0	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	102	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	102	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	107	80	120	
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 997189)</b>									
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	94.1	81	114	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1007147)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	90.4	81	114	
<b>EK040P: Fluoride by PC Titrator (QCLot: 999222)</b>									
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	102	85	112	
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 999273)</b>									
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	102	80	115	





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 997355)</b>									
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	96.0	94	107	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 999272)</b>									
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	112	89	114	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 997354)</b>									
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	104	94	108	
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1007488)</b>									
EP005: Total Organic Carbon	----	1	mg/L	<1	100 mg/L	92.8	81	109	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 999810)</b>									
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	91.5	81	119	
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	97.9	84	117	
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	91.1	83	114	
EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	40 µg/L	91.1	81	116	
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	95.9	82	118	
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	93.8	85	115	
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	89.4	81	113	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	88.5	76	111	
EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	88.8	79	109	
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	87.1	77	111	
EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	89.2	79	108	
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	88.5	80	110	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	87.2	75	111	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	84.4	68	111	
<b>EP074B: Oxygenated Compounds (QCLot: 999810)</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	100.0	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	92.1	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	95.3	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	95.2	73	128	
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	99.6	75	129	
<b>EP074C: Sulfonated Compounds (QCLot: 999810)</b>									
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	86.4	64	119	
<b>EP074D: Fumigants (QCLot: 999810)</b>									
EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	87.9	74	117	
EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	90.8	83	118	
EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	89.0	74	109	
EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	90.1	70	109	
EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	95.4	81	116	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 999810)</b>									



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 999810) - continued</b>									
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	93.9	61	137	
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	93.8	66	137	
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	87.8	67	135	
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	80.4	52	128	
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	88.8	76	125	
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	86.5	74	123	
EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	88.3	75	120	
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	52.3	37	120	
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	20 µg/L	131	72	159	
EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	88.9	78	117	
EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	90.8	81	118	
EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	91.6	83	118	
EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	86.7	76	115	
EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	86.5	75	117	
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	82.3	72	111	
EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	94.4	81	120	
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	88.5	78	116	
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	94.6	79	116	
EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	95.9	85	119	
EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	93.9	85	119	
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	92.6	76	120	
EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	90.4	78	110	
EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	102	64	118	
EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	86.9	51	113	
EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	95.0	85	121	
EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	97.9	84	118	
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	83.0	64	109	
EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	87.9	65	115	
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	84.6	70	121	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 999810)</b>									
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	94.1	85	115	
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	83.3	82	116	
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	91.2	81	112	
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	89.6	80	110	
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	91.7	80	110	
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	91.2	80	112	
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	91.6	84	111	
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	90.2	70	114	
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	92.8	78	116	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP074G: Trihalomethanes (QCLot: 999810)</b>									
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	91.6	82	118	
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	88.2	75	112	
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	86.2	73	108	
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	84.1	68	107	
<b>EP074H: Naphthalene (QCLot: 999810)</b>									
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	94.9	80	116	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 999340)</b>									
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	86.4	39	110	
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	83.3	40	124	
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	89.8	47	117	
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	90.0	51	118	
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	95.0	53	119	
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	65.9	51	113	
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	93.2	59	123	
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	92.8	58	123	
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	88.4	52	126	
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	94.1	55	123	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	1	µg/L	<1.0	5 µg/L	92.0	52	131	
	205-82-3								
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	99.0	57	126	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	92.0	56	126	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	95.9	53	123	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	96.0	53	125	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	98.0	53	125	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 999339)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	78.1	53	123	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	78.7	57	133	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	74.9	55	141	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 999809)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	85.6	67	127	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 999339)</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	75.9	54	122	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	74.4	56	132	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	81.1	51	137	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 999809)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	86.2	65	125	
<b>EP080: BTEXN (QCLot: 999809)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	88.6	76	120	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP080: BTEXN (QCLot: 999809) - continued</b>									
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	94.5	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	88.1	72	124	
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	87.8	72	130	
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	90.2	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	97.8	71	129	
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 1004281)</b>									
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.5 µg/L	91.2	70	130	
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.5 µg/L	91.2	70	130	
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.5 µg/L	94.6	70	130	
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.5 µg/L	97.2	70	130	
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.5 µg/L	93.2	70	130	
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	107	70	130	
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 1004281)</b>									
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	2.5 µg/L	88.1	70	130	
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	92.4	70	130	
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	88.2	70	130	
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	88.6	70	130	
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	94.4	70	130	
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	94.0	70	130	
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	90.4	70	130	
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	94.2	70	130	
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	92.8	70	130	
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	82.0	70	130	
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	92.7	70	150	
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 1004281)</b>									
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	93.4	70	130	
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	97.8	70	150	
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	83.9	70	150	
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	1.25 µg/L	94.1	70	150	
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	96.6	70	150	
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	92.4	70	130	
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	95.0	70	130	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 1004281)</b>									
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.5 µg/L	87.6	70	130	





Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 1004281) - continued</b>									
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.5 µg/L	98.4	70	130	
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.5 µg/L	90.0	70	130	
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.5 µg/L	90.4	70	130	

### Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery(%) MS	Recovery Limits (%)	
						Low	High
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 997356)</b>							
EM1709231-004	GW46_13/7/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70	130
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 999497)</b>							
EM1709192-002	Anonymous	ED043: Total Oxidised Sulfur as SO4 2-	----	500 mg/L	130	70	130
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 999499)</b>							
EM1709231-005	GW67_13/7/17	ED043: Total Oxidised Sulfur as SO4 2-	----	500 mg/L	94.8	70	130
<b>ED045G: Chloride by Discrete Analyser (QCLot: 997357)</b>							
EM1709231-004	GW46_13/7/17	ED045G: Chloride	16887-00-6	400 mg/L	98.4	70	130
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 997191)</b>							
EM1709231-003	GW43_13/7/17	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	93.4	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	88.5	81	133
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	85.3	71	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	88.3	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	84.6	75	133
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	90.4	64	134
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	90.6	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	90.6	75	131
<b>EG020T: Total Metals by ICP-MS (QCLot: 997181)</b>							
EM1709106-025	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	103	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	97.2	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	101	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	101	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	102	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	97.8	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	104	80	118



Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EG020T: Total Metals by ICP-MS (QCLot: 997181) - continued</b>							
EM1709106-025	Anonymous	EG020A-T: Zinc	7440-66-6	1 mg/L	102	74	116
<b>EG020T: Total Metals by ICP-MS (QCLot: 997182)</b>							
EM1709231-010	GW70_13/7/17	EG020A-T: Arsenic	7440-38-2	1 mg/L	94.3	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	96.3	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	87.3	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	92.5	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	104	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	88.5	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	92.8	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	96.4	74	116
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 997189)</b>							
EM1709231-003	GW43_13/7/17	EG035F: Mercury	7439-97-6	0.01 mg/L	95.8	70	120
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1007147)</b>							
EM1709231-004	GW46_13/7/17	EG035T: Mercury	7439-97-6	0.01 mg/L	88.9	70	130
<b>EK040P: Fluoride by PC Titrator (QCLot: 999222)</b>							
EM1709201-003	Anonymous	EK040P: Fluoride	16984-48-8	5 mg/L	86.2	70	130
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 999273)</b>							
EM1709210-004	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	115	70	130
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 997355)</b>							
EM1709231-003	GW43_13/7/17	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	89.9	80	114
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 999272)</b>							
EM1709210-003	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	# Not Determined	70	130
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 997354)</b>							
EM1709231-003	GW43_13/7/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	96.9	79	123
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1007488)</b>							
EM1709231-004	GW46_13/7/17	EP005: Total Organic Carbon	----	100 mg/L	94.1	80	114
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 999810)</b>							
EM1709231-004	GW46_13/7/17	EP074-WF: Benzene	71-43-2	20 µg/L	77.4	76	128
		EP074-WF: Toluene	108-88-3	20 µg/L	80.0	72	132
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 999810)</b>							
EM1709231-004	GW46_13/7/17	EP074-WF: 1,1-Dichloroethene	75-35-4	20 µg/L	65.3	63	129
		EP074-WF: Trichloroethene	79-01-6	20 µg/L	64.2	64	126
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 999810)</b>							
EM1709231-004	GW46_13/7/17	EP074-WF: Chlorobenzene	108-90-7	20 µg/L	81.5	81	119



Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 999809)</b>							
EM1709231-004	GW46_13/7/17	EP080: C6 - C9 Fraction	----	280 µg/L	49.4	43	125
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 999809)</b>							
EM1709231-004	GW46_13/7/17	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	50.4	44	122
<b>EP080: BTEXN (QCLot: 999809)</b>							
EM1709231-004	GW46_13/7/17	EP080: Benzene	71-43-2	20 µg/L	74.6	68	130
		EP080: Toluene	108-88-3	20 µg/L	72.8	72	132
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 1004281)</b>							
EM1709231-005	GW67_13/7/17	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.5 µg/L	92.2	50	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.5 µg/L	119	50	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.5 µg/L	118	50	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.5 µg/L	101	50	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	99.6	50	130
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.5 µg/L	95.2	50	130
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 1004281)</b>							
EM1709231-005	GW67_13/7/17	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	71.0	50	130
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	87.2	50	130
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	83.6	50	130
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	118	50	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	104	50	130
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	86.2	50	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	89.8	50	130
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	89.6	50	130
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	120	50	130
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	94.8	50	130
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	76.6	50	150
		<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 1004281)</b>					
EM1709231-005	GW67_13/7/17	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	91.4	50	130
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	104	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	108	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	1.25 µg/L	130	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	126	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	75.2	50	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	70.4	50	130

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 Work Order : EM1709231  
 Client : AECOM Australia Pty Ltd  
 Project : 60537182



Sub-Matrix: **WATER**

				<i>Matrix Spike (MS) Report</i>			
				<i>Spike</i>	<i>SpikeRecovery(%)</i>	<i>Recovery Limits (%)</i>	
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Concentration</i>	<i>MS</i>	<i>Low</i>	<i>High</i>
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 1004281)</b>							
EM1709231-005	GW67_13/7/17	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.5 µg/L	86.6	50	130
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.5 µg/L	109	50	130
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.5 µg/L	76.4	50	130
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.5 µg/L	88.6	50	130



## QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM1709231	Page	: 1 of 15
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: MS AVERYLL COYNE	Telephone	: +61-3-8549 9608
Project	: 60537182	Date Samples Received	: 14-Jul-2017
Site	: ----	Issue Date	: 24-Jul-2017
Sampler	: BH, BP, JM	No. of samples received	: 16
Order number	: task 3.2	No. of samples analysed	: 14

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

### Summary of Outliers

#### Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

#### Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

#### Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



### Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
<b>Matrix Spike (MS) Recoveries</b>							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	EM1709231--004	GW46_13/7/17	Sulfate as SO4 - Turbidimetric	14808-79-8	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Ar	EM1709210--003	Anonymous	Nitrite + Nitrate as N	----	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.

### Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method	Extraction / Preparation			Analysis			
	Container / Client Sample ID(s)	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EA005P: pH by PC Titrator</b>							
<b>Clear Plastic Bottle - Natural</b>							
GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17,	----	----	----	17-Jul-2017	13-Jul-2017	4

### Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
<b>Laboratory Duplicates (DUP)</b>					
PAH/Phenols (GC/MS - SIM)	0	11	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	13	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>					
PAH/Phenols (GC/MS - SIM)	0	11	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	13	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

### Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EA005P: pH by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural (EA005-P)</b> GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17,	13-Jul-2017	----	----	----	17-Jul-2017	13-Jul-2017	*
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>								
<b>Clear Plastic Bottle - Natural (EA015H)</b> GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17,	13-Jul-2017	----	----	----	17-Jul-2017	20-Jul-2017	✓
<b>ED037P: Alkalinity by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural (ED037-P)</b> GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17,	13-Jul-2017	----	----	----	17-Jul-2017	27-Jul-2017	✓
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>								
<b>Clear Plastic Bottle - Natural (ED041G)</b> GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17,	13-Jul-2017	----	----	----	17-Jul-2017	10-Aug-2017	✓
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>								
<b>Clear Plastic Bottle - Natural (ED043)</b> GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17,	13-Jul-2017	18-Jul-2017	10-Aug-2017	✓	18-Jul-2017	10-Aug-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>ED045G: Chloride by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Natural (ED045G)</b> GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17,	13-Jul-2017	----	----	----	17-Jul-2017	10-Aug-2017	✓
<b>ED093F: Dissolved Major Cations</b>								
<b>Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)</b> GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17,	13-Jul-2017	----	----	----	17-Jul-2017	10-Aug-2017	✓
<b>EG020F: Dissolved Metals by ICP-MS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)</b> GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17,	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17, QC107_13/7/17	13-Jul-2017	----	----	----	17-Jul-2017	09-Jan-2018	✓
<b>EG020T: Total Metals by ICP-MS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)</b> GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17,	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17, QC107_13/7/17	13-Jul-2017	17-Jul-2017	09-Jan-2018	✓	17-Jul-2017	09-Jan-2018	✓
<b>EG035F: Dissolved Mercury by FIMS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)</b> GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17,	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17, QC107_13/7/17	13-Jul-2017	----	----	----	17-Jul-2017	10-Aug-2017	✓





Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)</b> GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17,	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17, QC107_13/7/17	13-Jul-2017	----	----	----	20-Jul-2017	10-Aug-2017	✓
<b>EK040P: Fluoride by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural (EK040P)</b> GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17,	13-Jul-2017	----	----	----	17-Jul-2017	10-Aug-2017	✓
<b>EK055G: Ammonia as N by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Sulfuric Acid (EK055G)</b> GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17,	13-Jul-2017	----	----	----	17-Jul-2017	10-Aug-2017	✓
<b>EK057G: Nitrite as N by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Natural (EK057G)</b> GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17,	13-Jul-2017	----	----	----	14-Jul-2017	15-Jul-2017	✓
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Sulfuric Acid (EK059G)</b> GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17,	13-Jul-2017	----	----	----	17-Jul-2017	10-Aug-2017	✓



Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>								
<b>Clear Plastic Bottle - Natural (EK071G)</b>								
GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17,	13-Jul-2017	----	----	----	14-Jul-2017	15-Jul-2017	✓
<b>EP005: Total Organic Carbon (TOC)</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP005)</b>								
GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17,	13-Jul-2017	----	----	----	20-Jul-2017	10-Aug-2017	✓
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b>								
GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17,	13-Jul-2017	17-Jul-2017	27-Jul-2017	✓	17-Jul-2017	27-Jul-2017	✓
<b>EP074B: Oxygenated Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b>								
GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17,	13-Jul-2017	17-Jul-2017	27-Jul-2017	✓	17-Jul-2017	27-Jul-2017	✓
<b>EP074C: Sulfonated Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b>								
GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17,	13-Jul-2017	17-Jul-2017	27-Jul-2017	✓	17-Jul-2017	27-Jul-2017	✓



Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP074D: Fumigants</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17,	13-Jul-2017	17-Jul-2017	27-Jul-2017	✓	17-Jul-2017	27-Jul-2017	✓
<b>EP074E: Halogenated Aliphatic Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17,	13-Jul-2017	17-Jul-2017	27-Jul-2017	✓	17-Jul-2017	27-Jul-2017	✓
<b>EP074F: Halogenated Aromatic Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17,	13-Jul-2017	17-Jul-2017	27-Jul-2017	✓	17-Jul-2017	27-Jul-2017	✓
<b>EP074G: Trihalomethanes</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17,	13-Jul-2017	17-Jul-2017	27-Jul-2017	✓	17-Jul-2017	27-Jul-2017	✓
<b>EP074H: Naphthalene</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17,	13-Jul-2017	17-Jul-2017	27-Jul-2017	✓	17-Jul-2017	27-Jul-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
<b>Amber Glass Bottle - Unpreserved (EP075(SIM))</b>								
GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17,	13-Jul-2017	18-Jul-2017	20-Jul-2017	✓	20-Jul-2017	27-Aug-2017	✓
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
<b>Amber Glass Bottle - Unpreserved (EP071)</b>								
GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17, QC107_13/7/17	13-Jul-2017	18-Jul-2017	20-Jul-2017	✓	20-Jul-2017	27-Aug-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b>								
GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17, QC107_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17, QC106_13/7/17, QC108_13/7/17	13-Jul-2017	17-Jul-2017	27-Jul-2017	✓	17-Jul-2017	27-Jul-2017	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>								
<b>Amber Glass Bottle - Unpreserved (EP071)</b>								
GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17, QC107_13/7/17	13-Jul-2017	18-Jul-2017	20-Jul-2017	✓	20-Jul-2017	27-Aug-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b>								
GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17, QC107_13/7/17	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17, QC106_13/7/17, QC108_13/7/17	13-Jul-2017	17-Jul-2017	27-Jul-2017	✓	17-Jul-2017	27-Jul-2017	✓





Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080: BTEXN</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW43_13/7/17, GW67_13/7/17, GW77_13/7/17, GW42AC_13/7/17, GW73_13/7/17, GW57_13/7/17, QC107_13/7/17,	GW46_13/7/17, GW76_13/7/17, GW82_13/7/17, GW70_13/7/17, GMW02_13/7/17, QC106_13/7/17, QC108_13/7/17	13-Jul-2017	17-Jul-2017	27-Jul-2017	✓	17-Jul-2017	27-Jul-2017	✓
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW67_13/7/17, GW73_13/7/17	GW42AC_13/7/17,	13-Jul-2017	----	----	----	20-Jul-2017	09-Jan-2018	✓
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW67_13/7/17, GW73_13/7/17	GW42AC_13/7/17,	13-Jul-2017	----	----	----	20-Jul-2017	09-Jan-2018	✓
<b>EP231C: Perfluoroalkyl Sulfonamides</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW67_13/7/17, GW73_13/7/17	GW42AC_13/7/17,	13-Jul-2017	----	----	----	20-Jul-2017	09-Jan-2018	✓
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW67_13/7/17, GW73_13/7/17	GW42AC_13/7/17,	13-Jul-2017	----	----	----	20-Jul-2017	09-Jan-2018	✓
<b>EP231P: PFAS Sums</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW67_13/7/17, GW73_13/7/17	GW42AC_13/7/17,	13-Jul-2017	----	----	----	20-Jul-2017	09-Jan-2018	✓



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Laboratory Duplicates (DUP)</b>							
Alkalinity by PC Titrator	ED037-P	2	15	13.33	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	15	13.33	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	12	16.67	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	15	13.33	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	17	11.76	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	2	18	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	4	34	11.76	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	16	12.50	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	13	15.38	10.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	11	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	17	11.76	10.00	✔	NEPM 2013 B3 & ALS QC Standard
pH by PC Titrator	EA005-P	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	13	15.38	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	4	34	11.76	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	4	30	13.33	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	4	30	13.33	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	13	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	2	11	18.18	10.00	✔	NEPM 2013 B3 & ALS QC Standard
<b>Laboratory Control Samples (LCS)</b>							
Alkalinity by PC Titrator	ED037-P	1	15	6.67	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	15	6.67	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	12	16.67	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	15	6.67	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	17	5.88	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	18	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	34	5.88	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	16	6.25	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	13	7.69	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	11	9.09	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	5.88	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	13	7.69	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard



Matrix: **WATER**

Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Control Samples (LCS) - Continued</b>							
Total Dissolved Solids (High Level)	EA015H	4	34	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	30	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	2	30	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
<b>Method Blanks (MB)</b>							
Ammonia as N by Discrete analyser	EK055G	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	34	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	34	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	30	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	2	30	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>							
Ammonia as N by Discrete analyser	EK055G	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	11	0.00	5.00	*	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Matrix Spikes (MS) - Continued</b>							
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	30	6.67	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	2	30	6.67	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	13	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	1	11	9.09	5.00	✔	NEPM 2013 B3 & ALS QC Standard





## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by PC Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of 'filterable' residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM (2013) Schedule B(3)
Alkalinity by PC Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM (2013) Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Oxidised Sulfur as SO4 2-	ED043	WATER	In house: The sample is treated with Peroxide to convert all Sulfur species to Sulfate. Sulfate in the sample can then be determined by ICPAES and reported as TOS as SO4 2-.
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm APHA 21st edition seal method 2 017-1-L april 2003
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM (2013) Schedule B(3)  Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM (2013) Schedule B(3)  Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM (2013) Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.



Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Fluoride by PC Titrator	EK040P	WATER	In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3)
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO <sub>2</sub> - B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO <sub>3</sub> - F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined separately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite and Nitrate as N (NO <sub>x</sub> ) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO <sub>3</sub> - F. Combined oxidised Nitrogen (NO <sub>2</sub> +NO <sub>3</sub> ) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with orthophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM (2013) Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Volatile Organic Compounds WF Detection Limits	EP074-WF	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)



<i>Analytical Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with methanol. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers.
<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Total Oxidisable Sulfur as SO4 2- Prep	ED043-PR	WATER	In house
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (2013) Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.



SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1709231

Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: MS AVERYLL COYNE	Contact	: Carol Walsh
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: averyll.coyne@aecom.com	E-mail	: carol.walsh@alsglobal.com
Telephone	: +61 03 9653 1234	Telephone	: +61-3-8549 9608
Facsimile	: +61 03 9654 7117	Facsimile	: +61-3-8549 9601
Project	: 60537182	Page	: 1 of 3
Order number	: ----	Quote number	: EM2016AECOMAU0012 (ME/199/16)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: BH, BP, JM		

Dates

Date Samples Received	: 14-Jul-2017 10:05	Issue Date	: 14-Jul-2017
Client Requested Due Date	: 21-Jul-2017	Scheduled Reporting Date	: <b>24-Jul-2017</b>

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Intact.
No. of coolers/boxes	: 2	Temperature	: 1.8°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 16 / 14

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **The scheduled reporting date has been extended due to analytical testing conducted by ALS interstate laboratories. Please refer to your quotation for further information.**
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.
- **Analytical work for this work order will be conducted at ALS Springvale & ALS Sydney.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**





## Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

## Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) WATER No analysis requested	WATER - EG020F Dissolved Metals by ICPMS	WATER - EK059G Nitrite plus Nitrate as N (NOx) by Discrete	WATER - Ionic Balance suite Ionic Balance suite	WATER - W-02 8 Metals	WATER - W-02T 8 metals (Total)	WATER - W-07 TRH/BTEXN/PAH
EM1709231-001	13-Jul-2017 00:00	QC310_13/7/17	✓						
EM1709231-002	13-Jul-2017 00:00	QC311_13/7/17	✓						
EM1709231-003	13-Jul-2017 00:00	GW43_13/7/17		✓	✓	✓	✓	✓	✓
EM1709231-004	13-Jul-2017 00:00	GW46_13/7/17		✓	✓	✓	✓	✓	✓
EM1709231-005	13-Jul-2017 00:00	GW67_13/7/17		✓	✓	✓	✓	✓	✓
EM1709231-006	13-Jul-2017 00:00	GW76_13/7/17		✓	✓	✓	✓	✓	✓
EM1709231-007	13-Jul-2017 00:00	GW77_13/7/17		✓	✓	✓	✓	✓	✓
EM1709231-008	13-Jul-2017 00:00	GW82_13/7/17		✓	✓	✓	✓	✓	✓
EM1709231-009	13-Jul-2017 00:00	GW42AC_13/7/17		✓	✓	✓	✓	✓	✓
EM1709231-010	13-Jul-2017 00:00	GW70_13/7/17		✓	✓	✓	✓	✓	✓
EM1709231-011	13-Jul-2017 00:00	GW73_13/7/17		✓	✓	✓	✓	✓	✓
EM1709231-012	13-Jul-2017 00:00	GMW02_13/7/17		✓	✓	✓	✓	✓	✓
EM1709231-013	13-Jul-2017 00:00	GW57_13/7/17		✓	✓	✓	✓	✓	✓
EM1709231-015	13-Jul-2017 00:00	QC107_13/7/17		✓			✓	✓	

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - ED043 Total Oxidised Sulfur as SO4 2-	WATER - EG020T Total Recoverable Metals by ICPMS (including	WATER - EP005 Total Organic Carbon (TOC)	WATER - EP074-WF Full VOCs with WF DL incl DCM & Acetone	WATER - EP231X PFAS - Full Suite (28 analytes)	WATER - W-04 TRH/BTEXN	WATER - W-18 TRH(C6 - C9)/BTEXN
EM1709231-003	13-Jul-2017 00:00	GW43_13/7/17	✓	✓	✓	✓			
EM1709231-004	13-Jul-2017 00:00	GW46_13/7/17	✓	✓	✓	✓			
EM1709231-005	13-Jul-2017 00:00	GW67_13/7/17	✓	✓	✓	✓	✓		
EM1709231-006	13-Jul-2017 00:00	GW76_13/7/17	✓	✓	✓	✓			
EM1709231-007	13-Jul-2017 00:00	GW77_13/7/17	✓	✓	✓	✓			
EM1709231-008	13-Jul-2017 00:00	GW82_13/7/17	✓	✓	✓	✓			
EM1709231-009	13-Jul-2017 00:00	GW42AC_13/7/17	✓	✓	✓	✓	✓		
EM1709231-010	13-Jul-2017 00:00	GW70_13/7/17	✓	✓	✓	✓			
EM1709231-011	13-Jul-2017 00:00	GW73_13/7/17	✓	✓	✓	✓	✓		
EM1709231-012	13-Jul-2017 00:00	GMW02_13/7/17	✓	✓	✓	✓			



ANZ  
FQM - Generic Chain of Custody Form

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: JM BP BH		Destination Laboratory	
PROJECT MANAGER (PM): Averyll Coyne		SITE:		MOBILE: 0409536240		ALB	
PROJECT NUMBER & TASK CO 60537182		P.O. NO.:		EMAIL REPORT TO: Averyll Coyne			
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED including SULITES (note - suite codes must be listed to attract suite prices)			
FOR LABORATORY USE ONLY COOLER SEAL: (Date/Time)		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:		pH, TDS, TOC TRH (CG-40) PAH Nitrogen oxides/sulphur oxides VOC (ALSEP/74-WF) includes BTEXN Ionic chemistry (NH <sub>4</sub> , Ca), (Mg), (K), (Cl), (HCO <sub>3</sub> ), (NO <sub>3</sub> ), (NO <sub>2</sub> ), (NH <sub>3</sub> ) (PO <sub>4</sub> ), (SO <sub>4</sub> ), (F <sub>2</sub> ), (Mn) PFAS - 28 analytes Dissolved metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg) Total Metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg) BTE+ TRH CG-69 HOLD			
SAMPLE TEMPERATURE CHECKED: / /							
SAMPLE INFORMATION (note: S = Soil, W = Water)				CONTAINER INFORMATION			
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	
1	QC810-13/7/17	W	13/7/17			4	
2	QC811-13/7/17					4	
3	GW43-13/7/17					10	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
4	GW46-13/7/17					10	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
5	GW67-13/7/17					12	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
6	GW76-13/7/17					10	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
7	GW77-13/7/17					10	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
8	GW82-13/7/17	↓	↓			10	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
9	GW42AC-13/7/17					12	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
10	GW70-13/7/17					10	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
11	GW73-13/7/17					12	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
12	GMW02-13/7/17					10	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
13	GW57-13/7/17					10	✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
14	QL106-13/7/17						✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
15	QL107-13/7/17						✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
16	QL108-13/7/17						✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓
RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:		METHOD OF SHIPMENT	
Name: Breana Pearce	Date: 14/8/17	Name:	Date:	Name: DANIEL	Date: 14/8	Con' Note No:	
Of: AECOM	Time: 8:00	Of:	Time:	Of: AUS	Time: 10:05	Transport Co:	

Environmental Division  
Melbourne  
Work Order Reference  
**EM1709231**



Telephone: +61-3-8649 9800

## CERTIFICATE OF ANALYSIS

**Work Order** : **EM1709371**  
**Client** : **AECOM Australia Pty Ltd**  
**Contact** : **MS AVERYLL COYNE**  
**Address** : **COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET  
MELBOURNE VIC, AUSTRALIA 3004**  
**Telephone** : **+61 03 9653 1234**  
**Project** : **60537182**  
**Order number** : **Task 3.2**  
**C-O-C number** : **----**  
**Sampler** : **BH, BP, JM**  
**Site** : **----**  
**Quote number** : **ME/199/16**  
**No. of samples received** : **25**  
**No. of samples analysed** : **19**

**Page** : 1 of 23  
**Laboratory** : Environmental Division Melbourne  
**Contact** : Carol Walsh  
**Address** : 4 Westall Rd Springvale VIC Australia 3171  
**Telephone** : +61-3-8549 9608  
**Date Samples Received** : 17-Jul-2017 09:30  
**Date Analysis Commenced** : 18-Jul-2017  
**Issue Date** : 24-Jul-2017 11:31



Accreditation No. 825  
 Accredited for compliance with  
 ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

**Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.**

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Chris Lemaitre	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Gaston Allende	R&D Chemist	Sydney Organics, Smithfield, NSW
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC





## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
LOR = Limit of reporting  
^ = This result is computed from individual analyte detections at or above the level of reporting  
ø = ALS is not NATA accredited for these tests.  
~ = Indicates an estimated value.

- TDS by method EA-015 for EM1709371 #3,18 high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- EG035F: EM1709353-001 Poor matrix spike recovery for dissolved mercury due to sample matrix. Confirmed by re-extraction and re-analysis.
- EG035T: EM1709371 #5, result for Mercury has been confirmed by re-preparation and re-analysis.
- EP074-WF: Sample EM1709371\_001, 002, 003, 004, 005, 017, 018, 019, 020 have been confirmed by re-analysis.
- It is recognised that total metals is less than dissolved metals for EM1709371 #2 and 20. However, the difference is within experimental variation of the methods.
- EK057G: Results for EM1709371-002 and 019 have been confirmed by re-preparation and re-analysis.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- ED045G: The presence of thiocyanate can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW08_14/07/17	GW80_14/07/17	GW81_14/07/17	GW72_14/07/17	GW75_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-001	EM1709371-002	EM1709371-003	EM1709371-004	EM1709371-005	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.43	7.19	7.08	6.52	7.06	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	956	769	1200	562	570	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	424	454	478	376	328	
Total Alkalinity as CaCO3	----	1	mg/L	424	454	478	376	328	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	262	169	332	90	149	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	337	211	512	113	199	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	39	40	56	22	16	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	206	109	174	128	115	
Magnesium	7439-95-4	1	mg/L	30	48	60	13	23	
Sodium	7440-23-5	1	mg/L	43	66	99	34	41	
Potassium	7440-09-7	1	mg/L	14	26	24	6	10	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	<0.01	0.02	0.01	<0.01	<0.01	
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.001	<0.001	<0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0003	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	0.002	0.002	<0.001	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Manganese	7439-96-5	0.001	mg/L	0.024	0.235	0.182	0.012	0.012	
Nickel	7440-02-0	0.001	mg/L	0.001	0.009	0.007	0.004	0.001	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Zinc	7440-66-6	0.005	mg/L	<0.005	0.006	<0.005	<0.005	<0.005	
Iron	7439-89-6	0.05	mg/L	0.16	2.90	5.49	0.81	0.07	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.86	1.27	2.91	0.30	1.85	
Arsenic	7440-38-2	0.001	mg/L	0.006	0.006	0.010	0.005	0.012	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW08_14/07/17	GW80_14/07/17	GW81_14/07/17	GW72_14/07/17	GW75_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-001	EM1709371-002	EM1709371-003	EM1709371-004	EM1709371-005	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0001	<0.0001	0.0002	
Chromium	7440-47-3	0.001	mg/L	0.004	0.005	0.012	0.002	0.006	
Copper	7440-50-8	0.001	mg/L	0.002	0.003	0.007	0.002	0.024	
Nickel	7440-02-0	0.001	mg/L	0.011	0.011	0.020	0.018	0.018	
Lead	7439-92-1	0.001	mg/L	0.005	0.003	0.011	0.001	0.114	
Zinc	7440-66-6	0.005	mg/L	0.007	0.028	0.053	0.019	0.171	
Manganese	7439-96-5	0.001	mg/L	0.188	0.274	0.331	0.063	0.108	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	3.12	11.9	19.4	4.87	4.57	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	0.0005	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.2	0.8	0.8	0.3	0.2	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	2.37	2.51	1.46	2.43	0.60	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	0.01	0.15	<0.01	0.01	0.08	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	0.02	0.11	0.01	0.01	2.01	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	0.03	0.26	0.01	0.02	2.09	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	15.0	13.7	18.0	10.0	10.1	
Total Cations	----	0.01	meq/L	15.0	12.9	18.5	9.09	9.67	
Ionic Balance	----	0.01	%	0.16	2.97	1.36	4.80	2.21	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	10	17	28	8	4	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW08_14/07/17	GW80_14/07/17	GW81_14/07/17	GW72_14/07/17	GW75_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-001	EM1709371-002	EM1709371-003	EM1709371-004	EM1709371-005	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	<1	<1	<1	<1	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	<1	<1	<1	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	<1	<1	<1	
Styrene	100-42-5	1	µg/L	<1	<1	<1	<1	<1	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	<1	<1	<1	
Isopropylbenzene	98-82-8	1	µg/L	<1	<1	<1	<1	<1	
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	<1	<1	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	<1	<1	<1	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	<1	<1	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	<1	<1	<1	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	<1	<1	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	<1	<1	<1	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	<10	<10	<10	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	<10	<10	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	<10	<10	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	<10	<10	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	<10	<10	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	<10	<10	<10	
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	<10	
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	<10.0	<10.0	<10.0	
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	<10	
Chloroethane	75-00-3	10	µg/L	<10	<10	<10	<10	<10	
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	<10	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW08_14/07/17	GW80_14/07/17	GW81_14/07/17	GW72_14/07/17	GW75_14/07/17
Client sampling date / time					14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709371-001	EM1709371-002	EM1709371-003	EM1709371-004	EM1709371-005	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	<1	
Iodomethane	74-88-4	1	µg/L	<1	<1	<1	<1	<1	
Methylene chloride	75-09-2	4	µg/L	<4	<4	<4	<4	<4	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	<1	<1	<1	
1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	<1	<1	<1	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	2	<1	<1	<1	<1	
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	<1	
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	<1	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	<1	
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	<1	
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	<1	
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	<1	
1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	<1	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	<1	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	<1	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	<1	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	<1	<1	<1	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	<1	
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	<1	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	<1	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	<1	<1	<1	<1	
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	<1	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	<1	<1	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	<1	
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	<1	<1	<1	
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	<1	<1	<1	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	<1	<1	<1	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074G: Trihalomethanes</b>									



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW08_14/07/17	GW80_14/07/17	GW81_14/07/17	GW72_14/07/17	GW75_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-001	EM1709371-002	EM1709371-003	EM1709371-004	EM1709371-005	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	<1	<1	<1	<1	<1	
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	<1	<1	<1	
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	<1	
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<b>1.2</b>	
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<b>1.6</b>	
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<b>3.1</b>	
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<b>2.9</b>	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<b>1.4</b>	
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<b>1.1</b>	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<b>1.9</b>	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<b>1.8</b>	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	<1.0	<1.0	<b>1.3</b>	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<b>16.3</b>	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<b>2.2</b>	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW08_14/07/17	GW80_14/07/17	GW81_14/07/17	GW72_14/07/17	GW75_14/07/17
Client sampling date / time					14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709371-001	EM1709371-002	EM1709371-003	EM1709371-004	EM1709371-005	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	120	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	120	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	----	<0.02	<0.02	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	----	0.02	<0.02	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	----	0.32	<0.02	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	----	<0.02	<0.02	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	----	0.27	<0.01	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	----	<0.02	<0.02	----	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	----	0.2	<0.1	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	----	1.00	<0.02	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	----	0.68	<0.02	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	----	0.63	<0.02	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW08_14/07/17	GW80_14/07/17	GW81_14/07/17	GW72_14/07/17	GW75_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-001	EM1709371-002	EM1709371-003	EM1709371-004	EM1709371-005	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	----	0.41	<0.01	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	----	<0.02	<0.02	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	----	<0.02	<0.02	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	----	<0.02	<0.02	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	----	<0.02	<0.02	----	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	----	----	<0.02	<0.02	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	----	<0.05	<0.05	----	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	----	<0.02	<0.02	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	----	<0.05	<0.05	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	----	<0.05	<0.05	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	----	----	<0.05	<0.05	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	----	<0.05	<0.05	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	----	<0.02	<0.02	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	----	<0.02	<0.02	----	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	----	<0.05	<0.05	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	----	<0.05	<0.05	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	----	<0.05	<0.05	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW08_14/07/17	GW80_14/07/17	GW81_14/07/17	GW72_14/07/17	GW75_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-001	EM1709371-002	EM1709371-003	EM1709371-004	EM1709371-005	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	----	<0.05	<0.05	----	
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	----	----	3.53	<0.01	----	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	----	0.59	<0.01	----	
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	----	3.51	<0.01	----	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	110	106	108	103	107	
Toluene-D8	2037-26-5	1	%	114	111	110	108	109	
4-Bromofluorobenzene	460-00-4	1	%	107	104	108	101	103	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	25.4	27.3	27.6	29.1	28.4	
2-Chlorophenol-D4	93951-73-6	1	%	77.2	81.1	81.6	84.6	82.0	
2,4,6-Tribromophenol	118-79-6	1	%	69.7	74.0	75.0	82.8	76.8	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	74.0	80.5	81.2	83.9	82.3	
Anthracene-d10	1719-06-8	1	%	82.8	82.8	86.6	91.2	85.8	
4-Terphenyl-d14	1718-51-0	1	%	86.8	84.8	85.2	94.2	86.0	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	117	114	115	110	114	
Toluene-D8	2037-26-5	2	%	107	104	104	101	102	
4-Bromofluorobenzene	460-00-4	2	%	102	102	103	99.1	101	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	----	----	99.2	94.7	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC208_14/07/17	QC209_14/07/17	QC210_14/07/17	QC314_14/07/17	QC315_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-006	EM1709371-007	EM1709371-008	EM1709371-010	EM1709371-016	
				Result	Result	Result	Result	Result	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	----	----	----	<0.01	----	
Arsenic	7440-38-2	0.001	mg/L	----	----	----	<0.001	----	
Cadmium	7440-43-9	0.0001	mg/L	----	----	----	<0.0001	----	
Chromium	7440-47-3	0.001	mg/L	----	----	----	<0.001	----	
Copper	7440-50-8	0.001	mg/L	----	----	----	<0.001	----	
Lead	7439-92-1	0.001	mg/L	----	----	----	<0.001	----	
Nickel	7440-02-0	0.001	mg/L	----	----	----	<0.001	----	
Selenium	7782-49-2	0.01	mg/L	----	----	----	<0.01	----	
Zinc	7440-66-6	0.005	mg/L	----	----	----	<0.005	----	
Iron	7439-89-6	0.05	mg/L	----	----	----	<0.05	----	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	<0.01	----	----	<0.01	----	
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	<0.001	----	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	<0.0001	----	
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	<0.001	----	
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	<0.001	----	
Nickel	7440-02-0	0.001	mg/L	<0.001	----	----	<0.001	----	
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	<0.001	----	
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	<0.005	----	
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	<0.01	----	
Iron	7439-89-6	0.05	mg/L	<0.05	----	----	<0.05	----	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	----	----	----	<0.0001	----	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	<0.0001	----	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	----	----	<50	----	
C15 - C28 Fraction	----	100	µg/L	<100	----	----	<100	----	
C29 - C36 Fraction	----	50	µg/L	<50	----	----	<50	----	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	<50	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC208_14/07/17	QC209_14/07/17	QC210_14/07/17	QC314_14/07/17	QC315_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-006	EM1709371-007	EM1709371-008	EM1709371-010	EM1709371-016	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	<100	----	
>C16 - C34 Fraction	----	100	µg/L	<100	----	----	<100	----	
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	<100	----	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	<100	----	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	----	<100	----	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	101	102	101	100	98.7	
Toluene-D8	2037-26-5	2	%	94.3	95.9	96.4	95.6	94.1	
4-Bromofluorobenzene	460-00-4	2	%	93.2	91.2	92.4	95.1	92.1	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW45_14/07/17	GW41_14/07/17	GW47_14/07/17	GW02_14/07/17	QC109_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-017	EM1709371-018	EM1709371-019	EM1709371-020	EM1709371-021	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.19	7.08	7.50	7.36	7.53	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	3450	728	9360	1820	9210	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	780	176	447	1400	447	
Total Alkalinity as CaCO3	----	1	mg/L	780	176	447	1400	447	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	320	66	978	<1	965	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	592	387	1410	7	1550	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	1360	13	5140	254	4940	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	263	66	283	57	268	
Magnesium	7439-95-4	1	mg/L	104	7	400	70	375	
Sodium	7440-23-5	1	mg/L	907	18	2670	523	2510	
Potassium	7440-09-7	1	mg/L	38	8	138	45	131	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	<0.01	0.02	0.06	0.01	0.05	
Arsenic	7440-38-2	0.001	mg/L	<0.001	0.002	0.004	0.003	0.003	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	0.004	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.003	<0.001	0.002	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Manganese	7439-96-5	0.001	mg/L	0.020	0.013	0.168	0.036	0.160	
Nickel	7440-02-0	0.001	mg/L	<0.001	0.001	0.018	0.028	0.017	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.012	0.015	0.010	
Iron	7439-89-6	0.05	mg/L	0.10	0.29	1.03	8.06	1.01	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	14.6	7.66	2.47	0.21	2.36	
Arsenic	7440-38-2	0.001	mg/L	0.034	0.014	0.008	0.003	0.010	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW45_14/07/17	GW41_14/07/17	GW47_14/07/17	GW02_14/07/17	QC109_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-017	EM1709371-018	EM1709371-019	EM1709371-020	EM1709371-021	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	0.0004	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.057	0.022	0.007	0.005	0.010	
Copper	7440-50-8	0.001	mg/L	0.055	0.009	0.003	0.001	0.004	
Nickel	7440-02-0	0.001	mg/L	0.070	0.012	0.020	0.027	0.020	
Lead	7439-92-1	0.001	mg/L	0.162	0.009	0.003	0.005	0.004	
Zinc	7440-66-6	0.005	mg/L	0.298	0.031	0.013	0.028	0.016	
Manganese	7439-96-5	0.001	mg/L	0.866	0.051	0.194	0.034	0.202	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	31.3	20.4	5.16	7.75	5.42	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.8	0.2	0.5	0.6	0.5	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	5.57	0.07	2.96	58.8	3.06	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.02	<0.01	0.02	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	0.02	0.02	<0.01	0.02	<0.01	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	0.02	0.02	0.02	0.02	0.02	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	60.6	5.26	174	35.1	168	
Total Cations	----	0.01	meq/L	62.1	4.86	167	32.5	157	
Ionic Balance	----	0.01	%	1.22	3.96	2.22	3.89	3.57	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	31	12	13	37	12	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW45_14/07/17	GW41_14/07/17	GW47_14/07/17	GW02_14/07/17	QC109_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-017	EM1709371-018	EM1709371-019	EM1709371-020	EM1709371-021	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	<1	<1	<1	<1	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	<1	<1	<1	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	<1	<1	<1	
Styrene	100-42-5	1	µg/L	<1	<1	<1	<1	<1	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	<1	<1	<1	
Isopropylbenzene	98-82-8	1	µg/L	<1	<1	<1	3	<1	
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	<1	2	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	<1	<1	<1	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	<1	<1	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	<1	<1	<1	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	<1	<1	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	<1	<1	<1	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	60	<10	<10	<10	<10	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	<10	<10	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	<10	<10	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	<10	<10	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	<10	<10	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	<10	<10	<10	
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	<10	
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	<10.0	<10.0	<10.0	
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	<10	
Chloroethane	75-00-3	10	µg/L	<10	<10	<10	<10	<10	
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	<10	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW45_14/07/17	GW41_14/07/17	GW47_14/07/17	GW02_14/07/17	QC109_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-017	EM1709371-018	EM1709371-019	EM1709371-020	EM1709371-021	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	<1	
Iodomethane	74-88-4	1	µg/L	<1	<1	<1	<1	<1	
Methylene chloride	75-09-2	4	µg/L	<4	<4	<4	<4	<4	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	<1	<1	<1	
1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	4	<1	4	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	<1	<1	<1	
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	<1	
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	<1	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	<1	
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	<1	
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	<1	
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	<1	
1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	<1	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	<1	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	<1	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	<1	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	<1	<1	<1	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	<1	
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	<1	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	<1	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	<1	<1	9	<1	
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	<1	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	4	<1	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	<1	
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	<1	<1	<1	
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	<1.0	<1.0	1.7	<1.0	
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	<1	<1	<1	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	<1	<1	<1	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074G: Trihalomethanes</b>									



## Analytical Results

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Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-017	EM1709371-018	EM1709371-019	EM1709371-020	EM1709371-021	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	<1	<1	<1	<1	<1	
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	<1	<1	<1	
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	<1	
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	<1.0	<b>1.1</b>	<1.0	
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<b>1.1</b>	<0.5	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<b>30</b>	<20	
C10 - C14 Fraction	----	50	µg/L	<b>170</b>	<50	<50	<b>200</b>	<50	
C15 - C28 Fraction	----	100	µg/L	<b>1380</b>	<100	<100	<b>540</b>	<100	
C29 - C36 Fraction	----	50	µg/L	<b>60</b>	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<b>1610</b>	<50	<50	<b>740</b>	<50	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<b>30</b>	<20	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW45_14/07/17	GW41_14/07/17	GW47_14/07/17	GW02_14/07/17	QC109_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-017	EM1709371-018	EM1709371-019	EM1709371-020	EM1709371-021	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	30	<20	
>C10 - C16 Fraction	----	100	µg/L	260	<100	<100	240	<100	
>C16 - C34 Fraction	----	100	µg/L	1160	<100	<100	440	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	1420	<100	<100	680	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	260	<100	<100	240	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	<0.02	----	----	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	<0.02	----	----	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	<0.02	----	----	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	<0.02	----	----	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	<0.01	----	----	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	<0.02	----	----	----	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	<0.1	----	----	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	<0.02	----	----	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	<0.02	----	----	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	<0.02	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW45_14/07/17	GW41_14/07/17	GW47_14/07/17	GW02_14/07/17	QC109_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-017	EM1709371-018	EM1709371-019	EM1709371-020	EM1709371-021	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	<0.01	----	----	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	<0.02	----	----	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	<0.02	----	----	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	<0.02	----	----	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	<0.02	----	----	----	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	----	<0.02	----	----	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	<0.05	----	----	----	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	<0.02	----	----	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	<0.05	----	----	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	<0.05	----	----	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	----	<0.05	----	----	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	<0.05	----	----	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	<0.02	----	----	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	<0.02	----	----	----	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	<0.05	----	----	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	<0.05	----	----	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	<0.05	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW45_14/07/17	GW41_14/07/17	GW47_14/07/17	GW02_14/07/17	QC109_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-017	EM1709371-018	EM1709371-019	EM1709371-020	EM1709371-021	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	<0.05	----	----	----	
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	----	<0.01	----	----	----	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	<0.01	----	----	----	
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	<0.01	----	----	----	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	108	106	107	110	97.7	
Toluene-D8	2037-26-5	1	%	108	110	110	115	101	
4-Bromofluorobenzene	460-00-4	1	%	105	106	107	109	99.8	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	29.0	31.2	30.4	30.1	29.1	
2-Chlorophenol-D4	93951-73-6	1	%	81.3	80.1	83.7	80.8	84.1	
2,4,6-Tribromophenol	118-79-6	1	%	80.8	74.3	74.2	82.7	77.9	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	75.9	81.6	84.6	78.4	82.4	
Anthracene-d10	1719-06-8	1	%	79.8	87.2	87.6	79.8	86.9	
4-Terphenyl-d14	1718-51-0	1	%	85.1	88.9	90.1	81.2	89.2	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	115	113	115	118	102	
Toluene-D8	2037-26-5	2	%	102	103	103	108	92.6	
4-Bromofluorobenzene	460-00-4	2	%	100	101	100	105	97.7	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	----	97.4	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC111_14/07/17	QC112_14/07/17	QC113_14/07/17	QC114_17/07/17	----
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	17-Jul-2017 00:00	----	----
Compound	CAS Number	LOR	Unit	EM1709371-022	EM1709371-023	EM1709371-024	EM1709371-025	-----	-----
				Result	Result	Result	Result	----	----
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	----	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	----	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	----	----	----	----
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	----	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	----	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	----	----	----	----
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----	----
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	----	----
C10 - C14 Fraction	----	50	µg/L	<50	<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	----	----	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	----	----





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC111_14/07/17	QC112_14/07/17	QC113_14/07/17	QC114_17/07/17	----
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	17-Jul-2017 00:00	----	----
Compound	CAS Number	LOR	Unit	EM1709371-022	EM1709371-023	EM1709371-024	EM1709371-025	-----	-----
				Result	Result	Result	Result	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	----	----	----	----
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	----	----
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	----	----
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	----	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	99.5	103	100	104	----	----
Toluene-D8	2037-26-5	2	%	92.1	99.1	91.4	94.7	----	----
4-Bromofluorobenzene	460-00-4	2	%	90.3	96.6	89.8	93.0	----	----



## Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	72	120
Toluene-D8	2037-26-5	70	130
4-Bromofluorobenzene	460-00-4	70	128
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	10	46
2-Chlorophenol-D4	93951-73-6	23	104
2,4,6-Tribromophenol	118-79-6	28	130
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129
<b>EP231S: PFAS Surrogate</b>			
13C4-PFOS	----	60	130



QUALITY CONTROL REPORT

Work Order : EM1709371
Client : AECOM Australia Pty Ltd
Contact : MS AVERYLL COYNE
Address : COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004
Telephone : +61 03 9653 1234
Project : 60537182
Order number : Task 3.2
C-O-C number : ----
Sampler : BH, BP, JM
Site : ----
Quote number : ME/199/16
No. of samples received : 25
No. of samples analysed : 19

Page : 1 of 22
Laboratory : Environmental Division Melbourne
Contact : Carol Walsh
Address : 4 Westall Rd Springvale VIC Australia 3171
Telephone : +61-3-8549 9608
Date Samples Received : 17-Jul-2017
Date Analysis Commenced : 18-Jul-2017
Issue Date : 24-Jul-2017



Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Table with 3 columns: Signatories, Position, Accreditation Category. Rows include Alex Rossi (Organic Chemist), Chris Lemaitre (Non-Metals Team Leader), Dilani Fernando (Senior Inorganic Chemist), Eric Chau (Metals Team Leader), Gaston Allende (R&D Chemist), Nikki Stepniewski (Senior Inorganic Instrument Chemist), and Xing Lin (Senior Organic Chemist).



## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :  
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot  
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
 LOR = Limit of reporting  
 RPD = Relative Percentage Difference  
 # = Indicates failed QC

## Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA005P: pH by PC Titrator (QC Lot: 1004131)</b>									
EM1709373-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.47	7.43	0.537	0% - 20%
EM1709371-020	GW02_14/07/17	EA005-P: pH Value	----	0.01	pH Unit	7.36	7.37	0.136	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 1004178)</b>									
EM1709370-011	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	6260	6100	2.56	0% - 20%
EM1709371-018	GW41_14/07/17	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	728	600	19.3	0% - 20%
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 1004130)</b>									
EM1709371-020	GW02_14/07/17	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	1400	1400	0.174	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	1400	1400	0.174	0% - 20%
EM1709368-002	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	1070	1040	2.41	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	1070	1040	2.41	0% - 20%
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 1002685)</b>									
EM1709371-021	QC109_14/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	965	965	0.00	0% - 20%
EM1709371-001	GW08_14/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	262	255	2.67	0% - 20%
<b>ED043: Total Oxidised Sulfur as SO4 2- (QC Lot: 1009657)</b>									
EM1709192-003	Anonymous	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	66	73	10.5	0% - 20%
EM1709371-019	GW47_14/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	1410	1550	9.64	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 1002686)</b>									
EM1709371-020	GW02_14/07/17	ED045G: Chloride	16887-00-6	1	mg/L	254	254	0.00	0% - 20%
EM1709371-001	GW08_14/07/17	ED045G: Chloride	16887-00-6	1	mg/L	39	38	0.00	0% - 20%
<b>ED093F: Dissolved Major Cations (QC Lot: 1002542)</b>									





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>ED093F: Dissolved Major Cations (QC Lot: 1002542) - continued</b>									
EM1709306-003	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	25	25	0.00	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	36	36	0.00	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	166	167	0.956	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	206	208	0.758	0% - 20%
EM1709371-001	GW08_14/07/17	ED093F: Calcium	7440-70-2	1	mg/L	206	206	0.00	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	30	30	0.00	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	43	44	0.00	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	14	14	0.00	0% - 50%
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 1002543)</b>									
EM1709340-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.004	0.004	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.024	0.027	10.0	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.003	0.003	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.017	0.017	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EM1709371-010	QC314_14/07/17	EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit
		EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.00	No Limit
<b>EG020T: Total Metals by ICP-MS (QC Lot: 1002545)</b>									
EM1709361-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020T: Total Metals by ICP-MS (QC Lot: 1002545) - continued</b>									
EM1709361-001	Anonymous	EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.02	0.02	0.00	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.06	<0.05	23.2	No Limit
EM1709371-002	GW80_14/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0002	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.006	0.008	24.5	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.005	0.007	31.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.003	0.004	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.003	0.003	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.274	0.299	8.96	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.011	0.015	30.3	0% - 50%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.028	0.031	9.10	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	1.27	1.34	5.87	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-T: Iron	7439-89-6	0.05	mg/L	11.9	12.8	6.67	0% - 20%		
<b>EG020T: Total Metals by ICP-MS (QC Lot: 1002547)</b>									
EM1709371-022	QC111_14/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.02	84.2	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit		
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 1002544)</b>									
EM1709343-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709371-018	GW41_14/07/17	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1007147)</b>									
EM1709231-003	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709231-012	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1007149)</b>									
EM1709371-010	QC314_14/07/17	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709376-012	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EK040P: Fluoride by PC Titrator (QC Lot: 1004127)</b>									
EM1709249-002	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.4	0.5	0.00	No Limit
EM1709371-020	GW02_14/07/17	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.6	0.7	0.00	No Limit
<b>EK055G: Ammonia as N by Discrete Analyser (QC Lot: 1004192)</b>									



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EK055G: Ammonia as N by Discrete Analyser (QC Lot: 1004192) - continued</b>										
EM1709371-001	GW08_14/07/17	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	2.37	2.39	0.522	0% - 20%	
EM1709371-021	QC109_14/07/17	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	3.06	3.13	2.30	0% - 20%	
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 1002687)</b>										
EM1709371-021	QC109_14/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.02	0.02	0.00	No Limit	
EM1709371-001	GW08_14/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.01	0.01	0.00	No Limit	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 1004193)</b>										
EM1709371-001	GW08_14/07/17	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.03	0.09	93.5	No Limit	
EM1709371-021	QC109_14/07/17	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.02	0.02	0.00	No Limit	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 1002688)</b>										
EM1709371-021	QC109_14/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit	
EM1709371-001	GW08_14/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit	
<b>EP005: Total Organic Carbon (TOC) (QC Lot: 1007488)</b>										
EM1709231-003	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	5	5	0.00	No Limit	
EM1709231-012	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	16	17	7.19	0% - 50%	
<b>EP005: Total Organic Carbon (TOC) (QC Lot: 1007489)</b>										
EM1709371-021	QC109_14/07/17	EP005: Total Organic Carbon	----	1	mg/L	12	13	0.00	0% - 50%	
EM1709376-010	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	2	3	0.00	No Limit	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 1003964)</b>										
EM1709371-001	GW08_14/07/17	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit			
EM1709415-001	Anonymous	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit			



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 1003964) - continued</b>									
EM1709415-001	Anonymous	EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 1003964)</b>									
EM1709371-001	GW08_14/07/17	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit
EM1709415-001	Anonymous	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 1003964)</b>									
EM1709371-001	GW08_14/07/17	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
EM1709415-001	Anonymous	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
<b>EP074D: Fumigants (QC Lot: 1003964)</b>									
EM1709371-001	GW08_14/07/17	EP074-WF: 2.2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1.3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
EM1709415-001	Anonymous	EP074-WF: 2.2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1.3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 1003964)</b>									
EM1709371-001	GW08_14/07/17	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit





Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 1003964) - continued</b>									
EM1709371-001	GW08_14/07/17	EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	2	2	0.00	No Limit
		EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit
		EM1709415-001	Anonymous	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0
EP074-WF: Hexachlorobutadiene	87-68-3			0.5	µg/L	<1.0	<1.0	0.00	No Limit
EP074-WF: 1,1-Dichloroethene	75-35-4			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: Iodomethane	74-88-4			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: trans-1,2-Dichloroethene	156-60-5			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 1,1-Dichloroethane	75-34-3			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: cis-1,2-Dichloroethene	156-59-2			1	µg/L	8	8	0.00	No Limit
EP074-WF: 1,1,1-Trichloroethane	71-55-6			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 1,1-Dichloropropylene	563-58-6			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: Carbon Tetrachloride	56-23-5			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 1,2-Dichloroethane	107-06-2			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: Trichloroethene	79-01-6			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: Dibromomethane	74-95-3			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 1,1,2-Trichloroethane	79-00-5			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 1,3-Dichloropropane	142-28-9			1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 1003964) - continued</b>									
EM1709415-001	Anonymous	EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 1003964)</b>									
EM1709371-001	GW08_14/07/17	EP074-WF: 1.4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
EM1709415-001	Anonymous	EP074-WF: 1.4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 1003964)</b>									
EM1709371-001	GW08_14/07/17	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
EM1709415-001	Anonymous	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)		
<b>EP074G: Trihalomethanes (QC Lot: 1003964) - continued</b>											
EM1709415-001	Anonymous	EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit		
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit		
<b>EP074H: Naphthalene (QC Lot: 1003964)</b>											
EM1709371-001	GW08_14/07/17	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit		
EM1709415-001	Anonymous	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit		
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1003965)</b>											
EM1709371-001	GW08_14/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit		
EM1709415-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit		
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1003968)</b>											
EM1709353-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	410	390	3.71	0% - 20%		
EM1709371-010	QC314_14/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit		
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1003965)</b>											
EM1709371-001	GW08_14/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit		
EM1709415-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit		
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1003968)</b>											
EM1709353-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	690	660	4.06	0% - 20%		
EM1709371-010	QC314_14/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit		
<b>EP080: BTEXN (QC Lot: 1003965)</b>											
EM1709371-001	GW08_14/07/17	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit		
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit		
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit		
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit		
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit		
EM1709415-001	Anonymous	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit		
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit		
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit		
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit		
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit		
			106-42-3								
EM1709415-001	Anonymous	EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit		
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit		
		<b>EP080: BTEXN (QC Lot: 1003968)</b>									
		EM1709353-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	9	9	0.00	No Limit
				EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
				EP080: Ethylbenzene	100-41-4	2	µg/L	68	65	3.79	0% - 20%
EP080: meta- & para-Xylene	108-38-3			2	µg/L	41	39	4.60	0% - 20%		
	106-42-3										
EP080: ortho-Xylene	95-47-6	2	µg/L	14	14	0.00	No Limit				



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)		
<b>EP080: BTEXN (QC Lot: 1003968) - continued</b>											
EM1709353-001	Anonymous	EP080: Naphthalene	91-20-3	5	µg/L	39	35	10.9	No Limit		
EM1709371-010	QC314_14/07/17	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit		
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit		
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit		
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit		
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit		
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit		
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 1006714)</b>											
EM1709371-003	GW81_14/07/17	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.27	0.27	0.00	0% - 20%		
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.02	0.03	0.00	No Limit		
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.32	0.35	8.26	0% - 50%		
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
ES1717796-005	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit		
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 1006714)</b>											
EM1709371-003	GW81_14/07/17	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.41	0.42	4.10	0% - 20%		
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	1.00	1.06	5.24	0% - 20%		
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.68	0.68	0.00	0% - 20%		
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.63	0.67	5.68	0% - 20%		
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit		
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.2	0.2	0.00	No Limit		
		ES1717796-005	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
				EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
				EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9			0.02	µg/L	<0.02	<0.02	0.00	No Limit		
EP231X: Perfluorononanoic acid (PFNA)	375-95-1			0.02	µg/L	<0.02	<0.02	0.00	No Limit		
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2			0.02	µg/L	<0.02	<0.02	0.00	No Limit		
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit		





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 1006714) - continued</b>									
ES1717796-005	Anonymous	EP231X: Perfluorododecanoic acid (PFDODA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTEDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
<b>EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 1006714)</b>									
EM1709371-003	GW81_14/07/17	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
ES1717796-005	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 1006714)</b>									
EM1709371-003	GW81_14/07/17	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit

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 Work Order : EM1709371  
 Client : AECOM Australia Pty Ltd  
 Project : 60537182



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 1006714) - continued</b>									
ES1717796-005	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231P: PFAS Sums (QC Lot: 1006714)</b>									
EM1709371-003	GW81_14/07/17	EP231X: Sum of PFAS	----	0.01	µg/L	3.53	3.68	4.16	0% - 20%
ES1717796-005	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit



## Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 1004178)</b>									
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	101	95	105	
				<10	293 mg/L	100	95	105	
<b>ED037P: Alkalinity by PC Titrator (QCLot: 1004130)</b>									
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	100	88	109	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 1002685)</b>									
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	103	92	115	
				<1	100 mg/L	102	92	115	
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 1009657)</b>									
ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	<1	500 mg/L	107	82	122	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 1002686)</b>									
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	102	88	118	
				<1	1000 mg/L	101	88	118	
<b>ED093F: Dissolved Major Cations (QCLot: 1002542)</b>									
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	107	93	110	
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	107	91	110	
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	102	90	109	
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	102	89	109	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 1002543)</b>									
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	98.6	93	105	
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	92.1	91	107	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	88.5	84	104	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	88.4	83	103	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	86.4	82	103	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	90.6	83	105	
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	92.3	83	105	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	87.6	82	106	
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	96.9	82	109	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	94.6	85	109	
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	94.3	94	106	
<b>EG020T: Total Metals by ICP-MS (QCLot: 1002545)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	102	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	97.3	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.3	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	94.8	87	109	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
<b>EG020T: Total Metals by ICP-MS (QCLot: 1002545) - continued</b>								
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	93.7	87	108
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	95.2	88	109
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	98.8	88	111
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.3	87	111
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	99.9	85	113
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	102	87	113
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	102	80	120
<b>EG020T: Total Metals by ICP-MS (QCLot: 1002547)</b>								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	107	80	120
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	103	90	110
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.6	86	111
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	97.7	87	109
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	99.7	87	108
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	100	88	109
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	103	88	111
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	101	87	111
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	108	85	113
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	107	87	113
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	103	80	120
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 1002544)</b>								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	91.9	81	114
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1007147)</b>								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	90.4	81	114
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1007149)</b>								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	86.0	81	114
<b>EK040P: Fluoride by PC Titrator (QCLot: 1004127)</b>								
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	109	85	112
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 1004192)</b>								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	104	80	115
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 1002687)</b>								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	104	94	107
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 1004193)</b>								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	106	89	114
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 1002688)</b>								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	106	94	108
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1007488)</b>								
EP005: Total Organic Carbon	----	1	mg/L	<1	100 mg/L	92.8	81	109





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1007489)</b>									
EP005: Total Organic Carbon	----	1	mg/L	<1	100 mg/L	94.8	81	109	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1003964)</b>									
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	100	81	119	
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	104	84	117	
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	95.9	83	114	
EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	40 µg/L	93.6	81	116	
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	96.8	82	118	
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	97.6	85	115	
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	93.6	81	113	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	91.5	76	111	
EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	91.9	79	109	
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	88.8	77	111	
EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	93.2	79	108	
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	90.9	80	110	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	86.6	75	111	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	83.0	68	111	
<b>EP074B: Oxygenated Compounds (QCLot: 1003964)</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	96.6	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	107	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	102	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	105	73	128	
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	112	75	129	
<b>EP074C: Sulfonated Compounds (QCLot: 1003964)</b>									
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	95.3	64	119	
<b>EP074D: Fumigants (QCLot: 1003964)</b>									
EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	96.3	74	117	
EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	102	83	118	
EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	98.2	74	109	
EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	98.4	70	109	
EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	105	81	116	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1003964)</b>									
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	91.6	61	137	
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	98.5	66	137	
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	92.9	67	135	
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	87.3	52	128	
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	91.5	76	125	
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	97.7	74	123	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike	Spike Recovery (%)	Recovery Limits (%)	
					Concentration	LCS	Low	High
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1003964) - continued</b>								
EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	98.4	75	120
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	63.9	37	120
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	20 µg/L	112	72	159
EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	98.0	78	117
EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	102	81	118
EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	100	83	118
EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	97.0	76	115
EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	96.7	75	117
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	92.7	72	111
EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	105	81	120
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	87.8	78	116
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	105	79	116
EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	107	85	119
EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	109	85	119
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	94.6	76	120
EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	97.4	78	110
EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	107	64	118
EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	98.4	51	113
EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	106	85	121
EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	106	84	118
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	95.1	64	109
EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	99.8	65	115
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	76.4	70	121
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 1003964)</b>								
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	99.0	85	115
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	88.4	82	116
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	94.5	81	112
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	93.5	80	110
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	95.5	80	110
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	95.3	80	112
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	96.6	84	111
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	91.6	70	114
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	95.6	78	116
<b>EP074G: Trihalomethanes (QCLot: 1003964)</b>								
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	101	82	118
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	96.2	75	112
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	96.1	73	108
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	92.4	68	107



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP074H: Naphthalene (QCLot: 1003964)</b>									
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	102	80	116	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1002522)</b>									
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	79.4	39	110	
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	78.9	40	124	
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	81.3	47	117	
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	81.8	51	118	
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	83.6	53	119	
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	57.6	51	113	
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	82.7	59	123	
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	83.0	58	123	
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	76.8	52	126	
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	82.1	55	123	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	78.3	52	131	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	86.1	57	126	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	79.5	56	126	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	81.3	53	123	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	82.8	53	125	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	83.6	53	125	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1002523)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	84.6	53	123	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	83.3	57	133	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	75.5	55	141	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1003965)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	93.3	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1003968)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	90.9	67	127	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1002523)</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	65.0	54	122	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	78.4	56	132	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	83.1	51	137	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1003965)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	92.8	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1003968)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	84.8	65	125	
<b>EP080: BTEXN (QCLot: 1003965)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	105	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	96.5	76	124	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP080: BTEXN (QCLot: 1003965) - continued</b>									
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	97.9	72	124	
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	97.4	72	130	
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	99.5	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	104	71	129	
<b>EP080: BTEXN (QCLot: 1003968)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	100	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	102	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	91.9	72	124	
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	89.5	72	130	
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	94.2	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	85.2	71	129	
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 1006714)</b>									
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.5 µg/L	110	70	130	
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.5 µg/L	101	70	130	
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.5 µg/L	108	70	130	
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.5 µg/L	102	70	130	
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.5 µg/L	106	70	130	
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	99.2	70	130	
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 1006714)</b>									
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	2.5 µg/L	103	70	130	
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	101	70	130	
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	108	70	130	
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	109	70	130	
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	105	70	130	
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	103	70	130	
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	101	70	130	
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	96.6	70	130	
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	104	70	130	
EP231X: Perfluorotridecanoic acid (PFTriDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	74.0	70	130	
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	75.0	70	150	
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 1006714)</b>									
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	102	70	130	
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	106	70	150	
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	108	70	150	
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	1.25 µg/L	104	70	150	





Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 1006714) - continued</b>									
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	122	70	150	
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	126	70	130	
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	127	70	130	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 1006714)</b>									
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.5 µg/L	101	70	130	
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.5 µg/L	113	70	130	
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.5 µg/L	108	70	130	
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.5 µg/L	122	70	130	

### Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery (%) MS	Recovery Limits (%)	
						Low	High
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 1002685)</b>							
EM1709371-002	GW80_14/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	80.8	70	130
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 1009657)</b>							
EM1709192-009	Anonymous	ED043: Total Oxidised Sulfur as SO4 2-	----	500 mg/L	129	70	130
<b>ED045G: Chloride by Discrete Analyser (QCLot: 1002686)</b>							
EM1709371-002	GW80_14/07/17	ED045G: Chloride	16887-00-6	400 mg/L	97.5	70	130
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 1002543)</b>							
EM1709340-001	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	94.0	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	83.2	81	133
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	85.0	71	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	84.4	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	83.7	75	133
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	86.7	64	134
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	86.4	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	89.3	75	131
<b>EG020T: Total Metals by ICP-MS (QCLot: 1002545)</b>							
EM1709361-001	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	90.8	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	89.0	75	129



Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike	SpikeRecovery(%)	Recovery Limits (%)	
				Concentration	MS	Low	High
<b>EG020T: Total Metals by ICP-MS (QCLot: 1002545) - continued</b>							
EM1709361-001	Anonymous	EG020A-T: Chromium	7440-47-3	1 mg/L	89.0	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	87.7	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	94.9	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	89.9	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	88.6	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	92.6	74	116
<b>EG020T: Total Metals by ICP-MS (QCLot: 1002547)</b>							
EM1709371-022	QC111_14/07/17	EG020A-T: Arsenic	7440-38-2	1 mg/L	112	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	107	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	107	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	107	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	114	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	110	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	109	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	114	74	116
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 1002544)</b>							
EM1709353-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	# 27.4	70	120
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1007147)</b>							
EM1709231-004	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	88.9	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1007149)</b>							
EM1709371-017	GW45_14/07/17	EG035T: Mercury	7439-97-6	0.01 mg/L	87.2	70	130
<b>EK040P: Fluoride by PC Titrator (QCLot: 1004127)</b>							
EM1709249-004	Anonymous	EK040P: Fluoride	16984-48-8	5 mg/L	86.0	70	130
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 1004192)</b>							
EM1709371-002	GW80_14/07/17	EK055G: Ammonia as N	7664-41-7	1 mg/L	92.6	70	130
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 1002687)</b>							
EM1709371-002	GW80_14/07/17	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	97.4	80	114
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 1004193)</b>							
EM1709371-002	GW80_14/07/17	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	105	70	130
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 1002688)</b>							
EM1709371-002	GW80_14/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	106	79	123
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1007488)</b>							
EM1709231-004	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	94.1	80	114
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1007489)</b>							
EM1709376-001	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	96.0	80	114



Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1003964)</b>							
EM1709371-002	GW80_14/07/17	EP074-WF: Benzene	71-43-2	20 µg/L	113	76	128
		EP074-WF: Toluene	108-88-3	20 µg/L	95.4	72	132
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1003964)</b>							
EM1709371-002	GW80_14/07/17	EP074-WF: 1,1-Dichloroethene	75-35-4	20 µg/L	102	63	129
		EP074-WF: Trichloroethene	79-01-6	20 µg/L	84.2	64	126
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 1003964)</b>							
EM1709371-002	GW80_14/07/17	EP074-WF: Chlorobenzene	108-90-7	20 µg/L	95.2	81	119
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1003965)</b>							
EM1709371-002	GW80_14/07/17	EP080: C6 - C9 Fraction	----	280 µg/L	75.4	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1003968)</b>							
EM1709361-001	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	79.4	43	125
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1003965)</b>							
EM1709371-002	GW80_14/07/17	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	74.0	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1003968)</b>							
EM1709361-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	76.0	44	122
<b>EP080: BTEXN (QCLot: 1003965)</b>							
EM1709371-002	GW80_14/07/17	EP080: Benzene	71-43-2	20 µg/L	111	68	130
		EP080: Toluene	108-88-3	20 µg/L	89.1	72	132
<b>EP080: BTEXN (QCLot: 1003968)</b>							
EM1709361-001	Anonymous	EP080: Benzene	71-43-2	20 µg/L	102	68	130
		EP080: Toluene	108-88-3	20 µg/L	103	72	132
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 1006714)</b>							
EM1709371-003	GW81_14/07/17	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.5 µg/L	96.6	50	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.5 µg/L	122	50	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.5 µg/L	113	50	130
		EP231X: Perfluoroheptane sulfonic acid (PFHps)	375-92-8	0.5 µg/L	92.6	50	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	99.8	50	130
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.5 µg/L	77.8	50	130
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 1006714)</b>							
EM1709371-003	GW81_14/07/17	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	82.4	50	130
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	87.6	50	130
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	84.2	50	130
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	118	50	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	92.2	50	130
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	92.0	50	130



Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 1006714) - continued</b>							
EM1709371-003	GW81_14/07/17	EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	91.4	50	130
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	80.6	50	130
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	114	50	130
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	73.4	50	130
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	66.3	50	150
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 1006714)</b>							
EM1709371-003	GW81_14/07/17	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	99.6	50	130
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	112	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	121	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	1.25 µg/L	106	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	126	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	75.4	50	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	78.2	50	130
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 1006714)</b>							
EM1709371-003	GW81_14/07/17	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.5 µg/L	90.4	50	130
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.5 µg/L	104	50	130
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.5 µg/L	82.8	50	130
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.5 µg/L	91.2	50	130



## QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM1709371	Page	: 1 of 15
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: MS AVERYLL COYNE	Telephone	: +61-3-8549 9608
Project	: 60537182	Date Samples Received	: 17-Jul-2017
Site	: ----	Issue Date	: 24-Jul-2017
Sampler	: BH, BP, JM	No. of samples received	: 25
Order number	: Task 3.2	No. of samples analysed	: 19

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

### Summary of Outliers

#### Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

#### Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

#### Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



**Outliers : Quality Control Samples**

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
<b>Matrix Spike (MS) Recoveries</b>							
EG035F: Dissolved Mercury by FIMS	EM1709353--001	Anonymous	Mercury	7439-97-6	27.4 %	70-120%	Recovery less than lower data quality objective

**Outliers : Analysis Holding Time Compliance**

Matrix: **WATER**

Method	Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EA005P: pH by PC Titrator</b>							
<b>Clear Plastic Bottle - Natural</b>							
GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	---	---	---	19-Jul-2017	14-Jul-2017	5
<b>EK057G: Nitrite as N by Discrete Analyser</b>							
<b>Clear Plastic Bottle - Natural</b>							
GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	---	---	---	18-Jul-2017	16-Jul-2017	2
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>							
<b>Clear Plastic Bottle - Natural</b>							
GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	---	---	---	18-Jul-2017	16-Jul-2017	2

**Outliers : Frequency of Quality Control Samples**

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
<b>Laboratory Duplicates (DUP)</b>					
PAH/Phenols (GC/MS - SIM)	0	10	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatle Fraction	0	14	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>					
PAH/Phenols (GC/MS - SIM)	0	10	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatle Fraction	0	14	0.00	5.00	NEPM 2013 B3 & ALS QC Standard



## Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EA005P: pH by PC Titrator</b>							
<b>Clear Plastic Bottle - Natural (EA005-P)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17, GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	----	----	----	19-Jul-2017	14-Jul-2017	✖
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>							
<b>Clear Plastic Bottle - Natural (EA015H)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17, GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	----	----	----	19-Jul-2017	21-Jul-2017	✔
<b>ED037P: Alkalinity by PC Titrator</b>							
<b>Clear Plastic Bottle - Natural (ED037-P)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17, GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	----	----	----	19-Jul-2017	28-Jul-2017	✔
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>							
<b>Clear Plastic Bottle - Natural (ED041G)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17, GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	----	----	----	18-Jul-2017	11-Aug-2017	✔



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>							
<b>Clear Plastic Bottle - Natural (ED043)</b> GW08_14/07/17, GW80_14/07/17, GW81_14/07/17, GW72_14/07/17, GW75_14/07/17, GW45_14/07/17, GW41_14/07/17, GW47_14/07/17, GW02_14/07/17, QC109_14/07/17	14-Jul-2017	21-Jul-2017	11-Aug-2017	✓	21-Jul-2017	11-Aug-2017	✓
<b>ED045G: Chloride by Discrete Analyser</b>							
<b>Clear Plastic Bottle - Natural (ED045G)</b> GW08_14/07/17, GW80_14/07/17, GW81_14/07/17, GW72_14/07/17, GW75_14/07/17, GW45_14/07/17, GW41_14/07/17, GW47_14/07/17, GW02_14/07/17, QC109_14/07/17	14-Jul-2017	----	----	----	18-Jul-2017	11-Aug-2017	✓
<b>ED093F: Dissolved Major Cations</b>							
<b>Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)</b> GW08_14/07/17, GW80_14/07/17, GW81_14/07/17, GW72_14/07/17, GW75_14/07/17, GW45_14/07/17, GW41_14/07/17, GW47_14/07/17, GW02_14/07/17, QC109_14/07/17	14-Jul-2017	----	----	----	19-Jul-2017	11-Aug-2017	✓
<b>EG020F: Dissolved Metals by ICP-MS</b>							
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)</b> GW08_14/07/17, GW80_14/07/17, GW81_14/07/17, GW72_14/07/17, GW75_14/07/17, QC314_14/07/17, GW45_14/07/17, GW41_14/07/17, GW47_14/07/17, GW02_14/07/17, QC109_14/07/17, QC111_14/07/17, QC112_14/07/17	14-Jul-2017	----	----	----	19-Jul-2017	10-Jan-2018	✓
<b>EG020T: Total Metals by ICP-MS</b>							
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)</b> GW08_14/07/17, GW80_14/07/17, GW81_14/07/17, GW72_14/07/17, GW75_14/07/17, QC208_14/07/17, QC314_14/07/17, GW45_14/07/17, GW41_14/07/17, GW47_14/07/17, GW02_14/07/17, QC109_14/07/17, QC111_14/07/17, QC112_14/07/17	14-Jul-2017	18-Jul-2017	10-Jan-2018	✓	19-Jul-2017	10-Jan-2018	✓





Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EG035F: Dissolved Mercury by FIMS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17, QC112_14/07/17	GW80_14/07/17, GW72_14/07/17, QC314_14/07/17, GW41_14/07/17, GW02_14/07/17, QC111_14/07/17,	14-Jul-2017	----	----	----	19-Jul-2017	11-Aug-2017	✓
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, QC314_14/07/17, GW41_14/07/17, GW02_14/07/17, QC111_14/07/17,	GW80_14/07/17, GW72_14/07/17, QC208_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17, QC112_14/07/17	14-Jul-2017	----	----	----	20-Jul-2017	11-Aug-2017	✓
<b>EK040P: Fluoride by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural (EK040P)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	----	----	----	19-Jul-2017	11-Aug-2017	✓
<b>EK055G: Ammonia as N by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Sulfuric Acid (EK055G)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	----	----	----	19-Jul-2017	11-Aug-2017	✓
<b>EK057G: Nitrite as N by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Natural (EK057G)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	----	----	----	18-Jul-2017	16-Jul-2017	*



Matrix: WATER

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Sulfuric Acid (EK059G)</b>								
GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	----	----	----	19-Jul-2017	11-Aug-2017	✓
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>								
<b>Clear Plastic Bottle - Natural (EK071G)</b>								
GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	----	----	----	18-Jul-2017	16-Jul-2017	*
<b>EP005: Total Organic Carbon (TOC)</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP005)</b>								
GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	----	----	----	20-Jul-2017	11-Aug-2017	✓
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b>								
GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	19-Jul-2017	28-Jul-2017	✓	19-Jul-2017	28-Jul-2017	✓
<b>EP074B: Oxygenated Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b>								
GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	19-Jul-2017	28-Jul-2017	✓	19-Jul-2017	28-Jul-2017	✓
<b>EP074C: Sulfonated Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b>								
GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	19-Jul-2017	28-Jul-2017	✓	19-Jul-2017	28-Jul-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP074D: Fumigants</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	19-Jul-2017	28-Jul-2017	✓	19-Jul-2017	28-Jul-2017	✓
<b>EP074E: Halogenated Aliphatic Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	19-Jul-2017	28-Jul-2017	✓	19-Jul-2017	28-Jul-2017	✓
<b>EP074F: Halogenated Aromatic Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	19-Jul-2017	28-Jul-2017	✓	19-Jul-2017	28-Jul-2017	✓
<b>EP074G: Trihalomethanes</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	19-Jul-2017	28-Jul-2017	✓	19-Jul-2017	28-Jul-2017	✓
<b>EP074H: Naphthalene</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	19-Jul-2017	28-Jul-2017	✓	19-Jul-2017	28-Jul-2017	✓
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
<b>Amber Glass Bottle - Unpreserved (EP075(SIM))</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	18-Jul-2017	21-Jul-2017	✓	20-Jul-2017	27-Aug-2017	✓



Matrix: WATER

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP080/071: Total Petroleum Hydrocarbons</b>							
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, QC314_14/07/17, GW41_14/07/17, GW02_14/07/17, QC111_14/07/17, GW80_14/07/17, GW72_14/07/17, QC208_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17, QC112_14/07/17	14-Jul-2017	18-Jul-2017	21-Jul-2017	✓	20-Jul-2017	27-Aug-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, QC209_14/07/17, QC314_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17, QC112_14/07/17, GW80_14/07/17, GW72_14/07/17, QC208_14/07/17, QC210_14/07/17, QC315_14/07/17, GW41_14/07/17, GW02_14/07/17, QC111_14/07/17, QC113_14/07/17	14-Jul-2017	19-Jul-2017	28-Jul-2017	✓	19-Jul-2017	28-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> QC114_17/07/17	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>							
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, QC314_14/07/17, GW41_14/07/17, GW02_14/07/17, QC111_14/07/17, GW80_14/07/17, GW72_14/07/17, QC208_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17, QC112_14/07/17	14-Jul-2017	18-Jul-2017	21-Jul-2017	✓	20-Jul-2017	27-Aug-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, QC209_14/07/17, QC314_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17, QC112_14/07/17, GW80_14/07/17, GW72_14/07/17, QC208_14/07/17, QC210_14/07/17, QC315_14/07/17, GW41_14/07/17, GW02_14/07/17, QC111_14/07/17, QC113_14/07/17	14-Jul-2017	19-Jul-2017	28-Jul-2017	✓	19-Jul-2017	28-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> QC114_17/07/17	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓





Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080: BTEXN</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, QC209_14/07/17, QC314_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17, QC112_14/07/17,	GW80_14/07/17, GW72_14/07/17, QC208_14/07/17, QC210_14/07/17, QC315_14/07/17, GW41_14/07/17, GW02_14/07/17, QC111_14/07/17, QC113_14/07/17	14-Jul-2017	19-Jul-2017	28-Jul-2017	✓	19-Jul-2017	28-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> QC114_17/07/17		17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW81_14/07/17, GW41_14/07/17	GW72_14/07/17,	14-Jul-2017	----	----	----	20-Jul-2017	10-Jan-2018	✓
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW81_14/07/17, GW41_14/07/17	GW72_14/07/17,	14-Jul-2017	----	----	----	20-Jul-2017	10-Jan-2018	✓
<b>EP231C: Perfluoroalkyl Sulfonamides</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW81_14/07/17, GW41_14/07/17	GW72_14/07/17,	14-Jul-2017	----	----	----	20-Jul-2017	10-Jan-2018	✓
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW81_14/07/17, GW41_14/07/17	GW72_14/07/17,	14-Jul-2017	----	----	----	20-Jul-2017	10-Jan-2018	✓
<b>EP231P: PFAS Sums</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW81_14/07/17, GW41_14/07/17	GW72_14/07/17,	14-Jul-2017	----	----	----	20-Jul-2017	10-Jan-2018	✓



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaural	Actual	Expected	Evaluation	
<b>Laboratory Duplicates (DUP)</b>							
Alkalinity by PC Titrator	ED037-P	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	15	13.33	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	17	11.76	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	12	16.67	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	10	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	17	11.76	10.00	✔	NEPM 2013 B3 & ALS QC Standard
pH by PC Titrator	EA005-P	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	10	20.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	39	10.26	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	3	22	13.64	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	4	35	11.43	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	2	12	16.67	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	14	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	36	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	2	19	10.53	10.00	✔	NEPM 2013 B3 & ALS QC Standard
<b>Laboratory Control Samples (LCS)</b>							
Alkalinity by PC Titrator	ED037-P	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	15	6.67	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	17	5.88	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	12	8.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	10	10.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	5.88	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	10	10.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard



Matrix: **WATER** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Control Samples (LCS) - Continued</b>							
Total Dissolved Solids (High Level)	EA015H	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	39	5.13	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	22	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	35	5.71	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	36	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
<b>Method Blanks (MB)</b>							
Ammonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	39	5.13	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	22	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	35	5.71	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	14	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	36	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>							
Ammonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	10	0.00	5.00	*	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Matrix Spikes (MS) - Continued</b>							
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	39	5.13	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	22	9.09	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	35	5.71	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	1	12	8.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	14	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	36	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	1	19	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard





## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by PC Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of 'filterable' residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM (2013) Schedule B(3)
Alkalinity by PC Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM (2013) Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Oxidised Sulfur as SO4 2-	ED043	WATER	In house: The sample is treated with Peroxide to convert all Sulfur species to Sulfate. Sulfate in the sample can then be determined by ICPAES and reported as TOS as SO4 2-.
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm APHA 21st edition seal method 2 017-1-L april 2003
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM (2013) Schedule B(3)  Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM (2013) Schedule B(3)  Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM (2013) Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.



Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Fluoride by PC Titrator	EK040P	WATER	In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3)
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO <sub>2</sub> - B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO <sub>3</sub> - F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined separately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite and Nitrate as N (NO <sub>x</sub> ) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO <sub>3</sub> - F. Combined oxidised Nitrogen (NO <sub>2</sub> +NO <sub>3</sub> ) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with orthophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM (2013) Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Volatile Organic Compounds WF Detection Limits	EP074-WF	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)



<i>Analytical Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with methanol. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers.
<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Total Oxidisable Sulfur as SO4 2- Prep	ED043-PR	WATER	In house
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (2013) Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.



SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1709371

Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: MS AVERYLL COYNE	Contact	: Carol Walsh
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: averyll.coyne@aecom.com	E-mail	: carol.walsh@alsglobal.com
Telephone	: +61 03 9653 1234	Telephone	: +61-3-8549 9608
Facsimile	: +61 03 9654 7117	Facsimile	: +61-3-8549 9601
Project	: 60537182	Page	: 1 of 4
Order number	: Task 3.2	Quote number	: EM2016AECOMAU0012 (ME/199/16)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: BH, BP, JM		

Dates

Date Samples Received	: 17-Jul-2017 09:30	Issue Date	: 18-Jul-2017
Client Requested Due Date	: 24-Jul-2017	Scheduled Reporting Date	: <b>24-Jul-2017</b>

Delivery Details

Mode of Delivery	: Undefined	Security Seal	: Intact.
No. of coolers/boxes	: 4	Temperature	: 1.1°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 25 / 19

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.
- **Analytical work for this work order will be conducted at ALS Springvale and ALS Sydney.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**





## Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

### Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EG020F Dissolved Metals by ICPMS	WATER - EG020T Total Recoverable Metals by ICPMS (including	WATER - EK059G Nitrite plus Nitrate as N (NOx) by Discrete	WATER - EP005 Total Organic Carbon (TOC)	WATER - Ionic Balance suite Ionic Balance suite	WATER - W-02T 8 metals (Total)	WATER - W-26 TRH/BTEXN/PAH/8 Metals
EM1709371-001	14-Jul-2017 00:00	GW08_14/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709371-002	14-Jul-2017 00:00	GW80_14/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709371-003	14-Jul-2017 00:00	GW81_14/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709371-004	14-Jul-2017 00:00	GW72_14/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709371-005	14-Jul-2017 00:00	GW75_14/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709371-006	14-Jul-2017 00:00	QC208_14/07/17		✓					
EM1709371-010	14-Jul-2017 00:00	QC314_14/07/17	✓	✓			✓		
EM1709371-017	14-Jul-2017 00:00	GW45_14/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709371-018	14-Jul-2017 00:00	GW41_14/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709371-019	14-Jul-2017 00:00	GW47_14/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709371-020	14-Jul-2017 00:00	GW02_14/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709371-021	14-Jul-2017 00:00	QC109_14/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709371-022	14-Jul-2017 00:00	QC111_14/07/17	✓	✓			✓		
EM1709371-023	14-Jul-2017 00:00	QC112_14/07/17	✓	✓			✓		

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) WATER No analysis requested	WATER - ED043 Total Oxidised Sulfur as SO4 2-	WATER - EP074-WF Full VOCs with WF DL incl DCM & Acetone	WATER - EP231X PFAS - Full Suite (28 analytes)	WATER - W-05 TRH/BTEXN/8 Metals	WATER - W-05T TRH/BTEXN/8 Metals (Total)	WATER - W-18 TRH(C6 - C9)/BTEXN
EM1709371-001	14-Jul-2017 00:00	GW08_14/07/17		✓	✓				
EM1709371-002	14-Jul-2017 00:00	GW80_14/07/17		✓	✓				
EM1709371-003	14-Jul-2017 00:00	GW81_14/07/17		✓	✓	✓			
EM1709371-004	14-Jul-2017 00:00	GW72_14/07/17		✓	✓	✓			
EM1709371-005	14-Jul-2017 00:00	GW75_14/07/17		✓	✓				
EM1709371-006	14-Jul-2017 00:00	QC208_14/07/17						✓	
EM1709371-007	14-Jul-2017 00:00	QC209_14/07/17							✓
EM1709371-008	14-Jul-2017 00:00	QC210_14/07/17							✓
EM1709371-009	14-Jul-2017 00:00	QC312_14/07/17	✓						
EM1709371-010	14-Jul-2017 00:00	QC314_14/07/17					✓		



			(On Hold) WATER No analysis requested	WATER - ED043 Total Oxidised Sulfur as SO4 2-	WATER - EP074-WF Full VOCs with WF DL incl DCM & Acetone	WATER - EP231X PFAS - Full Suite (28 analytes)	WATER - W-05 TRH/BTEXN/8 Metals	WATER - W-05T TRH/BTEXN/8 Metals (Total)	WATER - W-18 TRH(C6 - C9)/BTEXN
EM1709371-011	14-Jul-2017 00:00	GW74_14/07/17	✓						
EM1709371-012	14-Jul-2017 00:00	GW69_14/07/17	✓						
EM1709371-013	14-Jul-2017 00:00	GW61_14/07/17	✓						
EM1709371-014	14-Jul-2017 00:00	GW65_14/07/17	✓						
EM1709371-015	14-Jul-2017 00:00	GW30_14/07/17	✓						
EM1709371-016	14-Jul-2017 00:00	QC315_14/07/17							✓
EM1709371-017	14-Jul-2017 00:00	GW45_14/07/17		✓	✓				
EM1709371-018	14-Jul-2017 00:00	GW41_14/07/17		✓	✓	✓			
EM1709371-019	14-Jul-2017 00:00	GW47_14/07/17		✓	✓				
EM1709371-020	14-Jul-2017 00:00	GW02_14/07/17		✓	✓				
EM1709371-021	14-Jul-2017 00:00	QC109_14/07/17		✓	✓				
EM1709371-022	14-Jul-2017 00:00	QC111_14/07/17					✓		
EM1709371-023	14-Jul-2017 00:00	QC112_14/07/17					✓		
EM1709371-024	14-Jul-2017 00:00	QC113_14/07/17							✓
EM1709371-025	17-Jul-2017 00:00	QC114_17/07/17							✓

### Proactive Holding Time Report

The following table summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory.

Matrix: **WATER**

Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method	Client Sample ID(s)	Container	Due for extraction	Due for analysis	Samples Received		Instructions Received	
					Date	Evaluation	Date	Evaluation
<b>EA005-P: pH by PC Titrator</b>								
GW02_14/07/17		Clear Plastic Bottle - Natural	----	14-Jul-2017	17-Jul-2017	✘	----	----
GW08_14/07/17		Clear Plastic Bottle - Natural	----	14-Jul-2017	17-Jul-2017	✘	----	----
GW41_14/07/17		Clear Plastic Bottle - Natural	----	14-Jul-2017	17-Jul-2017	✘	----	----
GW45_14/07/17		Clear Plastic Bottle - Natural	----	14-Jul-2017	17-Jul-2017	✘	----	----
GW47_14/07/17		Clear Plastic Bottle - Natural	----	14-Jul-2017	17-Jul-2017	✘	----	----
GW72_14/07/17		Clear Plastic Bottle - Natural	----	14-Jul-2017	17-Jul-2017	✘	----	----
GW75_14/07/17		Clear Plastic Bottle - Natural	----	14-Jul-2017	17-Jul-2017	✘	----	----
GW80_14/07/17		Clear Plastic Bottle - Natural	----	14-Jul-2017	17-Jul-2017	✘	----	----
GW81_14/07/17		Clear Plastic Bottle - Natural	----	14-Jul-2017	17-Jul-2017	✘	----	----
QC109_14/07/17		Clear Plastic Bottle - Natural	----	14-Jul-2017	17-Jul-2017	✘	----	----
<b>EK057G: Nitrite as N by Discrete Analyser</b>								
GW02_14/07/17		Clear Plastic Bottle - Natural	----	16-Jul-2017	17-Jul-2017	✘	----	----
GW08_14/07/17		Clear Plastic Bottle - Natural	----	16-Jul-2017	17-Jul-2017	✘	----	----
GW41_14/07/17		Clear Plastic Bottle - Natural	----	16-Jul-2017	17-Jul-2017	✘	----	----
GW45_14/07/17		Clear Plastic Bottle - Natural	----	16-Jul-2017	17-Jul-2017	✘	----	----
GW47_14/07/17		Clear Plastic Bottle - Natural	----	16-Jul-2017	17-Jul-2017	✘	----	----
GW72_14/07/17		Clear Plastic Bottle - Natural	----	16-Jul-2017	17-Jul-2017	✘	----	----
GW75_14/07/17		Clear Plastic Bottle - Natural	----	16-Jul-2017	17-Jul-2017	✘	----	----
GW80_14/07/17		Clear Plastic Bottle - Natural	----	16-Jul-2017	17-Jul-2017	✘	----	----
GW81_14/07/17		Clear Plastic Bottle - Natural	----	16-Jul-2017	17-Jul-2017	✘	----	----
QC109_14/07/17		Clear Plastic Bottle - Natural	----	16-Jul-2017	17-Jul-2017	✘	----	----
<b>EK071G: Reactive Phosphorus as P-By Discrete Analyser</b>								
GW02_14/07/17		Clear Plastic Bottle - Natural	----	16-Jul-2017	17-Jul-2017	✘	----	----



## CERTIFICATE OF ANALYSIS

<b>Work Order</b>	: <b>EM1709371</b>	<b>Page</b>	: 1 of 35
<b>Amendment</b>	: <b>1</b>	<b>Laboratory</b>	: Environmental Division Melbourne
<b>Client</b>	: <b>AECOM Australia Pty Ltd</b>	<b>Contact</b>	: Carol Walsh
<b>Contact</b>	: MS AVERYLL COYNE	<b>Address</b>	: 4 Westall Rd Springvale VIC Australia 3171
<b>Address</b>	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	<b>Telephone</b>	: +61-3-8549 9608
<b>Telephone</b>	: +61 03 9653 1234	<b>Date Samples Received</b>	: 17-Jul-2017 09:30
<b>Project</b>	: 60537182	<b>Date Analysis Commenced</b>	: 18-Jul-2017
<b>Order number</b>	: Task 3.2	<b>Issue Date</b>	: 04-Aug-2017 17:02
<b>C-O-C number</b>	: ----		
<b>Sampler</b>	: BH, BP, JM		
<b>Site</b>	: ----		
<b>Quote number</b>	: ME/199/16		
<b>No. of samples received</b>	: 25		
<b>No. of samples analysed</b>	: 24		



Accreditation No. 825  
Accredited for compliance with  
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

**Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.**

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Chris Lemaitre	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Gaston Allende	R&D Chemist	Sydney Organics, Smithfield, NSW
Nancy Wang	Senior Semivolatile Instrument Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC





## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
LOR = Limit of reporting  
^ = This result is computed from individual analyte detections at or above the level of reporting  
ø = ALS is not NATA accredited for these tests.  
~ = Indicates an estimated value.

- EG035T: EM1709371 #5, result for Mercury has been confirmed by re-preparation and re-analysis.
- EP074-WF: Sample EM1709371\_001, 002, 003, 004, 005, 017, 018, 019, 020 have been confirmed by re-analysis.
- TDS by method EA-015 for EM1709371 #3,18 high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- EG035F: EM1709353-001 Poor matrix spike recovery for dissolved mercury due to sample matrix. Confirmed by re-extraction and re-analysis.
- It is recognised that total metals is less than dissolved metals for EM1709371 #2 and 20. However, the difference is within experimental variation of the methods.
- EK057G: Results for EM1709371-002 and 019 have been confirmed by re-preparation and re-analysis.
- ED041G: Sample EM1709371-012 has been diluted prior to analysis due to sample matrix and LORs have been raised accordingly.
- EP074-WF: Particular samples EM1709371\_[13, 14] shows positive hits. Confirmed by re-analysis.
- TDS by method EA-015 for EM1709371 #15 may bias high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- Amendment (31/07/2017): This report has been amended and re-released to allow the reporting of additional analytical data.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- ED045G: The presence of thiocyanate can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- EG035T: EM1709371-011,-013,-014 sample results for total mercury confirmed by re-extraction and re-analysis.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW08_14/07/17	GW80_14/07/17	GW81_14/07/17	GW72_14/07/17	GW75_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-001	EM1709371-002	EM1709371-003	EM1709371-004	EM1709371-005	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.43	7.19	7.08	6.52	7.06	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	956	769	1200	562	570	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	424	454	478	376	328	
Total Alkalinity as CaCO3	----	1	mg/L	424	454	478	376	328	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	262	169	332	90	149	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	337	211	512	113	199	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	39	40	56	22	16	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	206	109	174	128	115	
Magnesium	7439-95-4	1	mg/L	30	48	60	13	23	
Sodium	7440-23-5	1	mg/L	43	66	99	34	41	
Potassium	7440-09-7	1	mg/L	14	26	24	6	10	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	<0.01	0.02	0.01	<0.01	<0.01	
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.001	<0.001	<0.001	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0003	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	0.002	0.002	<0.001	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Manganese	7439-96-5	0.001	mg/L	0.024	0.235	0.182	0.012	0.012	
Nickel	7440-02-0	0.001	mg/L	0.001	0.009	0.007	0.004	0.001	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Zinc	7440-66-6	0.005	mg/L	<0.005	0.006	<0.005	<0.005	<0.005	
Iron	7439-89-6	0.05	mg/L	0.16	2.90	5.49	0.81	0.07	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.86	1.27	2.91	0.30	1.85	
Arsenic	7440-38-2	0.001	mg/L	0.006	0.006	0.010	0.005	0.012	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW08_14/07/17	GW80_14/07/17	GW81_14/07/17	GW72_14/07/17	GW75_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-001	EM1709371-002	EM1709371-003	EM1709371-004	EM1709371-005	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0001	<0.0001	0.0002	
Chromium	7440-47-3	0.001	mg/L	0.004	0.005	0.012	0.002	0.006	
Copper	7440-50-8	0.001	mg/L	0.002	0.003	0.007	0.002	0.024	
Nickel	7440-02-0	0.001	mg/L	0.011	0.011	0.020	0.018	0.018	
Lead	7439-92-1	0.001	mg/L	0.005	0.003	0.011	0.001	0.114	
Zinc	7440-66-6	0.005	mg/L	0.007	0.028	0.053	0.019	0.171	
Manganese	7439-96-5	0.001	mg/L	0.188	0.274	0.331	0.063	0.108	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	3.12	11.9	19.4	4.87	4.57	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	0.0005	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.2	0.8	0.8	0.3	0.2	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	2.37	2.51	1.46	2.43	0.60	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	0.01	0.15	<0.01	0.01	0.08	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	0.02	0.11	0.01	0.01	2.01	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	0.03	0.26	0.01	0.02	2.09	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	15.0	13.7	18.0	10.0	10.1	
Total Cations	----	0.01	meq/L	15.0	12.9	18.5	9.09	9.67	
Ionic Balance	----	0.01	%	0.16	2.97	1.36	4.80	2.21	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	10	17	28	8	4	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW08_14/07/17	GW80_14/07/17	GW81_14/07/17	GW72_14/07/17	GW75_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-001	EM1709371-002	EM1709371-003	EM1709371-004	EM1709371-005	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	<1	<1	<1	<1	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	<1	<1	<1	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	<1	<1	<1	
Styrene	100-42-5	1	µg/L	<1	<1	<1	<1	<1	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	<1	<1	<1	
Isopropylbenzene	98-82-8	1	µg/L	<1	<1	<1	<1	<1	
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	<1	<1	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	<1	<1	<1	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	<1	<1	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	<1	<1	<1	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	<1	<1	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	<1	<1	<1	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	<10	<10	<10	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	<10	<10	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	<10	<10	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	<10	<10	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	<10	<10	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	<10	<10	<10	
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	<10	
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	<10.0	<10.0	<10.0	
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	<10	
Chloroethane	75-00-3	10	µg/L	<10	<10	<10	<10	<10	
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	<10	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW08_14/07/17	GW80_14/07/17	GW81_14/07/17	GW72_14/07/17	GW75_14/07/17
Client sampling date / time					14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709371-001	EM1709371-002	EM1709371-003	EM1709371-004	EM1709371-005	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	<1	
Iodomethane	74-88-4	1	µg/L	<1	<1	<1	<1	<1	
Methylene chloride	75-09-2	4	µg/L	<4	<4	<4	<4	<4	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	<1	<1	<1	
1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	<1	<1	<1	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	2	<1	<1	<1	<1	
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	<1	
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	<1	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	<1	
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	<1	
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	<1	
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	<1	
1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	<1	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	<1	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	<1	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	<1	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	<1	<1	<1	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	<1	
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	<1	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	<1	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	<1	<1	<1	<1	
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	<1	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	<1	<1	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	<1	
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	<1	<1	<1	
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	<1	<1	<1	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	<1	<1	<1	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074G: Trihalomethanes</b>									



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW08_14/07/17	GW80_14/07/17	GW81_14/07/17	GW72_14/07/17	GW75_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-001	EM1709371-002	EM1709371-003	EM1709371-004	EM1709371-005	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	<1	<1	<1	<1	<1	
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	<1	<1	<1	
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	<1	
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<b>1.2</b>	
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<b>1.6</b>	
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<b>3.1</b>	
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<b>2.9</b>	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<b>1.4</b>	
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<b>1.1</b>	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<b>1.9</b>	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<b>1.8</b>	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	<1.0	<1.0	<b>1.3</b>	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<b>16.3</b>	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<b>2.2</b>	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW08_14/07/17	GW80_14/07/17	GW81_14/07/17	GW72_14/07/17	GW75_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-001	EM1709371-002	EM1709371-003	EM1709371-004	EM1709371-005	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	120	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	120	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	----	<0.02	<0.02	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	----	0.02	<0.02	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	----	0.32	<0.02	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	----	<0.02	<0.02	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	----	0.27	<0.01	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	----	<0.02	<0.02	----	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	----	0.2	<0.1	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	----	1.00	<0.02	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	----	0.68	<0.02	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	----	0.63	<0.02	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW08_14/07/17	GW80_14/07/17	GW81_14/07/17	GW72_14/07/17	GW75_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-001	EM1709371-002	EM1709371-003	EM1709371-004	EM1709371-005	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	----	0.41	<0.01	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	----	<0.02	<0.02	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	----	<0.02	<0.02	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	----	<0.02	<0.02	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	----	<0.02	<0.02	----	
Perfluorotridecanoic acid (PFTTrDA)	72629-94-8	0.02	µg/L	----	----	<0.02	<0.02	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	----	<0.05	<0.05	----	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	----	<0.02	<0.02	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	----	<0.05	<0.05	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	----	<0.05	<0.05	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	----	----	<0.05	<0.05	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	----	<0.05	<0.05	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	----	<0.02	<0.02	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	----	<0.02	<0.02	----	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	----	<0.05	<0.05	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	----	<0.05	<0.05	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	----	<0.05	<0.05	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW08_14/07/17	GW80_14/07/17	GW81_14/07/17	GW72_14/07/17	GW75_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-001	EM1709371-002	EM1709371-003	EM1709371-004	EM1709371-005	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	----	<0.05	<0.05	----	
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	----	----	3.53	<0.01	----	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	----	0.59	<0.01	----	
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	----	3.51	<0.01	----	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	110	106	108	103	107	
Toluene-D8	2037-26-5	1	%	114	111	110	108	109	
4-Bromofluorobenzene	460-00-4	1	%	107	104	108	101	103	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	25.4	27.3	27.6	29.1	28.4	
2-Chlorophenol-D4	93951-73-6	1	%	77.2	81.1	81.6	84.6	82.0	
2,4,6-Tribromophenol	118-79-6	1	%	69.7	74.0	75.0	82.8	76.8	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	74.0	80.5	81.2	83.9	82.3	
Anthracene-d10	1719-06-8	1	%	82.8	82.8	86.6	91.2	85.8	
4-Terphenyl-d14	1718-51-0	1	%	86.8	84.8	85.2	94.2	86.0	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	117	114	115	110	114	
Toluene-D8	2037-26-5	2	%	107	104	104	101	102	
4-Bromofluorobenzene	460-00-4	2	%	102	102	103	99.1	101	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	----	----	99.2	94.7	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC208_14/07/17	QC209_14/07/17	QC210_14/07/17	QC314_14/07/17	GW74_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-006	EM1709371-007	EM1709371-008	EM1709371-010	EM1709371-011	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	----	----	----	----	7.30	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	----	----	----	----	1090	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	----	----	----	----	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	----	----	----	----	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	----	----	----	----	610	
Total Alkalinity as CaCO3	----	1	mg/L	----	----	----	----	610	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	----	----	----	----	262	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	----	----	----	----	424	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	----	----	----	----	47	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	----	----	----	----	160	
Magnesium	7439-95-4	1	mg/L	----	----	----	----	73	
Sodium	7440-23-5	1	mg/L	----	----	----	----	146	
Potassium	7440-09-7	1	mg/L	----	----	----	----	22	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	----	----	----	<0.01	0.01	
Arsenic	7440-38-2	0.001	mg/L	----	----	----	<0.001	0.003	
Cadmium	7440-43-9	0.0001	mg/L	----	----	----	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	----	----	----	<0.001	0.001	
Copper	7440-50-8	0.001	mg/L	----	----	----	<0.001	0.003	
Lead	7439-92-1	0.001	mg/L	----	----	----	<0.001	0.001	
Manganese	7439-96-5	0.001	mg/L	----	----	----	----	0.390	
Nickel	7440-02-0	0.001	mg/L	----	----	----	<0.001	0.010	
Selenium	7782-49-2	0.01	mg/L	----	----	----	<0.01	<0.01	
Zinc	7440-66-6	0.005	mg/L	----	----	----	<0.005	0.019	
Iron	7439-89-6	0.05	mg/L	----	----	----	<0.05	7.57	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	<0.01	----	----	<0.01	22.5	
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	<0.001	0.061	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC208_14/07/17	QC209_14/07/17	QC210_14/07/17	QC314_14/07/17	GW74_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-006	EM1709371-007	EM1709371-008	EM1709371-010	EM1709371-011	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	<0.0001	<b>0.0003</b>	
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	<0.001	<b>0.079</b>	
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	<0.001	<b>0.031</b>	
Nickel	7440-02-0	0.001	mg/L	<0.001	----	----	<0.001	<b>0.080</b>	
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	<0.001	<b>0.404</b>	
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	<0.005	<b>0.134</b>	
Manganese	7439-96-5	0.001	mg/L	----	----	----	----	<b>0.610</b>	
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	<0.05	----	----	<0.05	<b>64.8</b>	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	----	----	----	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	<0.0001	<b>0.0001</b>	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	----	----	----	----	<b>0.3</b>	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	----	----	----	----	<b>9.98</b>	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	----	----	----	----	<b>0.02</b>	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	----	----	----	----	<b>0.01</b>	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	----	----	----	----	<b>0.03</b>	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	----	----	----	----	<0.01	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	----	----	----	----	<b>19.0</b>	
Total Cations	----	0.01	meq/L	----	----	----	----	<b>20.9</b>	
Ionic Balance	----	0.01	%	----	----	----	----	<b>4.86</b>	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	----	----	----	----	<b>11</b>	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	----	----	----	----	<1	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC208_14/07/17	QC209_14/07/17	QC210_14/07/17	QC314_14/07/17	GW74_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-006	EM1709371-007	EM1709371-008	EM1709371-010	EM1709371-011	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	----	----	----	----	<1	
Ethylbenzene	100-41-4	1	µg/L	----	----	----	----	<1	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	----	----	----	----	<1	
Styrene	100-42-5	1	µg/L	----	----	----	----	<1	
ortho-Xylene	95-47-6	1	µg/L	----	----	----	----	<1	
Isopropylbenzene	98-82-8	1	µg/L	----	----	----	----	<1	
n-Propylbenzene	103-65-1	1	µg/L	----	----	----	----	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	----	----	----	----	<1	
sec-Butylbenzene	135-98-8	1	µg/L	----	----	----	----	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	----	----	----	----	<1	
tert-Butylbenzene	98-06-6	1	µg/L	----	----	----	----	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	----	----	----	----	<1	
n-Butylbenzene	104-51-8	1	µg/L	----	----	----	----	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	----	----	----	----	<10	
Vinyl Acetate	108-05-4	10	µg/L	----	----	----	----	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	----	----	----	----	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	----	----	----	----	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	----	----	----	----	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	----	----	----	----	<1	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	----	----	----	----	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	----	----	----	----	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	----	----	----	----	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	----	----	----	----	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	----	----	----	----	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	----	----	----	----	<10	
Chloromethane	74-87-3	10	µg/L	----	----	----	----	<10	
Vinyl chloride	75-01-4	10.0	µg/L	----	----	----	----	<10.0	
Bromomethane	74-83-9	10	µg/L	----	----	----	----	<10	
Chloroethane	75-00-3	10	µg/L	----	----	----	----	<10	
Trichlorofluoromethane	75-69-4	10	µg/L	----	----	----	----	<10	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC208_14/07/17	QC209_14/07/17	QC210_14/07/17	QC314_14/07/17	GW74_14/07/17
Client sampling date / time					14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709371-006	EM1709371-007	EM1709371-008	EM1709371-010	EM1709371-011	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	----	----	----	----	----	<1
Iodomethane	74-88-4	1	µg/L	----	----	----	----	----	<1
Methylene chloride	75-09-2	4	µg/L	----	----	----	----	----	<4
trans-1,2-Dichloroethene	156-60-5	1	µg/L	----	----	----	----	----	<1
1,1-Dichloroethane	75-34-3	1	µg/L	----	----	----	----	----	<1
cis-1,2-Dichloroethene	156-59-2	1	µg/L	----	----	----	----	----	<1
1,1,1-Trichloroethane	71-55-6	1	µg/L	----	----	----	----	----	<1
1,1-Dichloropropylene	563-58-6	1	µg/L	----	----	----	----	----	<1
Carbon Tetrachloride	56-23-5	1	µg/L	----	----	----	----	----	<1
1,2-Dichloroethane	107-06-2	1	µg/L	----	----	----	----	----	<1
Trichloroethene	79-01-6	1	µg/L	----	----	----	----	----	<1
Dibromomethane	74-95-3	1	µg/L	----	----	----	----	----	<1
1,1,2-Trichloroethane	79-00-5	1	µg/L	----	----	----	----	----	<1
1,3-Dichloropropane	142-28-9	1	µg/L	----	----	----	----	----	<1
Tetrachloroethene	127-18-4	1	µg/L	----	----	----	----	----	<1
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	----	----	----	----	----	<1
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	----	----	----	----	----	<1
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	----	----	----	----	----	<1
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	----	----	----	----	----	<1
1,2,3-Trichloropropane	96-18-4	1	µg/L	----	----	----	----	----	<1
Pentachloroethane	76-01-7	1	µg/L	----	----	----	----	----	<1
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	----	----	----	----	----	<1
Hexachlorobutadiene	87-68-3	1.0	µg/L	----	----	----	----	----	<1.0
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	----	----	----	----	----	<1
Bromobenzene	108-86-1	1	µg/L	----	----	----	----	----	<1
2-Chlorotoluene	95-49-8	1	µg/L	----	----	----	----	----	<1
4-Chlorotoluene	106-43-4	1	µg/L	----	----	----	----	----	<1
1,3-Dichlorobenzene	541-73-1	1	µg/L	----	----	----	----	----	<1
1,4-Dichlorobenzene	106-46-7	1.0	µg/L	----	----	----	----	----	<1.0
1,2-Dichlorobenzene	95-50-1	1	µg/L	----	----	----	----	----	<1
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	----	----	----	----	----	<1
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	----	----	----	----	----	<1
<b>EP074G: Trihalomethanes</b>									





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC208_14/07/17	QC209_14/07/17	QC210_14/07/17	QC314_14/07/17	GW74_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-006	EM1709371-007	EM1709371-008	EM1709371-010	EM1709371-011	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	----	----	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	----	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	----	----	----	----	95.0	
Toluene-D8	2037-26-5	1	%	----	----	----	----	92.3	
4-Bromofluorobenzene	460-00-4	1	%	----	----	----	----	95.7	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1.0	%	----	----	----	----	24.6	
2-Chlorophenol-D4	93951-73-6	1.0	%	----	----	----	----	74.9	
2,4,6-Tribromophenol	118-79-6	1.0	%	----	----	----	----	71.5	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1.0	%	----	----	----	----	69.2	
Anthracene-d10	1719-06-8	1.0	%	----	----	----	----	80.4	
4-Terphenyl-d14	1718-51-0	1.0	%	----	----	----	----	81.3	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	101	102	101	100	102	
Toluene-D8	2037-26-5	2	%	94.3	95.9	96.4	95.6	97.5	
4-Bromofluorobenzene	460-00-4	2	%	93.2	91.2	92.4	95.1	104	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW69_14/07/17	GW61_14/07/17	GW65_14/07/17	GW30_14/07/17	QC315_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-012	EM1709371-013	EM1709371-014	EM1709371-015	EM1709371-016	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.92	7.56	7.47	5.96	----	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	2140	2780	2030	330	----	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	1120	1780	1450	39	----	
Total Alkalinity as CaCO3	----	1	mg/L	1120	1780	1450	39	----	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<5	150	6	167	----	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	13	144	16	170	----	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	838	875	725	14	----	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	95	112	116	48	----	
Magnesium	7439-95-4	1	mg/L	97	174	140	10	----	
Sodium	7440-23-5	1	mg/L	768	877	594	32	----	
Potassium	7440-09-7	1	mg/L	61	142	101	5	----	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.03	<0.01	0.02	0.19	----	
Arsenic	7440-38-2	0.001	mg/L	0.004	0.003	0.011	0.011	----	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----	
Chromium	7440-47-3	0.001	mg/L	0.006	0.003	0.004	0.010	----	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.005	<0.001	----	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----	
Manganese	7439-96-5	0.001	mg/L	0.470	0.165	0.146	0.054	----	
Nickel	7440-02-0	0.001	mg/L	0.007	0.006	0.003	0.006	----	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----	
Zinc	7440-66-6	0.005	mg/L	0.024	0.009	0.016	0.090	----	
Iron	7439-89-6	0.05	mg/L	2.96	11.1	13.5	7.01	----	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	4.55	2.48	4.08	1.43	----	
Arsenic	7440-38-2	0.001	mg/L	0.010	0.011	0.032	0.031	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW69_14/07/17	GW61_14/07/17	GW65_14/07/17	GW30_14/07/17	QC315_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-012	EM1709371-013	EM1709371-014	EM1709371-015	EM1709371-016	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	0.0008	0.0018	0.0035	<0.0001	----	
Chromium	7440-47-3	0.001	mg/L	0.022	0.019	0.022	0.018	----	
Copper	7440-50-8	0.001	mg/L	0.061	0.072	0.059	0.002	----	
Nickel	7440-02-0	0.001	mg/L	0.029	0.026	0.023	0.008	----	
Lead	7439-92-1	0.001	mg/L	0.178	0.162	0.205	0.004	----	
Zinc	7440-66-6	0.005	mg/L	0.737	1.47	0.617	0.095	----	
Manganese	7439-96-5	0.001	mg/L	0.564	0.239	0.228	0.061	----	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----	
Iron	7439-89-6	0.05	mg/L	14.3	21.6	30.2	9.89	----	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.0001	0.0001	<0.0001	----	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.6	0.2	0.1	<0.1	----	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	13.8	66.4	59.1	0.54	----	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.02	<0.01	<0.01	----	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	0.01	2.83	<0.01	----	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.03	2.83	<0.01	----	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.03	<0.01	<0.01	<0.01	----	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	46.0	63.4	49.5	4.65	----	
Total Cations	----	0.01	meq/L	47.7	61.7	45.7	4.74	----	
Ionic Balance	----	0.01	%	1.78	1.34	4.00	0.92	----	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	62	34	54	13	----	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW69_14/07/17	GW61_14/07/17	GW65_14/07/17	GW30_14/07/17	QC315_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-012	EM1709371-013	EM1709371-014	EM1709371-015	EM1709371-016	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	<1	34	<1	----	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	<1	<1	----	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	<1	<1	----	
Styrene	100-42-5	1	µg/L	<1	<1	<1	<1	----	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	<1	<1	----	
Isopropylbenzene	98-82-8	1	µg/L	<1	2	2	<1	----	
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	2	<1	----	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	<1	<1	----	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	1	<1	----	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	2	1	<1	----	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	<1	<1	----	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	<1	<1	----	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	<1	<1	----	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	20	<10	----	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	<10	<10	----	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	<10	<10	----	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	<10	<10	----	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	<10	<10	----	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	2	<1	<1	----	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	----	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	----	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	----	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	----	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	----	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	<10	<10	----	
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	----	
Vinyl chloride	75-01-4	10.0	µg/L	<10.0	<10.0	<10.0	<10.0	----	
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	----	
Chloroethane	75-00-3	10	µg/L	<10	<10	<10	<10	----	
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW69_14/07/17	GW61_14/07/17	GW65_14/07/17	GW30_14/07/17	QC315_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-012	EM1709371-013	EM1709371-014	EM1709371-015	EM1709371-016	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	----	
Iodomethane	74-88-4	1	µg/L	<1	<1	<1	<1	----	
Methylene chloride	75-09-2	4	µg/L	<4	<4	<4	<4	----	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	<1	<1	----	
1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	<1	<1	----	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	<1	<1	----	
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	----	
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	----	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	----	
1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	----	
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	----	
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	----	
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	----	
1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	----	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	----	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	----	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	----	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	<1	<1	----	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	----	
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	----	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	<1	<1	----	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	----	
Hexachlorobutadiene	87-68-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	<1	2	<1	----	
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	----	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	<1	----	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	----	
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	<1	<1	----	
1,4-Dichlorobenzene	106-46-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	<1	<1	----	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	<1	<1	----	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	<1	<1	----	
<b>EP074G: Trihalomethanes</b>									



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW69_14/07/17	GW61_14/07/17	GW65_14/07/17	GW30_14/07/17	QC315_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-012	EM1709371-013	EM1709371-014	EM1709371-015	EM1709371-016	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	<1	<1	<1	<1	----	
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	<1	<1	----	
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	----	
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	----	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<b>2.2</b>	<1.0	----	
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<b>4.2</b>	<1.0	----	
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<b>1.7</b>	<1.0	----	
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(g,h,i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<b>8.1</b>	<0.5	----	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<b>60</b>	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<b>70</b>	<b>230</b>	<b>330</b>	<50	----	
C15 - C28 Fraction	----	100	µg/L	<b>520</b>	<b>1050</b>	<b>700</b>	<100	----	
C29 - C36 Fraction	----	50	µg/L	<50	<b>160</b>	<b>100</b>	<50	----	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<b>590</b>	<b>1440</b>	<b>1130</b>	<50	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<b>20</b>	<b>70</b>	<20	<20	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW69_14/07/17	GW61_14/07/17	GW65_14/07/17	GW30_14/07/17	QC315_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-012	EM1709371-013	EM1709371-014	EM1709371-015	EM1709371-016	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	20	40	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	140	350	450	<100	----	
>C16 - C34 Fraction	----	100	µg/L	460	1010	630	<100	----	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	----	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	600	1360	1080	<100	----	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	140	350	450	<100	----	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	33	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	33	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	<0.02	----	----	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	<0.02	----	----	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	0.03	----	----	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	<0.02	----	----	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	0.04	----	----	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	<0.02	----	----	----	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	<0.1	----	----	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	0.09	----	----	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	0.07	----	----	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	<0.02	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW69_14/07/17	GW61_14/07/17	GW65_14/07/17	GW30_14/07/17	QC315_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-012	EM1709371-013	EM1709371-014	EM1709371-015	EM1709371-016	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	0.02	----	----	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	<0.02	----	----	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	<0.02	----	----	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	<0.02	----	----	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	<0.02	----	----	----	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	----	<0.02	----	----	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	<0.05	----	----	----	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	<0.02	----	----	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	<0.05	----	----	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	<0.05	----	----	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	----	<0.05	----	----	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	<0.05	----	----	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	<0.02	----	----	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	<0.02	----	----	----	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	<0.05	----	----	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	<0.05	----	----	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	<0.05	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW69_14/07/17	GW61_14/07/17	GW65_14/07/17	GW30_14/07/17	QC315_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-012	EM1709371-013	EM1709371-014	EM1709371-015	EM1709371-016	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	<0.05	----	----	----	
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	----	0.25	----	----	----	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	0.07	----	----	----	
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	0.25	----	----	----	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	97.0	97.8	101	98.8	----	
Toluene-D8	2037-26-5	1	%	94.4	109	110	98.3	----	
4-Bromofluorobenzene	460-00-4	1	%	96.4	107	109	98.5	----	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1.0	%	28.6	22.6	20.4	30.2	----	
2-Chlorophenol-D4	93951-73-6	1.0	%	73.2	66.1	63.8	85.1	----	
2,4,6-Tribromophenol	118-79-6	1.0	%	71.4	83.0	79.2	70.2	----	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1.0	%	74.5	69.6	68.6	70.8	----	
Anthracene-d10	1719-06-8	1.0	%	81.5	77.5	71.8	76.1	----	
4-Terphenyl-d14	1718-51-0	1.0	%	80.1	77.8	75.4	82.8	----	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	104	99.1	103	106	98.7	
Toluene-D8	2037-26-5	2	%	99.8	106	107	104	94.1	
4-Bromofluorobenzene	460-00-4	2	%	108	101	104	107	92.1	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	----	95.6	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW45_14/07/17	GW41_14/07/17	GW47_14/07/17	GW02_14/07/17	QC109_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-017	EM1709371-018	EM1709371-019	EM1709371-020	EM1709371-021	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.19	7.08	7.50	7.36	7.53	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	3450	728	9360	1820	9210	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	780	176	447	1400	447	
Total Alkalinity as CaCO3	----	1	mg/L	780	176	447	1400	447	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	320	66	978	<1	965	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	592	387	1410	7	1550	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	1360	13	5140	254	4940	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	263	66	283	57	268	
Magnesium	7439-95-4	1	mg/L	104	7	400	70	375	
Sodium	7440-23-5	1	mg/L	907	18	2670	523	2510	
Potassium	7440-09-7	1	mg/L	38	8	138	45	131	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	<0.01	0.02	0.06	0.01	0.05	
Arsenic	7440-38-2	0.001	mg/L	<0.001	0.002	0.004	0.003	0.003	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	0.004	<0.001	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.003	<0.001	0.002	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	
Manganese	7439-96-5	0.001	mg/L	0.020	0.013	0.168	0.036	0.160	
Nickel	7440-02-0	0.001	mg/L	<0.001	0.001	0.018	0.028	0.017	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.012	0.015	0.010	
Iron	7439-89-6	0.05	mg/L	0.10	0.29	1.03	8.06	1.01	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	14.6	7.66	2.47	0.21	2.36	
Arsenic	7440-38-2	0.001	mg/L	0.034	0.014	0.008	0.003	0.010	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW45_14/07/17	GW41_14/07/17	GW47_14/07/17	GW02_14/07/17	QC109_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-017	EM1709371-018	EM1709371-019	EM1709371-020	EM1709371-021	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	0.0004	<0.0001	<0.0001	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.057	0.022	0.007	0.005	0.010	
Copper	7440-50-8	0.001	mg/L	0.055	0.009	0.003	0.001	0.004	
Nickel	7440-02-0	0.001	mg/L	0.070	0.012	0.020	0.027	0.020	
Lead	7439-92-1	0.001	mg/L	0.162	0.009	0.003	0.005	0.004	
Zinc	7440-66-6	0.005	mg/L	0.298	0.031	0.013	0.028	0.016	
Manganese	7439-96-5	0.001	mg/L	0.866	0.051	0.194	0.034	0.202	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	31.3	20.4	5.16	7.75	5.42	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.8	0.2	0.5	0.6	0.5	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	5.57	0.07	2.96	58.8	3.06	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.02	<0.01	0.02	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	0.02	0.02	<0.01	0.02	<0.01	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	0.02	0.02	0.02	0.02	0.02	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	60.6	5.26	174	35.1	168	
Total Cations	----	0.01	meq/L	62.1	4.86	167	32.5	157	
Ionic Balance	----	0.01	%	1.22	3.96	2.22	3.89	3.57	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	31	12	13	37	12	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW45_14/07/17	GW41_14/07/17	GW47_14/07/17	GW02_14/07/17	QC109_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-017	EM1709371-018	EM1709371-019	EM1709371-020	EM1709371-021	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	<1	<1	<1	<1	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	<1	<1	<1	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	<1	<1	<1	
Styrene	100-42-5	1	µg/L	<1	<1	<1	<1	<1	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	<1	<1	<1	
Isopropylbenzene	98-82-8	1	µg/L	<1	<1	<1	3	<1	
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	<1	2	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	<1	<1	<1	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	<1	<1	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	<1	<1	<1	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	<1	<1	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	<1	<1	<1	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	60	<10	<10	<10	<10	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	<10	<10	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	<10	<10	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	<10	<10	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	<10	<10	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	<10	<10	<10	
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	<10	
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	<10.0	<10.0	<10.0	
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	<10	
Chloroethane	75-00-3	10	µg/L	<10	<10	<10	<10	<10	
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	<10	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW45_14/07/17	GW41_14/07/17	GW47_14/07/17	GW02_14/07/17	QC109_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-017	EM1709371-018	EM1709371-019	EM1709371-020	EM1709371-021	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	<1	
Iodomethane	74-88-4	1	µg/L	<1	<1	<1	<1	<1	
Methylene chloride	75-09-2	4	µg/L	<4	<4	<4	<4	<4	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	<1	<1	<1	
1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	4	<1	4	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	<1	<1	<1	
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	<1	
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	<1	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	<1	
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	<1	
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	<1	
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	<1	
1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	<1	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	<1	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	<1	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	<1	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	<1	<1	<1	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	<1	
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	<1	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	<1	<1	<1	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	<1	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	<1	<1	9	<1	
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	<1	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	4	<1	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	<1	
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	<1	<1	<1	
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	<1.0	<1.0	1.7	<1.0	
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	<1	<1	<1	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	<1	<1	<1	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	<1	<1	<1	
<b>EP074G: Trihalomethanes</b>									



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW45_14/07/17	GW41_14/07/17	GW47_14/07/17	GW02_14/07/17	QC109_14/07/17
Client sampling date / time					14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709371-017	EM1709371-018	EM1709371-019	EM1709371-020	EM1709371-021	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	<1	<1	<1	<1	<1	<1
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	<1	<1	<1	<1
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	<1	<1
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	<1	<1
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	<5
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	<1.0	<b>1.1</b>	<1.0	<1.0
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<b>1.1</b>	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<b>30</b>	<20	<20
C10 - C14 Fraction	----	50	µg/L	<b>170</b>	<50	<50	<b>200</b>	<50	<50
C15 - C28 Fraction	----	100	µg/L	<b>1380</b>	<100	<100	<b>540</b>	<100	<100
C29 - C36 Fraction	----	50	µg/L	<b>60</b>	<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L	<b>1610</b>	<50	<50	<b>740</b>	<50	<50
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<b>30</b>	<20	<20





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW45_14/07/17	GW41_14/07/17	GW47_14/07/17	GW02_14/07/17	QC109_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709371-017	EM1709371-018	EM1709371-019	EM1709371-020	EM1709371-021	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	30	<20	
>C10 - C16 Fraction	----	100	µg/L	260	<100	<100	240	<100	
>C16 - C34 Fraction	----	100	µg/L	1160	<100	<100	440	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	1420	<100	<100	680	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	260	<100	<100	240	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	<0.02	----	----	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	<0.02	----	----	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	<0.02	----	----	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	<0.02	----	----	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	<0.01	----	----	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	<0.02	----	----	----	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	<0.1	----	----	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	<0.02	----	----	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	<0.02	----	----	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	<0.02	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW45_14/07/17	GW41_14/07/17	GW47_14/07/17	GW02_14/07/17	QC109_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-017	EM1709371-018	EM1709371-019	EM1709371-020	EM1709371-021	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	<0.01	----	----	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	<0.02	----	----	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	<0.02	----	----	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	<0.02	----	----	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	<0.02	----	----	----	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	----	<0.02	----	----	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	<0.05	----	----	----	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	<0.02	----	----	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	<0.05	----	----	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	<0.05	----	----	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	----	<0.05	----	----	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	<0.05	----	----	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	<0.02	----	----	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	<0.02	----	----	----	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	<0.05	----	----	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	<0.05	----	----	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	<0.05	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW45_14/07/17	GW41_14/07/17	GW47_14/07/17	GW02_14/07/17	QC109_14/07/17
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709371-017	EM1709371-018	EM1709371-019	EM1709371-020	EM1709371-021	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	<0.05	----	----	----	
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	----	<0.01	----	----	----	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	<0.01	----	----	----	
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	<0.01	----	----	----	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	108	106	107	110	97.7	
Toluene-D8	2037-26-5	1	%	108	110	110	115	101	
4-Bromofluorobenzene	460-00-4	1	%	105	106	107	109	99.8	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	29.0	31.2	30.4	30.1	29.1	
2-Chlorophenol-D4	93951-73-6	1	%	81.3	80.1	83.7	80.8	84.1	
2,4,6-Tribromophenol	118-79-6	1	%	80.8	74.3	74.2	82.7	77.9	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	75.9	81.6	84.6	78.4	82.4	
Anthracene-d10	1719-06-8	1	%	79.8	87.2	87.6	79.8	86.9	
4-Terphenyl-d14	1718-51-0	1	%	85.1	88.9	90.1	81.2	89.2	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	115	113	115	118	102	
Toluene-D8	2037-26-5	2	%	102	103	103	108	92.6	
4-Bromofluorobenzene	460-00-4	2	%	100	101	100	105	97.7	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	----	97.4	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC111_14/07/17	QC112_14/07/17	QC113_14/07/17	QC114_17/07/17	----
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	17-Jul-2017 00:00	----	----
Compound	CAS Number	LOR	Unit	EM1709371-022	EM1709371-023	EM1709371-024	EM1709371-025	-----	-----
				Result	Result	Result	Result	----	----
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	----	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	----	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	----	----	----	----
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	----	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	----	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	----	----	----	----
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----	----
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	----	----
C10 - C14 Fraction	----	50	µg/L	<50	<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	<50	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	----	----	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	----	----





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC111_14/07/17	QC112_14/07/17	QC113_14/07/17	QC114_17/07/17	----
Client sampling date / time				14-Jul-2017 00:00	14-Jul-2017 00:00	14-Jul-2017 00:00	17-Jul-2017 00:00	----	----
Compound	CAS Number	LOR	Unit	EM1709371-022	EM1709371-023	EM1709371-024	EM1709371-025	-----	-----
				Result	Result	Result	Result	----	----
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	----	----
>C10 - C16 Fraction	----	100	µg/L	<100	<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L	<100	<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L	<100	<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	----	----	----	----
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	----	----
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	----	----
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	----	----
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	----	----
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	----	----
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	----	----
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	----	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	99.5	103	100	104	----	----
Toluene-D8	2037-26-5	2	%	92.1	99.1	91.4	94.7	----	----
4-Bromofluorobenzene	460-00-4	2	%	90.3	96.6	89.8	93.0	----	----



## Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	72	120
Toluene-D8	2037-26-5	70	130
4-Bromofluorobenzene	460-00-4	70	128
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	10	46
2-Chlorophenol-D4	93951-73-6	23	104
2,4,6-Tribromophenol	118-79-6	28	130
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129
<b>EP231S: PFAS Surrogate</b>			
13C4-PFOS	----	60	130

## QUALITY CONTROL REPORT

<b>Work Order</b>	: <b>EM1709371</b>	<b>Page</b>	: 1 of 37
<b>Amendment</b>	: <b>1</b>		
<b>Client</b>	: <b>AECOM Australia Pty Ltd</b>	<b>Laboratory</b>	: Environmental Division Melbourne
<b>Contact</b>	: <b>MS AVERYLL COYNE</b>	<b>Contact</b>	: Carol Walsh
<b>Address</b>	: <b>COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004</b>	<b>Address</b>	: 4 Westall Rd Springvale VIC Australia 3171
<b>Telephone</b>	: +61 03 9653 1234	<b>Telephone</b>	: +61-3-8549 9608
<b>Project</b>	: 60537182	<b>Date Samples Received</b>	: 17-Jul-2017
<b>Order number</b>	: Task 3.2	<b>Date Analysis Commenced</b>	: 18-Jul-2017
<b>C-O-C number</b>	: ----	<b>Issue Date</b>	: 04-Aug-2017
<b>Sampler</b>	: BH, BP, JM		
<b>Site</b>	: ----		
<b>Quote number</b>	: ME/199/16		
<b>No. of samples received</b>	: 25		
<b>No. of samples analysed</b>	: 24		



Accreditation No. 825  
Accredited for compliance with  
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Chris Lemaitre	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Gaston Allende	R&D Chemist	Sydney Organics, Smithfield, NSW
Nancy Wang	Senior Semivolatile Instrument Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC



## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :  
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot  
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
 LOR = Limit of reporting  
 RPD = Relative Percentage Difference  
 # = Indicates failed QC

## Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA005P: pH by PC Titrator (QC Lot: 1004131)</b>									
EM1709373-001	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.47	7.43	0.537	0% - 20%
EM1709371-020	GW02_14/07/17	EA005-P: pH Value	----	0.01	pH Unit	7.36	7.37	0.136	0% - 20%
<b>EA005P: pH by PC Titrator (QC Lot: 1027402)</b>									
EM1710070-003	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.40	7.51	1.48	0% - 20%
EM1709371-011	GW74_14/07/17	EA005-P: pH Value	----	0.01	pH Unit	7.30	7.34	0.546	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 1004178)</b>									
EM1709370-011	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	6260	6100	2.56	0% - 20%
EM1709371-018	GW41_14/07/17	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	728	600	19.3	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 1027297)</b>									
EM1709192-022	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	476	486	1.87	0% - 20%
EM1710018-002	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	580	585	0.858	0% - 20%
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 1004130)</b>									
EM1709371-020	GW02_14/07/17	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	1400	1400	0.174	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	1400	1400	0.174	0% - 20%
EM1709368-002	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	1070	1040	2.41	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	1070	1040	2.41	0% - 20%
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 1027403)</b>									
EM1710018-005	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	2	<1	81.3	No Limit





Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 1027403) - continued</b>									
EM1710018-005	Anonymous	ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	2	<1	81.3	No Limit
EM1709371-011	GW74_14/07/17	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	610	579	5.31	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	610	579	5.31	0% - 20%
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 1002685)</b>									
EM1709371-021	QC109_14/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	965	965	0.00	0% - 20%
EM1709371-001	GW08_14/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	262	255	2.67	0% - 20%
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 1027436)</b>									
EM1710018-003	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	<1	0.00	No Limit
EM1709192-022	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	12	12	0.00	0% - 50%
<b>ED043: Total Oxidised Sulfur as SO4 2- (QC Lot: 1009657)</b>									
EM1709192-003	Anonymous	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	66	73	10.5	0% - 20%
EM1709371-019	GW47_14/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	1410	1550	9.64	0% - 20%
<b>ED043: Total Oxidised Sulfur as SO4 2- (QC Lot: 1032270)</b>									
EM1709192-022	Anonymous	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	23	22	8.47	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 1002686)</b>									
EM1709371-020	GW02_14/07/17	ED045G: Chloride	16887-00-6	1	mg/L	254	254	0.00	0% - 20%
EM1709371-001	GW08_14/07/17	ED045G: Chloride	16887-00-6	1	mg/L	39	38	0.00	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 1027435)</b>									
EM1709648-002	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	19	19	0.00	0% - 50%
EM1709192-022	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	23	22	0.00	0% - 20%
<b>ED093F: Dissolved Major Cations (QC Lot: 1002542)</b>									
EM1709306-003	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	25	25	0.00	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	36	36	0.00	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	166	167	0.956	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	206	208	0.758	0% - 20%
EM1709371-001	GW08_14/07/17	ED093F: Calcium	7440-70-2	1	mg/L	206	206	0.00	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	30	30	0.00	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	43	44	0.00	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	14	14	0.00	0% - 50%
<b>ED093F: Dissolved Major Cations (QC Lot: 1028386)</b>									
EM1709371-011	GW74_14/07/17	ED093F: Calcium	7440-70-2	1	mg/L	160	163	1.74	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	73	75	2.48	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	146	150	2.51	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	22	22	0.00	0% - 20%
EM1710085-004	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	1560	1610	3.07	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	902	931	3.18	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	4880	5010	2.56	0% - 20%



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>ED093F: Dissolved Major Cations (QC Lot: 1028386) - continued</b>									
EM1710085-004	Anonymous	ED093F: Potassium	7440-09-7	1	mg/L	71	73	2.19	0% - 50%
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 1002543)</b>									
EM1709340-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.004	0.004	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.024	0.027	10.0	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.003	0.003	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.017	0.017	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit		
EM1709371-010	QC314_14/07/17	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit		
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 1028385)</b>									
EM1710085-003	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	5.71	5.77	1.01	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.015	0.016	9.25	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-F: Iron	7439-89-6	0.05	mg/L	2.19	2.20	0.00	0% - 20%		
EM1709192-022	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.045	0.045	0.00	0% - 20%
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.004	0.004	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 1028385) - continued</b>									
EM1709192-022	Anonymous	EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.112	0.113	1.34	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.023	0.023	0.00	0% - 20%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.011	0.010	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.03	0.03	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	6.97	7.01	0.534	0% - 20%
<b>EG020T: Total Metals by ICP-MS (QC Lot: 1002545)</b>									
EM1709361-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.02	0.02	0.00	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.06	<0.05	23.2	No Limit
EM1709371-002	GW80_14/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0002	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.006	0.008	24.5	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.005	0.007	31.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.003	0.004	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.003	0.003	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.274	0.299	8.96	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.011	0.015	30.3	0% - 50%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.028	0.031	9.10	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	1.27	1.34	5.87	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	11.9	12.8	6.67	0% - 20%
<b>EG020T: Total Metals by ICP-MS (QC Lot: 1002547)</b>									
EM1709371-022	QC111_14/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.02	84.2	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020T: Total Metals by ICP-MS (QC Lot: 1002547) - continued</b>									
EM1709371-022	QC111_14/07/17	EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit
<b>EG020T: Total Metals by ICP-MS (QC Lot: 1027626)</b>									
EM1709192-022	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.122	0.121	0.00	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.010	0.010	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.012	0.011	0.00	0% - 50%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.006	0.006	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.130	0.130	0.00	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.028	0.028	0.00	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.032	0.032	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	1.05	1.02	2.82	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	15.8	15.7	0.489	0% - 20%
EM1709981-003	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.005	0.005	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.093	0.095	2.23	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.004	0.005	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.02	0.03	35.5	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	0.08	0.08	0.00	No Limit
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 1002544)</b>									
EM1709343-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709371-018	GW41_14/07/17	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 1028384)</b>									
EM1709192-022	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1710085-004	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1007147)</b>									
EM1709231-003	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709231-012	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1007149)</b>									
EM1709371-010	QC314_14/07/17	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709376-012	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1027923)</b>									
EM1709192-022	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1027923) - continued</b>									
EM1710066-005	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EK040P: Fluoride by PC Titrator (QC Lot: 1004127)</b>									
EM1709249-002	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.4	0.5	0.00	No Limit
EM1709371-020	GW02_14/07/17	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.6	0.7	0.00	No Limit
<b>EK040P: Fluoride by PC Titrator (QC Lot: 1027404)</b>									
EM1709371-011	GW74_14/07/17	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.3	0.3	0.00	No Limit
<b>EK055G: Ammonia as N by Discrete Analyser (QC Lot: 1004192)</b>									
EM1709371-001	GW08_14/07/17	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	2.37	2.39	0.522	0% - 20%
EM1709371-021	QC109_14/07/17	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	3.06	3.13	2.30	0% - 20%
<b>EK055G: Ammonia as N by Discrete Analyser (QC Lot: 1030195)</b>									
EM1709192-022	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	13.2	12.9	2.27	0% - 20%
EM1710025-034	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.90	0.82	9.57	0% - 20%
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 1002687)</b>									
EM1709371-021	QC109_14/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.02	0.02	0.00	No Limit
EM1709371-001	GW08_14/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.01	0.01	0.00	No Limit
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 1027437)</b>									
EM1710018-003	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EM1709192-022	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.01	<0.01	0.00	No Limit
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 1004193)</b>									
EM1709371-001	GW08_14/07/17	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.03	0.09	93.5	No Limit
EM1709371-021	QC109_14/07/17	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.02	0.02	0.00	No Limit
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 1030194)</b>									
EM1709192-022	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.04	0.04	0.00	No Limit
EM1710025-034	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 1002688)</b>									
EM1709371-021	QC109_14/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EM1709371-001	GW08_14/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 1027438)</b>									
EM1709192-022	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.15	0.14	0.00	0% - 50%
<b>EP005: Total Organic Carbon (TOC) (QC Lot: 1007488)</b>									
EM1709231-003	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	5	5	0.00	No Limit
EM1709231-012	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	16	17	7.19	0% - 50%
<b>EP005: Total Organic Carbon (TOC) (QC Lot: 1007489)</b>									
EM1709371-021	QC109_14/07/17	EP005: Total Organic Carbon	----	1	mg/L	12	13	0.00	0% - 50%
EM1709376-010	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	2	3	0.00	No Limit
<b>EP005: Total Organic Carbon (TOC) (QC Lot: 1033529)</b>									
EM1709192-022	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	48	44	7.55	0% - 20%
EM1710240-002	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	32	38	16.4	0% - 20%



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 1003964)</b>										
EM1709371-001	GW08_14/07/17	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit			
EM1709415-001	Anonymous	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit			
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 1026376)</b>										
EM1709192-022	Anonymous	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit			



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 1026376) - continued</b>									
EM1709192-022	Anonymous	EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 1003964)</b>									
EM1709371-001	GW08_14/07/17	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit
EM1709415-001	Anonymous	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 1026376)</b>									
EM1709192-022	Anonymous	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 1003964)</b>									
EM1709371-001	GW08_14/07/17	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
EM1709415-001	Anonymous	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 1026376)</b>									
EM1709192-022	Anonymous	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
<b>EP074D: Fumigants (QC Lot: 1003964)</b>									
EM1709371-001	GW08_14/07/17	EP074-WF: 2.2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1.3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
EM1709415-001	Anonymous	EP074-WF: 2.2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1.3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074D: Fumigants (QC Lot: 1026376)</b>									
EM1709192-022	Anonymous	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 1003964)</b>									
EM1709371-001	GW08_14/07/17	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	2	2	0.00	No Limit
		EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit		
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit		
EM1709415-001	Anonymous	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 1003964) - continued</b>									
EM1709415-001	Anonymous	EP074-WF: 1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.2-Dichloroethene	156-59-2	1	µg/L	8	8	0.00	No Limit
		EP074-WF: 1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit		
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit		
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit		
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 1026376)</b>									
EM1709192-022	Anonymous	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 1026376) - continued</b>									
EM1709192-022	Anonymous	EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 1003964)</b>									
EM1709371-001	GW08_14/07/17	EP074-WF: 1.4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
EM1709415-001	Anonymous	EP074-WF: 1.4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 1.2.3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit		
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 1026376)</b>									
EM1709192-022	Anonymous	EP074-WF: 1.4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 1026376) - continued</b>									
EM1709192-022	Anonymous	EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 1003964)</b>									
EM1709371-001	GW08_14/07/17	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
EM1709415-001	Anonymous	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 1026376)</b>									
EM1709192-022	Anonymous	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
<b>EP074H: Naphthalene (QC Lot: 1003964)</b>									
EM1709371-001	GW08_14/07/17	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EM1709415-001	Anonymous	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP074H: Naphthalene (QC Lot: 1026376)</b>									
EM1709192-022	Anonymous	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1003965)</b>									
EM1709371-001	GW08_14/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1709415-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1003968)</b>									
EM1709353-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	410	390	3.71	0% - 20%
EM1709371-010	QC314_14/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1026375)</b>									
EM1710018-028	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1709192-022	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1003965)</b>									
EM1709371-001	GW08_14/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM1709415-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1003968)</b>									
EM1709353-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	690	660	4.06	0% - 20%
EM1709371-010	QC314_14/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1026375)</b>									



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1026375) - continued</b>									
EM1710018-028	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM1709192-022	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
<b>EP080: BTEXN (QC Lot: 1003965)</b>									
EM1709371-001	GW08_14/07/17	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EM1709415-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP080: BTEXN (QC Lot: 1003968)</b>									
EM1709353-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	9	9	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	68	65	3.79	0% - 20%
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	41	39	4.60	0% - 20%
		EP080: ortho-Xylene	95-47-6	2	µg/L	14	14	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	39	35	10.9	No Limit
EM1709371-010	QC314_14/07/17	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP080: BTEXN (QC Lot: 1026375)</b>									
EM1710018-028	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit





Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP080: BTEXN (QC Lot: 1026375) - continued</b>									
EM1709192-022	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 1006714)</b>									
EM1709371-003	GW81_14/07/17	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.27	0.27	0.00	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.02	0.03	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.32	0.35	8.26	0% - 50%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
ES1717796-005	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 1027326)</b>									
EM1709371-013	GW61_14/07/17	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.04	0.04	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.03	0.04	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
ES1718825-006	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	3.57	3.61	1.12	0% - 20%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.06	0.05	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	0.08	0.07	13.2	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	1.04	0.96	7.68	0% - 20%
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	0.12	0.11	8.47	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 1006714)</b>									
EM1709371-003	GW81_14/07/17	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.41	0.42	4.10	0% - 20%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	1.00	1.06	5.24	0% - 20%
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.68	0.68	0.00	0% - 20%
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.63	0.67	5.68	0% - 20%
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 1006714) - continued</b>									
EM1709371-003	GW81_14/07/17	EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	0.2	0.2	0.00	No Limit
ES1717796-005	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit		
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 1027326)</b>									
EM1709371-013	GW61_14/07/17	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.02	0.02	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.09	0.08	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.07	0.07	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
ES1718825-006	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	0.10	0.09	14.4	0% - 50%
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	0.03	0.03	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.17	0.16	10.9	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	0.03	0.03	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		<b>EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 1006714)</b>							



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 1006714) - continued</b>									
EM1709371-003	GW81_14/07/17	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
ES1717796-005	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 1027326)</b>									
EM1709371-013	GW61_14/07/17	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
ES1718825-006	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 1027326) - continued</b>									
ES1718825-006	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 1006714)</b>									
EM1709371-003	GW81_14/07/17	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
ES1717796-005	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 1027326)</b>									
EM1709371-013	GW61_14/07/17	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
ES1718825-006	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 1027326) - continued</b>									
ES1718825-006	Anonymous	EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231P: PFAS Sums (QC Lot: 1006714)</b>									
EM1709371-003	GW81_14/07/17	EP231X: Sum of PFAS	----	0.01	µg/L	3.53	3.68	4.16	0% - 20%
ES1717796-005	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
<b>EP231P: PFAS Sums (QC Lot: 1027326)</b>									
EM1709371-013	GW61_14/07/17	EP231X: Sum of PFAS	----	0.01	µg/L	0.25	0.25	0.00	0% - 20%
ES1718825-006	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	5.20	5.11	1.74	0% - 20%



## Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 1004178)</b>									
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	101	95	105	
				<10	293 mg/L	100	95	105	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 1027297)</b>									
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	99.1	95	105	
				<10	293 mg/L	99.0	95	105	
<b>ED037P: Alkalinity by PC Titrator (QCLot: 1004130)</b>									
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	100	88	109	
<b>ED037P: Alkalinity by PC Titrator (QCLot: 1027403)</b>									
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	94.9	88	109	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 1002685)</b>									
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	103	92	115	
				<1	100 mg/L	102	92	115	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 1027436)</b>									
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	110	92	115	
				<1	100 mg/L	105	92	115	
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 1009657)</b>									
ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	<1	500 mg/L	107	82	122	
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 1032270)</b>									
ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	<1	500 mg/L	97.4	82	122	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 1002686)</b>									
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	102	88	118	
				<1	1000 mg/L	101	88	118	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 1027435)</b>									
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	105	88	118	
				<1	1000 mg/L	107	88	118	
<b>ED093F: Dissolved Major Cations (QCLot: 1002542)</b>									
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	107	93	110	
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	107	91	110	
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	102	90	109	
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	102	89	109	
<b>ED093F: Dissolved Major Cations (QCLot: 1028386)</b>									
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	101	93	110	
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	101	91	110	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>ED093F: Dissolved Major Cations (QCLot: 1028386) - continued</b>									
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	101	90	109	
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	103	89	109	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 1002543)</b>									
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	98.6	93	105	
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	92.1	91	107	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	88.5	84	104	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	88.4	83	103	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	86.4	82	103	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	90.6	83	105	
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	92.3	83	105	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	87.6	82	106	
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	96.9	82	109	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	94.6	85	109	
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	94.3	94	106	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 1028385)</b>									
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	99.3	93	105	
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	99.4	91	107	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	102	84	104	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	95.2	83	103	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.0	82	103	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	99.0	83	105	
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	96.8	83	105	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	98.9	82	106	
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	96.9	82	109	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	102	85	109	
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	100	94	106	
<b>EG020T: Total Metals by ICP-MS (QCLot: 1002545)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	102	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	97.3	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.3	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	94.8	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	93.7	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	95.2	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	98.8	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.3	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	99.9	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	102	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	102	80	120	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EG020T: Total Metals by ICP-MS (QCLot: 1002547)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	107	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	103	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.6	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	97.7	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	99.7	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	100	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	103	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	101	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	108	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	107	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	103	80	120	
<b>EG020T: Total Metals by ICP-MS (QCLot: 1027626)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	107	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	106	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	105	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	96.7	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.4	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	103	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	102	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	98.3	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	111	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	101	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	107	80	120	
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 1002544)</b>									
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	91.9	81	114	
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 1028384)</b>									
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	87.8	81	114	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1007147)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	90.4	81	114	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1007149)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	86.0	81	114	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1027923)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	91.0	81	114	
<b>EK040P: Fluoride by PC Titrator (QCLot: 1004127)</b>									
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	109	85	112	
<b>EK040P: Fluoride by PC Titrator (QCLot: 1027404)</b>									
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	101	85	112	





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 1004192)</b>									
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	104	80	115	
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 1030195)</b>									
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	102	80	115	
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 1002687)</b>									
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	104	94	107	
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 1027437)</b>									
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	106	94	107	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 1004193)</b>									
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	106	89	114	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 1030194)</b>									
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	107	89	114	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 1002688)</b>									
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	106	94	108	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 1027438)</b>									
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	102	94	108	
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1007488)</b>									
EP005: Total Organic Carbon	----	1	mg/L	<1	100 mg/L	92.8	81	109	
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1007489)</b>									
EP005: Total Organic Carbon	----	1	mg/L	<1	100 mg/L	94.8	81	109	
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1033529)</b>									
EP005: Total Organic Carbon	----	1	mg/L	<1	100 mg/L	101	81	109	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1003964)</b>									
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	100	81	119	
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	104	84	117	
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	95.9	83	114	
EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	40 µg/L	93.6	81	116	
	106-42-3								
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	96.8	82	118	
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	97.6	85	115	
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	93.6	81	113	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	91.5	76	111	
EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	91.9	79	109	
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	88.8	77	111	
EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	93.2	79	108	
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	90.9	80	110	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	86.6	75	111	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	83.0	68	111	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1026376)</b>									
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	87.5	81	119	
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	91.2	84	117	
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	90.4	83	114	
EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	40 µg/L	88.0	81	116	
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	91.2	82	118	
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	91.4	85	115	
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	90.5	81	113	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	92.3	76	111	
EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	94.2	79	109	
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	93.6	77	111	
EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	93.1	79	108	
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	94.1	80	110	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	91.3	75	111	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	87.8	68	111	
<b>EP074B: Oxygenated Compounds (QCLot: 1003964)</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	96.6	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	107	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	102	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	105	73	128	
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	112	75	129	
<b>EP074B: Oxygenated Compounds (QCLot: 1026376)</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	69.6	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	85.0	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	78.4	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	86.9	73	128	
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	83.9	75	129	
<b>EP074C: Sulfonated Compounds (QCLot: 1003964)</b>									
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	95.3	64	119	
<b>EP074C: Sulfonated Compounds (QCLot: 1026376)</b>									
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	76.0	64	119	
<b>EP074D: Fumigants (QCLot: 1003964)</b>									
EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	96.3	74	117	
EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	102	83	118	
EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	98.2	74	109	
EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	98.4	70	109	
EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	105	81	116	
<b>EP074D: Fumigants (QCLot: 1026376)</b>									



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074D: Fumigants (QCLot: 1026376) - continued</b>									
EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	88.0	74	117	
EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	92.3	83	118	
EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	87.6	74	109	
EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	86.1	70	109	
EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	88.1	81	116	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1003964)</b>									
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	91.6	61	137	
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	98.5	66	137	
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	92.9	67	135	
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	87.3	52	128	
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	91.5	76	125	
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	97.7	74	123	
EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	98.4	75	120	
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	63.9	37	120	
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	20 µg/L	112	72	159	
EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	98.0	78	117	
EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	102	81	118	
EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	100	83	118	
EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	97.0	76	115	
EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	96.7	75	117	
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	92.7	72	111	
EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	105	81	120	
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	87.8	78	116	
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	105	79	116	
EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	107	85	119	
EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	109	85	119	
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	94.6	76	120	
EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	97.4	78	110	
EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	107	64	118	
EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	98.4	51	113	
EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	106	85	121	
EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	106	84	118	
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	95.1	64	109	
EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	99.8	65	115	
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	76.4	70	121	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1026376)</b>									
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	62.4	61	137	
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	66.3	66	137	
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	76.7	67	135	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1026376) - continued</b>									
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	68.4	52	128	
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	79.8	76	125	
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	77.8	74	123	
EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	77.4	75	120	
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	63.9	37	120	
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	20 µg/L	94.6	72	159	
EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	81.8	78	117	
EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	89.4	81	118	
EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	90.2	83	118	
EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	88.5	76	115	
EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	81.6	75	117	
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	83.9	72	111	
EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	89.8	81	120	
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	80.4	78	116	
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	91.0	79	116	
EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	91.8	85	119	
EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	93.3	85	119	
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	86.4	76	120	
EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	90.8	78	110	
EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	83.1	64	118	
EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	79.8	51	113	
EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	89.3	85	121	
EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	89.6	84	118	
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	91.8	64	109	
EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	87.8	65	115	
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	92.2	70	121	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 1003964)</b>									
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	99.0	85	115	
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	88.4	82	116	
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	94.5	81	112	
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	93.5	80	110	
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	95.5	80	110	
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	95.3	80	112	
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	96.6	84	111	
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	91.6	70	114	
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	95.6	78	116	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 1026376)</b>									
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	90.8	85	115	
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	85.2	82	116	





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 1026376) - continued</b>								
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	94.5	81	112
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	94.0	80	110
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	92.7	80	110
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	92.6	80	112
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	93.1	84	111
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	89.7	70	114
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	91.6	78	116
<b>EP074G: Trihalomethanes (QCLot: 1003964)</b>								
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	101	82	118
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	96.2	75	112
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	96.1	73	108
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	92.4	68	107
<b>EP074G: Trihalomethanes (QCLot: 1026376)</b>								
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	92.6	82	118
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	90.6	75	112
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	87.4	73	108
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	84.1	68	107
<b>EP074H: Naphthalene (QCLot: 1003964)</b>								
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	102	80	116
<b>EP074H: Naphthalene (QCLot: 1026376)</b>								
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	92.4	80	116
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1002522)</b>								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	79.4	39	110
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	78.9	40	124
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	81.3	47	117
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	81.8	51	118
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	83.6	53	119
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	57.6	51	113
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	82.7	59	123
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	83.0	58	123
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	76.8	52	126
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	82.1	55	123
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	1	µg/L	<1.0	5 µg/L	78.3	52	131
EP075(SIM): Benzo(k)fluoranthene	205-82-3							
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	86.1	57	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	79.5	56	126
EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	81.3	53	123
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	82.8	53	125



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1002522) - continued</b>									
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	83.6	53	125	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1027371)</b>									
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	64.1	39	110	
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	74.6	40	124	
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	71.5	47	117	
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	71.6	51	118	
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	74.2	53	119	
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	62.3	51	113	
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	77.0	59	123	
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	77.2	58	123	
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	73.1	52	126	
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	76.1	55	123	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	75.4	52	131	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	70.2	57	126	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	73.7	56	126	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	73.4	53	123	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	74.1	53	125	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	76.8	53	125	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1002523)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	84.6	53	123	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	83.3	57	133	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	75.5	55	141	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1003965)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	93.3	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1003968)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	90.9	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1026375)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	89.7	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1027372)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	99.1	53	123	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	111	57	133	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	115	55	141	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1002523)</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	65.0	54	122	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	78.4	56	132	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	83.1	51	137	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1003965)</b>									



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1003965) - continued</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	92.8	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1003968)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	84.8	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1026375)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	89.9	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1027372)</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	107	54	122	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	111	56	132	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	112	51	137	
<b>EP080: BTEXN (QCLot: 1003965)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	105	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	96.5	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	97.9	72	124	
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	97.4	72	130	
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	99.5	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	104	71	129	
<b>EP080: BTEXN (QCLot: 1003968)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	100	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	102	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	91.9	72	124	
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	89.5	72	130	
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	94.2	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	85.2	71	129	
<b>EP080: BTEXN (QCLot: 1026375)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	91.0	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	94.1	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	91.8	72	124	
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	92.8	72	130	
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	94.5	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	98.4	71	129	
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 1006714)</b>									
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.5 µg/L	110	70	130	
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.5 µg/L	101	70	130	
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.5 µg/L	108	70	130	
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.5 µg/L	102	70	130	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	High
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 1006714) - continued</b>									
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.5 µg/L	106	70	130	
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	99.2	70	130	
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 1027326)</b>									
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.5 µg/L	101	70	130	
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.5 µg/L	109	70	130	
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.5 µg/L	103	70	130	
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.5 µg/L	105	70	130	
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.5 µg/L	101	70	130	
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	92.0	70	130	
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 1006714)</b>									
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	2.5 µg/L	103	70	130	
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	101	70	130	
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	108	70	130	
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	109	70	130	
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	105	70	130	
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	103	70	130	
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	101	70	130	
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	96.6	70	130	
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	104	70	130	
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	74.0	70	130	
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	75.0	70	150	
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 1027326)</b>									
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	2.5 µg/L	100	70	130	
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	89.6	70	130	
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	112	70	130	
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	118	70	130	
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	107	70	130	
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	97.0	70	130	
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	106	70	130	
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	83.2	70	130	
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	116	70	130	
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	90.6	70	130	
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	125	70	150	
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 1006714)</b>									
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	102	70	130	
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	106	70	150	
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	108	70	150	





Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 1006714) - continued</b>								
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	1.25 µg/L	104	70	150
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	122	70	150
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	126	70	130
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	127	70	130
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 1027326)</b>								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	81.9	70	130
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	101	70	150
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	125	70	150
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	1.25 µg/L	102	70	150
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	97.5	70	150
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	76.8	70	130
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	82.8	70	130
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 1006714)</b>								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.5 µg/L	101	70	130
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.5 µg/L	113	70	130
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.5 µg/L	108	70	130
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.5 µg/L	122	70	130
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 1027326)</b>								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.5 µg/L	99.4	70	130
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.5 µg/L	100	70	130
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.5 µg/L	103	70	130
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.5 µg/L	96.4	70	130

### Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report		
				Spike Concentration	Spike Recovery (%) MS	Recovery Limits (%)
				Low	High	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 1002685)</b>						



Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 1002685) - continued</b>							
EM1709371-002	GW80_14/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	80.8	70	130
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 1027436)</b>							
EM1709371-011	GW74_14/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70	130
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 1009657)</b>							
EM1709192-009	Anonymous	ED043: Total Oxidised Sulfur as SO4 2-	----	500 mg/L	129	70	130
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 1032270)</b>							
EM1709371-011	GW74_14/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	500 mg/L	106	70	130
<b>ED045G: Chloride by Discrete Analyser (QCLot: 1002686)</b>							
EM1709371-002	GW80_14/07/17	ED045G: Chloride	16887-00-6	400 mg/L	97.5	70	130
<b>ED045G: Chloride by Discrete Analyser (QCLot: 1027435)</b>							
EM1709371-011	GW74_14/07/17	ED045G: Chloride	16887-00-6	400 mg/L	102	70	130
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 1002543)</b>							
EM1709340-001	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	94.0	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	83.2	81	133
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	85.0	71	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	84.4	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	83.7	75	133
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	86.7	64	134
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	86.4	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	89.3	75	131
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 1028385)</b>							
EM1709192-022	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	98.2	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	101	81	133
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	97.4	71	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	96.4	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	99.6	75	133
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	98.2	64	134
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	97.2	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	101	75	131
<b>EG020T: Total Metals by ICP-MS (QCLot: 1002545)</b>							
EM1709361-001	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	90.8	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	89.0	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	89.0	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	87.7	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	94.9	83	121



Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EG020T: Total Metals by ICP-MS (QCLot: 1002545) - continued</b>							
EM1709361-001	Anonymous	EG020A-T: Manganese	7439-96-5	1 mg/L	89.9	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	88.6	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	92.6	74	116
<b>EG020T: Total Metals by ICP-MS (QCLot: 1002547)</b>							
EM1709371-022	QC111_14/07/17	EG020A-T: Arsenic	7440-38-2	1 mg/L	112	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	107	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	107	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	107	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	114	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	110	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	109	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	114	74	116
<b>EG020T: Total Metals by ICP-MS (QCLot: 1027626)</b>							
EM1709192-022	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	98.2	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	98.2	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	87.9	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	86.6	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	93.9	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	94.6	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	92.1	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	93.9	74	116
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 1002544)</b>							
EM1709353-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	# 27.4	70	120
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 1028384)</b>							
EM1709371-011	GW74_14/07/17	EG035F: Mercury	7439-97-6	0.01 mg/L	84.6	70	120
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1007147)</b>							
EM1709231-004	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	88.9	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1007149)</b>							
EM1709371-017	GW45_14/07/17	EG035T: Mercury	7439-97-6	0.01 mg/L	87.2	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1027923)</b>							
EM1709371-011	GW74_14/07/17	EG035T: Mercury	7439-97-6	0.01 mg/L	80.5	70	130
<b>EK040P: Fluoride by PC Titrator (QCLot: 1004127)</b>							
EM1709249-004	Anonymous	EK040P: Fluoride	16984-48-8	5 mg/L	86.0	70	130
<b>EK040P: Fluoride by PC Titrator (QCLot: 1027404)</b>							
EM1709371-012	GW69_14/07/17	EK040P: Fluoride	16984-48-8	5 mg/L	107	70	130
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 1004192)</b>							



Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 1004192) - continued</b>							
EM1709371-002	GW80_14/07/17	EK055G: Ammonia as N	7664-41-7	1 mg/L	92.6	70	130
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 1030195)</b>							
EM1709371-011	GW74_14/07/17	EK055G: Ammonia as N	7664-41-7	1 mg/L	# Not Determined	70	130
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 1002687)</b>							
EM1709371-002	GW80_14/07/17	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	97.4	80	114
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 1027437)</b>							
EM1709371-011	GW74_14/07/17	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	90.7	80	114
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 1004193)</b>							
EM1709371-002	GW80_14/07/17	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	105	70	130
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 1030194)</b>							
EM1709371-011	GW74_14/07/17	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	97.1	70	130
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 1002688)</b>							
EM1709371-002	GW80_14/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	106	79	123
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 1027438)</b>							
EM1709371-011	GW74_14/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	102	79	123
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1007488)</b>							
EM1709231-004	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	94.1	80	114
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1007489)</b>							
EM1709376-001	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	96.0	80	114
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1033529)</b>							
EM1709371-011	GW74_14/07/17	EP005: Total Organic Carbon	----	100 mg/L	110	80	114
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1003964)</b>							
EM1709371-002	GW80_14/07/17	EP074-WF: Benzene	71-43-2	20 µg/L	113	76	128
		EP074-WF: Toluene	108-88-3	20 µg/L	95.4	72	132
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1026376)</b>							
EM1709371-011	GW74_14/07/17	EP074-WF: Benzene	71-43-2	20 µg/L	89.7	76	128
		EP074-WF: Toluene	108-88-3	20 µg/L	84.3	72	132
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1003964)</b>							
EM1709371-002	GW80_14/07/17	EP074-WF: 1,1-Dichloroethene	75-35-4	20 µg/L	102	63	129
		EP074-WF: Trichloroethene	79-01-6	20 µg/L	84.2	64	126
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1026376)</b>							
EM1709371-011	GW74_14/07/17	EP074-WF: 1,1-Dichloroethene	75-35-4	20 µg/L	86.7	63	129
		EP074-WF: Trichloroethene	79-01-6	20 µg/L	77.7	64	126





Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 1003964)</b>							
EM1709371-002	GW80_14/07/17	EP074-WF: Chlorobenzene	108-90-7	20 µg/L	95.2	81	119
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 1026376)</b>							
EM1709371-011	GW74_14/07/17	EP074-WF: Chlorobenzene	108-90-7	20 µg/L	86.6	81	119
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1003965)</b>							
EM1709371-002	GW80_14/07/17	EP080: C6 - C9 Fraction	----	280 µg/L	75.4	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1003968)</b>							
EM1709361-001	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	79.4	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1026375)</b>							
EM1709371-011	GW74_14/07/17	EP080: C6 - C9 Fraction	----	280 µg/L	62.5	43	125
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1003965)</b>							
EM1709371-002	GW80_14/07/17	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	74.0	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1003968)</b>							
EM1709361-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	76.0	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1026375)</b>							
EM1709371-011	GW74_14/07/17	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	62.2	44	122
<b>EP080: BTEXN (QCLot: 1003965)</b>							
EM1709371-002	GW80_14/07/17	EP080: Benzene	71-43-2	20 µg/L	111	68	130
		EP080: Toluene	108-88-3	20 µg/L	89.1	72	132
<b>EP080: BTEXN (QCLot: 1003968)</b>							
EM1709361-001	Anonymous	EP080: Benzene	71-43-2	20 µg/L	102	68	130
		EP080: Toluene	108-88-3	20 µg/L	103	72	132
<b>EP080: BTEXN (QCLot: 1026375)</b>							
EM1709371-011	GW74_14/07/17	EP080: Benzene	71-43-2	20 µg/L	85.3	68	130
		EP080: Toluene	108-88-3	20 µg/L	85.8	72	132
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 1006714)</b>							
EM1709371-003	GW81_14/07/17	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.5 µg/L	96.6	50	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.5 µg/L	122	50	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.5 µg/L	113	50	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.5 µg/L	92.6	50	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	99.8	50	130
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.5 µg/L	77.8	50	130
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 1027326)</b>							
EM1709371-013	GW61_14/07/17	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.5 µg/L	81.2	50	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.5 µg/L	83.2	50	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.5 µg/L	79.6	50	130



Sub-Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	Spike Recovery(%) MS	Recovery Limits (%)	
				Low	High		
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 1027326) - continued</b>							
EM1709371-013	GW61_14/07/17	EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.5 µg/L	76.6	50	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	88.2	50	130
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.5 µg/L	80.6	50	130
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 1006714)</b>							
EM1709371-003	GW81_14/07/17	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	82.4	50	130
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	87.6	50	130
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	84.2	50	130
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	118	50	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	92.2	50	130
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	92.0	50	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	91.4	50	130
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	80.6	50	130
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	114	50	130
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	73.4	50	130
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	66.3	50	150
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 1027326)</b>							
EM1709371-013	GW61_14/07/17	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	98.2	50	130
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	102	50	130
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	83.0	50	130
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	97.4	50	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	102	50	130
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	97.4	50	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	110	50	130
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	117	50	130
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	80.0	50	130
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	120	50	130
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	95.2	50	150
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 1006714)</b>							
EM1709371-003	GW81_14/07/17	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	99.6	50	130
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	112	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	121	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	1.25 µg/L	106	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	126	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	75.4	50	130



Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 1006714) - continued</b>							
EM1709371-003	GW81_14/07/17	EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	78.2	50	130
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 1027326)</b>							
EM1709371-013	GW61_14/07/17	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	111	50	130
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	95.7	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	127	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	1.25 µg/L	82.5	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	118	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	113	50	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	74.8	50	130
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 1006714)</b>							
EM1709371-003	GW81_14/07/17	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.5 µg/L	90.4	50	130
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.5 µg/L	104	50	130
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.5 µg/L	82.8	50	130
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.5 µg/L	91.2	50	130
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 1027326)</b>							
EM1709371-013	GW61_14/07/17	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.5 µg/L	110	50	130
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.5 µg/L	121	50	130
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.5 µg/L	84.4	50	130
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.5 µg/L	127	50	130

## QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM1709371	Page	: 1 of 24
Amendment	: 1		
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: MS AVERYLL COYNE	Telephone	: +61-3-8549 9608
Project	: 60537182	Date Samples Received	: 17-Jul-2017
Site	: ----	Issue Date	: 04-Aug-2017
Sampler	: BH, BP, JM	No. of samples received	: 25
Order number	: Task 3.2	No. of samples analysed	: 24

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

### Summary of Outliers

#### Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

#### Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

#### Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.





**Outliers : Quality Control Samples**

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
<b>Matrix Spike (MS) Recoveries</b>							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	EM1709371--011	GW74_14/07/17	Sulfate as SO4 - Turbidimetric	14808-79-8	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EG035F: Dissolved Mercury by FIMS	EM1709353--001	Anonymous	Mercury	7439-97-6	27.4 %	70-120%	Recovery less than lower data quality objective
EK055G: Ammonia as N by Discrete Analyser	EM1709371--011	GW74_14/07/17	Ammonia as N	7664-41-7	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.

**Outliers : Analysis Holding Time Compliance**

Matrix: **WATER**

Method	Container / Client Sample ID(s)	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue	
<b>EA005P: pH by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural</b>	GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	----	----	----	01-Aug-2017	14-Jul-2017	18
<b>Clear Plastic Bottle - Natural</b>	GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	----	----	----	19-Jul-2017	14-Jul-2017	5
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>								
<b>Clear Plastic Bottle - Natural</b>	GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	----	----	----	01-Aug-2017	21-Jul-2017	11
<b>ED037P: Alkalinity by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural</b>	GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	----	----	----	01-Aug-2017	28-Jul-2017	4
<b>EK057G: Nitrite as N by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Natural</b>	GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	----	----	----	01-Aug-2017	16-Jul-2017	16



Matrix: **WATER**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EK057G: Nitrite as N by Discrete Analyser - Analysis Holding Time Compliance</b>						
<b>Clear Plastic Bottle - Natural</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17, GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	----	----	----	18-Jul-2017	16-Jul-2017	2
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>						
<b>Clear Plastic Bottle - Natural</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17, GW69_14/07/17, GW65_14/07/17	----	----	----	01-Aug-2017	16-Jul-2017	16
<b>Clear Plastic Bottle - Natural</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17, GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	----	----	----	18-Jul-2017	16-Jul-2017	2
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>						
<b>Amber VOC Vial - Sulfuric Acid</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17, GW69_14/07/17, GW65_14/07/17	31-Jul-2017	28-Jul-2017	3	01-Aug-2017	28-Jul-2017	4
<b>EP074B: Oxygenated Compounds</b>						
<b>Amber VOC Vial - Sulfuric Acid</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17, GW69_14/07/17, GW65_14/07/17	31-Jul-2017	28-Jul-2017	3	01-Aug-2017	28-Jul-2017	4
<b>EP074C: Sulfonated Compounds</b>						
<b>Amber VOC Vial - Sulfuric Acid</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17, GW69_14/07/17, GW65_14/07/17	31-Jul-2017	28-Jul-2017	3	01-Aug-2017	28-Jul-2017	4
<b>EP074D: Fumigants</b>						
<b>Amber VOC Vial - Sulfuric Acid</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17, GW69_14/07/17, GW65_14/07/17	31-Jul-2017	28-Jul-2017	3	01-Aug-2017	28-Jul-2017	4
<b>EP074E: Halogenated Aliphatic Compounds</b>						



Matrix: **WATER**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis			
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue	
<b>EP074E: Halogenated Aliphatic Compounds - Analysis Holding Time Compliance</b>							
<b>Amber VOC Vial - Sulfuric Acid</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	31-Jul-2017	28-Jul-2017	3	01-Aug-2017	28-Jul-2017	4
<b>EP074F: Halogenated Aromatic Compounds</b>							
<b>Amber VOC Vial - Sulfuric Acid</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	31-Jul-2017	28-Jul-2017	3	01-Aug-2017	28-Jul-2017	4
<b>EP074G: Trihalomethanes</b>							
<b>Amber VOC Vial - Sulfuric Acid</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	31-Jul-2017	28-Jul-2017	3	01-Aug-2017	28-Jul-2017	4
<b>EP074H: Naphthalene</b>							
<b>Amber VOC Vial - Sulfuric Acid</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	31-Jul-2017	28-Jul-2017	3	01-Aug-2017	28-Jul-2017	4
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>							
<b>Amber Glass Bottle - Unpreserved</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	01-Aug-2017	21-Jul-2017	11	----	----	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>							
<b>Amber Glass Bottle - Unpreserved</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	01-Aug-2017	21-Jul-2017	11	----	----	----
<b>Amber VOC Vial - Sulfuric Acid</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	31-Jul-2017	28-Jul-2017	3	01-Aug-2017	28-Jul-2017	4
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>							
<b>Amber Glass Bottle - Unpreserved</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	01-Aug-2017	21-Jul-2017	11	----	----	----



Matrix: **WATER**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis			
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Analysis Holding Time</b>							
<b>Amber VOC Vial - Sulfuric Acid</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17	31-Jul-2017	28-Jul-2017	3	01-Aug-2017	28-Jul-2017	4
<b>EP080: BTEXN</b>							
<b>Amber VOC Vial - Sulfuric Acid</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17	31-Jul-2017	28-Jul-2017	3	01-Aug-2017	28-Jul-2017	4

**Outliers : Frequency of Quality Control Samples**

Matrix: **WATER**

Quality Control Sample Type Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
<b>Laboratory Duplicates (DUP)</b>					
Fluoride by PC Titrator	3	31	9.68	10.00	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	0	20	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatle Fraction	0	22	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>					
PAH/Phenols (GC/MS - SIM)	0	20	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatle Fraction	0	22	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

**Analysis Holding Time Compliance**

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation





Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EA005P: pH by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural (EA005-P)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	----	----	----	01-Aug-2017	14-Jul-2017	*
<b>Clear Plastic Bottle - Natural (EA005-P)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	----	----	----	19-Jul-2017	14-Jul-2017	*
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>								
<b>Clear Plastic Bottle - Natural (EA015H)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17	GW80_14/07/17, GW72_14/07/17,	14-Jul-2017	----	----	----	19-Jul-2017	21-Jul-2017	✓
<b>Clear Plastic Bottle - Natural (EA015H)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	----	----	----	01-Aug-2017	21-Jul-2017	*
<b>Clear Plastic Bottle - Natural (EA015H)</b> GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	GW41_14/07/17, GW02_14/07/17,	14-Jul-2017	----	----	----	19-Jul-2017	21-Jul-2017	✓
<b>ED037P: Alkalinity by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural (ED037-P)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17	GW80_14/07/17, GW72_14/07/17,	14-Jul-2017	----	----	----	19-Jul-2017	28-Jul-2017	✓
<b>Clear Plastic Bottle - Natural (ED037-P)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	----	----	----	01-Aug-2017	28-Jul-2017	*
<b>Clear Plastic Bottle - Natural (ED037-P)</b> GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	GW41_14/07/17, GW02_14/07/17,	14-Jul-2017	----	----	----	19-Jul-2017	28-Jul-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>								
<b>Clear Plastic Bottle - Natural (ED041G)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	----	----	----	01-Aug-2017	11-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (ED041G)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	----	----	----	18-Jul-2017	11-Aug-2017	✓
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>								
<b>Clear Plastic Bottle - Natural (ED043)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	03-Aug-2017	11-Aug-2017	✓	04-Aug-2017	11-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (ED043)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	21-Jul-2017	11-Aug-2017	✓	21-Jul-2017	11-Aug-2017	✓
<b>ED045G: Chloride by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Natural (ED045G)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	----	----	----	01-Aug-2017	11-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (ED045G)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	----	----	----	18-Jul-2017	11-Aug-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>ED093F: Dissolved Major Cations</b>								
<b>Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	----	----	----	03-Aug-2017	11-Aug-2017	✓
<b>Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	----	----	----	19-Jul-2017	11-Aug-2017	✓
<b>EG020F: Dissolved Metals by ICP-MS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	----	----	----	02-Aug-2017	10-Jan-2018	✓
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17, QC112_14/07/17	GW80_14/07/17, GW72_14/07/17, QC314_14/07/17, GW41_14/07/17, GW02_14/07/17, QC111_14/07/17,	14-Jul-2017	----	----	----	19-Jul-2017	10-Jan-2018	✓
<b>EG020T: Total Metals by ICP-MS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	01-Aug-2017	10-Jan-2018	✓	02-Aug-2017	10-Jan-2018	✓
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, QC314_14/07/17, GW41_14/07/17, GW02_14/07/17, QC111_14/07/17,	GW80_14/07/17, GW72_14/07/17, QC208_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17, QC112_14/07/17	14-Jul-2017	18-Jul-2017	10-Jan-2018	✓	19-Jul-2017	10-Jan-2018	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EG035F: Dissolved Mercury by FIMS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	----	----	----	03-Aug-2017	11-Aug-2017	✓
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17, QC112_14/07/17	GW80_14/07/17, GW72_14/07/17, QC314_14/07/17, GW41_14/07/17, GW02_14/07/17, QC111_14/07/17,	14-Jul-2017	----	----	----	19-Jul-2017	11-Aug-2017	✓
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	----	----	----	03-Aug-2017	11-Aug-2017	✓
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, QC314_14/07/17, GW41_14/07/17, GW02_14/07/17, QC111_14/07/17,	GW80_14/07/17, GW72_14/07/17, QC208_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17, QC112_14/07/17	14-Jul-2017	----	----	----	20-Jul-2017	11-Aug-2017	✓
<b>EK040P: Fluoride by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural (EK040P)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	----	----	----	01-Aug-2017	11-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (EK040P)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	----	----	----	19-Jul-2017	11-Aug-2017	✓





Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EK055G: Ammonia as N by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Sulfuric Acid (EK055G)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	----	----	----	03-Aug-2017	11-Aug-2017	✓
<b>Clear Plastic Bottle - Sulfuric Acid (EK055G)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	----	----	----	19-Jul-2017	11-Aug-2017	✓
<b>EK057G: Nitrite as N by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Natural (EK057G)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	----	----	----	01-Aug-2017	16-Jul-2017	*
<b>Clear Plastic Bottle - Natural (EK057G)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	----	----	----	18-Jul-2017	16-Jul-2017	*
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Sulfuric Acid (EK059G)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	----	----	----	03-Aug-2017	11-Aug-2017	✓
<b>Clear Plastic Bottle - Sulfuric Acid (EK059G)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	----	----	----	19-Jul-2017	11-Aug-2017	✓



Matrix: **WATER**

Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>								
<b>Clear Plastic Bottle - Natural (EK071G)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	----	----	----	01-Aug-2017	16-Jul-2017	✘
<b>Clear Plastic Bottle - Natural (EK071G)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	----	----	----	18-Jul-2017	16-Jul-2017	✘
<b>EP005: Total Organic Carbon (TOC)</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP005)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	----	----	----	03-Aug-2017	11-Aug-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP005)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	----	----	----	20-Jul-2017	11-Aug-2017	✔
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	19-Jul-2017	28-Jul-2017	✔	19-Jul-2017	28-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	31-Jul-2017	28-Jul-2017	✘	01-Aug-2017	28-Jul-2017	✘



Matrix: **WATER**

Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP074B: Oxygenated Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	19-Jul-2017	28-Jul-2017	✔	19-Jul-2017	28-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	31-Jul-2017	28-Jul-2017	✘	01-Aug-2017	28-Jul-2017	✘
<b>EP074C: Sulfonated Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	19-Jul-2017	28-Jul-2017	✔	19-Jul-2017	28-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	31-Jul-2017	28-Jul-2017	✘	01-Aug-2017	28-Jul-2017	✘
<b>EP074D: Fumigants</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	19-Jul-2017	28-Jul-2017	✔	19-Jul-2017	28-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	31-Jul-2017	28-Jul-2017	✘	01-Aug-2017	28-Jul-2017	✘



Matrix: **WATER** Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP074E: Halogenated Aliphatic Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	19-Jul-2017	28-Jul-2017	✔	19-Jul-2017	28-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	31-Jul-2017	28-Jul-2017	✘	01-Aug-2017	28-Jul-2017	✘
<b>EP074F: Halogenated Aromatic Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	19-Jul-2017	28-Jul-2017	✔	19-Jul-2017	28-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	31-Jul-2017	28-Jul-2017	✘	01-Aug-2017	28-Jul-2017	✘
<b>EP074G: Trihalomethanes</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	19-Jul-2017	28-Jul-2017	✔	19-Jul-2017	28-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	31-Jul-2017	28-Jul-2017	✘	01-Aug-2017	28-Jul-2017	✘





Matrix: **WATER**

Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP074H: Naphthalene</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	19-Jul-2017	28-Jul-2017	✔	19-Jul-2017	28-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	31-Jul-2017	28-Jul-2017	✘	01-Aug-2017	28-Jul-2017	✘
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
<b>Amber Glass Bottle - Unpreserved (EP075(SIM))</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	01-Aug-2017	21-Jul-2017	✘	02-Aug-2017	10-Sep-2017	✔
<b>Amber Glass Bottle - Unpreserved (EP075(SIM))</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, GW41_14/07/17, GW02_14/07/17,	GW80_14/07/17, GW72_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17	14-Jul-2017	18-Jul-2017	21-Jul-2017	✔	20-Jul-2017	27-Aug-2017	✔



Matrix: **WATER** Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	01-Aug-2017	21-Jul-2017	✘	02-Aug-2017	10-Sep-2017	✔
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, QC314_14/07/17, GW41_14/07/17, GW02_14/07/17, QC111_14/07/17,	GW80_14/07/17, GW72_14/07/17, QC208_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17, QC112_14/07/17	14-Jul-2017	18-Jul-2017	21-Jul-2017	✔	20-Jul-2017	27-Aug-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, QC209_14/07/17, QC314_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17, QC112_14/07/17,	GW80_14/07/17, GW72_14/07/17, QC208_14/07/17, QC210_14/07/17, QC315_14/07/17, GW41_14/07/17, GW02_14/07/17, QC111_14/07/17, QC113_14/07/17	14-Jul-2017	19-Jul-2017	28-Jul-2017	✔	19-Jul-2017	28-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	31-Jul-2017	28-Jul-2017	✘	01-Aug-2017	28-Jul-2017	✘
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> QC114_17/07/17		17-Jul-2017	19-Jul-2017	31-Jul-2017	✔	19-Jul-2017	31-Jul-2017	✔



Matrix: **WATER** Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>								
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	01-Aug-2017	21-Jul-2017	✘	02-Aug-2017	10-Sep-2017	✔
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, QC314_14/07/17, GW41_14/07/17, GW02_14/07/17, QC111_14/07/17,	GW80_14/07/17, GW72_14/07/17, QC208_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17, QC112_14/07/17	14-Jul-2017	18-Jul-2017	21-Jul-2017	✔	20-Jul-2017	27-Aug-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, QC209_14/07/17, QC314_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17, QC112_14/07/17,	GW80_14/07/17, GW72_14/07/17, QC208_14/07/17, QC210_14/07/17, QC315_14/07/17, GW41_14/07/17, GW02_14/07/17, QC111_14/07/17, QC113_14/07/17	14-Jul-2017	19-Jul-2017	28-Jul-2017	✔	19-Jul-2017	28-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	31-Jul-2017	28-Jul-2017	✘	01-Aug-2017	28-Jul-2017	✘
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> QC114_17/07/17		17-Jul-2017	19-Jul-2017	31-Jul-2017	✔	19-Jul-2017	31-Jul-2017	✔



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080: BTEXN</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW08_14/07/17, GW81_14/07/17, GW75_14/07/17, QC209_14/07/17, QC314_14/07/17, GW45_14/07/17, GW47_14/07/17, QC109_14/07/17, QC112_14/07/17,	GW80_14/07/17, GW72_14/07/17, QC208_14/07/17, QC210_14/07/17, QC315_14/07/17, GW41_14/07/17, GW02_14/07/17, QC111_14/07/17, QC113_14/07/17	14-Jul-2017	19-Jul-2017	28-Jul-2017	✔	19-Jul-2017	28-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW74_14/07/17, GW61_14/07/17, GW30_14/07/17	GW69_14/07/17, GW65_14/07/17,	14-Jul-2017	31-Jul-2017	28-Jul-2017	✖	01-Aug-2017	28-Jul-2017	✖
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> QC114_17/07/17		17-Jul-2017	19-Jul-2017	31-Jul-2017	✔	19-Jul-2017	31-Jul-2017	✔
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW61_14/07/17		14-Jul-2017	----	----	----	01-Aug-2017	10-Jan-2018	✔
<b>HDPE (no PTFE) (EP231X)</b> GW81_14/07/17, GW41_14/07/17	GW72_14/07/17,	14-Jul-2017	----	----	----	20-Jul-2017	10-Jan-2018	✔
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW61_14/07/17		14-Jul-2017	----	----	----	01-Aug-2017	10-Jan-2018	✔
<b>HDPE (no PTFE) (EP231X)</b> GW81_14/07/17, GW41_14/07/17	GW72_14/07/17,	14-Jul-2017	----	----	----	20-Jul-2017	10-Jan-2018	✔
<b>EP231C: Perfluoroalkyl Sulfonamides</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW61_14/07/17		14-Jul-2017	----	----	----	01-Aug-2017	10-Jan-2018	✔
<b>HDPE (no PTFE) (EP231X)</b> GW81_14/07/17, GW41_14/07/17	GW72_14/07/17,	14-Jul-2017	----	----	----	20-Jul-2017	10-Jan-2018	✔
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW61_14/07/17		14-Jul-2017	----	----	----	01-Aug-2017	10-Jan-2018	✔
<b>HDPE (no PTFE) (EP231X)</b> GW81_14/07/17, GW41_14/07/17	GW72_14/07/17,	14-Jul-2017	----	----	----	20-Jul-2017	10-Jan-2018	✔



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 Work Order : EM1709371 Amendment 1  
 Client : AECOM Australia Pty Ltd  
 Project : 60537182



Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP231P: PFAS Sums</b>							
<b>HDPE (no PTFE) (EP231X)</b> GW61_14/07/17	14-Jul-2017	----	----	----	01-Aug-2017	10-Jan-2018	✓
<b>HDPE (no PTFE) (EP231X)</b> GW81_14/07/17, GW41_14/07/17	GW72_14/07/17, 14-Jul-2017	----	----	----	20-Jul-2017	10-Jan-2018	✓



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Laboratory Duplicates (DUP)</b>							
Alkalinity by PC Titrator	ED037-P	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	4	33	12.12	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	4	37	10.81	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	3	31	9.68	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	4	31	12.90	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	20	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	4	33	12.12	10.00	✔	NEPM 2013 B3 & ALS QC Standard
pH by PC Titrator	EA005-P	4	34	11.76	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	3	17	17.65	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	6	51	11.76	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	5	42	11.90	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	6	51	11.76	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	3	19	15.79	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	22	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	6	54	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	3	26	11.54	10.00	✔	NEPM 2013 B3 & ALS QC Standard
<b>Laboratory Control Samples (LCS)</b>							
Alkalinity by PC Titrator	ED037-P	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	33	6.06	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	37	5.41	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	2	31	6.45	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	31	6.45	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	2	20	10.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	33	6.06	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	17	11.76	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard



Matrix: **WATER**

Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Control Samples (LCS) - Continued</b>							
Total Dissolved Solids (High Level)	EA015H	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	51	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	3	42	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	3	51	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	2	19	10.53	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	22	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	54	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
<b>Method Blanks (MB)</b>							
Ammonia as N by Discrete analyser	EK055G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	33	6.06	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	37	5.41	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	2	31	6.45	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	31	6.45	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	2	20	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	33	6.06	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	17	11.76	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	51	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	3	42	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	3	51	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	2	19	10.53	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	22	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	54	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>							
Ammonia as N by Discrete analyser	EK055G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	33	6.06	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	37	5.41	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	2	31	6.45	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	20	0.00	5.00	*	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	33	6.06	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	17	11.76	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Matrix Spikes (MS) - Continued</b>							
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	51	5.88	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	3	42	7.14	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	3	51	5.88	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	2	19	10.53	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	22	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	54	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	2	26	7.69	5.00	✔	NEPM 2013 B3 & ALS QC Standard





## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by PC Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of 'filterable' residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM (2013) Schedule B(3)
Alkalinity by PC Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM (2013) Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Oxidised Sulfur as SO4 2-	ED043	WATER	In house: The sample is treated with Peroxide to convert all Sulfur species to Sulfate. Sulfate in the sample can then be determined by ICPAES and reported as TOS as SO4 2-.
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm APHA 21st edition seal method 2 017-1-L april 2003
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM (2013) Schedule B(3)  Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM (2013) Schedule B(3)  Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM (2013) Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.



Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Fluoride by PC Titrator	EK040P	WATER	In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3)
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO <sub>2</sub> - B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO <sub>3</sub> - F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined separately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite and Nitrate as N (NO <sub>x</sub> ) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO <sub>3</sub> - F. Combined oxidised Nitrogen (NO <sub>2</sub> +NO <sub>3</sub> ) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with orthophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM (2013) Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Volatile Organic Compounds WF Detection Limits	EP074-WF	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)



<i>Analytical Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with methanol. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers.
<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Total Oxidisable Sulfur as SO4 2- Prep	ED043-PR	WATER	In house
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (2013) Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

ANZ  
FQM - Generic Chain of Custody Form

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: JM BP BH		Destination Laboratory										
PROJECT MANAGER (PM): Averyll Coyne		SITE:		MOBILE: 0409536240		PHONE:										
PROJECT NUMBER & TASK CO 60537182		P.O. NO.:		EMAIL REPORT TO: Averyll Coyne		ALS										
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)												
[REDACTED]		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:		pH, TDS, TOC	TRH (GS-10)	PAH	Nitrogen oxides/sulphur oxides	VOC (ALSEP074-WF) Includes BTEXN	In situ chemistry (Hg, Cu, Mg), (Ni, Cr), (PCOS), (NO3), (NO2), (NH3) (PO4), (SO4), (F), (Mn)	PEAS - 28 analytes	Dissolved metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)	Total Metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)	BTEXN TRH (GS-10)	HOLD	Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.	
															SAMPLE INFORMATION (note: S = Soil, W=Water)	
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles										
1	GW08-14/07/17	W	14/7/17			10	✓	✓	✓	✓	✓	✓	✓	✓	✓	
2	GW80-14/07/17					10	✓	✓	✓	✓	✓	✓	✓	✓	✓	
3	GW31-14/07/17					12	✓	✓	✓	✓	✓	✓	✓	✓	✓	
4	GW72-14/07/17					12	✓	✓	✓	✓	✓	✓	✓	✓	✓	
5	GW75-14/07/17					10	✓	✓	✓	✓	✓	✓	✓	✓	✓	
6	QC203-14/07/17					4	✓					✓	✓	✓	✓	
7	QC209-14/07/17					1							✓	✓	✓	
8	QC210-14/07/17					1							✓	✓	✓	
9	QC312-14/07/17					10						✓	✓	✓	✓	
10	QC314-14/7/17					5	✓					✓	✓	✓	✓	
11	GW74-14/7/17					10						✓	✓	✓	✓	
12	GW69-14/7/17					10										
13	GW61-14/7/17					12										
14	GW65-14/7/17					10										
15	GW30-14/7/17					10										
16	QC315-14/7/17					1							✓	✓	✓	
17	GW45-14/07/17					10	-	-	-	-	-	-	-	-	-	
18	GW41-14/07/17					12	-	-	-	-	-	-	-	-	-	
19	GW47-14/07/17					10	-	-	-	-	-	-	-	-	-	
RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:		METHOD OF SHIPMENT:										
Name: Jacob Muller	Date:	Name:	Date:	Name: [Signature]	Date: 17/7	Date:	Con' Note No:									
Of: 17/07/17	Time:	Of:	Time:	Of: Au	Time: 9-30	Time:	Transport Co:									

Environmental Division  
Melbourne  
Work Order Reference  
EM1709371

Am  
18/3



Telephone : + 61-3-8549 9600



ANZ  
**FQM - Generic Chain of Custody Form**

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: JM BP BH		Destination Laboratory							
PROJECT MANAGER (PM): <b>Averyll Coyne</b>		SITE:		MOBILE: 0409536240		ALS							
PROJECT NUMBER & TASK CO 60537182		P.O. NO.:		EMAIL REPORT TO: Averyll Coyne									
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)									
FOR LABORATORY USE ONLY COOLER SEAL (if applicable) SERIAL YES NO N/A SAMPLE TEMPERATURE CHILLED YES NO N/A		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:		PH, TDS, TOC	TRH (CG-40)	PAH	Nitrogen oxides/sulphur oxides	VOC (ALSEP074-WF) includes BTEX	Ionic chemistry (Na, Ca), (Mg), (K), (Cl), (HCO3), (NO3), (NO2), (NH3) (PO4), (SO4), (F), (Mn)	PFAS - 28 analytes	Dissolved metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)	Total Metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)	Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.
SAMPLE INFORMATION (note: S = Soil, W=Water)		CONTAINER INFORMATION											
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles							
20	GW02-14/07/17	W	14/07/17			10	/	/	/	/	/	/	
21	QC109-14/07/17					10	-	-	-	-	-	-	
22	QC110-14/07/17												
22	QC111-14/07/17						/				/	/	
23	QC112-14/07/17						/				/	/	
24	QC113-14/07/17										/	/	
25	QC114-17/07/17										/	/	
RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:		METHOD OF SHIPMENT							
Name:	Date:	Name:	Date:	Name: <b>MANU</b>	Date: <b>17</b>	Name: <b>ALI</b>	Date: <b>0-30</b>						
Of:	Time:	Of:	Time:	Of: <b>ALI</b>	Time:	Of: <b>ALI</b>	Time:						

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic  
 V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;  
 F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag. Soil Container Codes: Jar = Unpreserved glass jar

## CERTIFICATE OF ANALYSIS

<b>Work Order</b>	<b>: EM1709415</b>	<b>Page</b>	: 1 of 25
<b>Client</b>	<b>: AECOM Australia Pty Ltd</b>	<b>Laboratory</b>	: Environmental Division Melbourne
<b>Contact</b>	<b>: MS AVERYLL COYNE</b>	<b>Contact</b>	: Carol Walsh
<b>Address</b>	<b>: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004</b>	<b>Address</b>	: 4 Westall Rd Springvale VIC Australia 3171
<b>Telephone</b>	<b>: +61 03 9653 1234</b>	<b>Telephone</b>	: +61-3-8549 9608
<b>Project</b>	<b>: 60537182</b>	<b>Date Samples Received</b>	: 18-Jul-2017 14:00
<b>Order number</b>	<b>: Task 3.2</b>	<b>Date Analysis Commenced</b>	: 19-Jul-2017
<b>C-O-C number</b>	<b>: ----</b>	<b>Issue Date</b>	: 25-Jul-2017 15:57
<b>Sampler</b>	<b>: BH, BP, JM</b>		
<b>Site</b>	<b>: ----</b>		
<b>Quote number</b>	<b>: ME/199/16</b>		
<b>No. of samples received</b>	<b>: 13</b>		
<b>No. of samples analysed</b>	<b>: 11</b>		



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

**Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.**

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC



## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
LOR = Limit of reporting  
^ = This result is computed from individual analyte detections at or above the level of reporting  
ø = ALS is not NATA accredited for these tests.  
~ = Indicates an estimated value.

- TDS by method EA-015 for EM1709415 #2,4,10,12 high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- ED037-P: EM1709395 #3 Poor duplicate precision for Carbonate Alkalinity as CaCO<sub>3</sub> due to sample heterogeneity. Confirmed by re-analysis.
- EK057G: Results for EM1709415-002 have been confirmed by re-preparation and re-analysis.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- ED045G: The presence of thiocyanate can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW51_17/07/17	GW53_17/07/17	GW62_17/07/17	GW48_17/07/17	QC211_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709415-001	EM1709415-002	EM1709415-003	EM1709415-004	EM1709415-005	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.53	6.89	7.37	6.64	----	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	2260	1170	3230	1380	----	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	327	371	188	271	----	
Total Alkalinity as CaCO3	----	1	mg/L	327	371	188	271	----	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	213	320	243	393	----	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	442	710	326	657	----	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	1080	91	1510	124	----	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	78	90	299	86	----	
Magnesium	7439-95-4	1	mg/L	62	38	75	52	----	
Sodium	7440-23-5	1	mg/L	692	188	638	180	----	
Potassium	7440-09-7	1	mg/L	25	10	30	7	----	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.04	0.46	<0.01	0.52	----	
Arsenic	7440-38-2	0.001	mg/L	0.003	0.009	0.001	0.005	----	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----	
Chromium	7440-47-3	0.001	mg/L	0.002	0.007	<0.001	0.003	----	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	0.001	----	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----	
Manganese	7439-96-5	0.001	mg/L	0.025	0.078	0.125	0.044	----	
Nickel	7440-02-0	0.001	mg/L	0.014	0.024	0.018	0.031	----	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----	
Zinc	7440-66-6	0.005	mg/L	0.005	0.013	0.006	0.009	----	
Iron	7439-89-6	0.05	mg/L	1.64	2.25	0.32	5.66	----	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	10.0	14.9	11.6	30.8	<0.01	
Arsenic	7440-38-2	0.001	mg/L	0.018	0.030	0.022	0.034	<0.001	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW51_17/07/17	GW53_17/07/17	GW62_17/07/17	GW48_17/07/17	QC211_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-001	EM1709415-002	EM1709415-003	EM1709415-004	EM1709415-005	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	0.0001	0.0001	<0.0001	0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.028	0.052	0.026	0.090	<0.001	
Copper	7440-50-8	0.001	mg/L	0.008	0.008	0.008	0.019	<0.001	
Nickel	7440-02-0	0.001	mg/L	0.026	0.042	0.031	0.063	<0.001	
Lead	7439-92-1	0.001	mg/L	0.011	0.013	0.013	0.020	<0.001	
Zinc	7440-66-6	0.005	mg/L	0.096	0.054	0.030	0.089	<0.005	
Manganese	7439-96-5	0.001	mg/L	0.054	0.102	0.168	0.096	----	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	13.8	13.9	19.8	37.5	<0.05	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.5	0.2	0.7	0.2	----	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	0.33	1.23	0.26	0.91	----	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.02	<0.01	0.03	----	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	0.01	0.02	1.39	----	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.03	0.02	1.42	----	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.07	0.02	<0.01	<0.01	----	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	41.4	16.6	51.4	17.1	----	
Total Cations	----	0.01	meq/L	39.7	16.0	49.6	16.6	----	
Ionic Balance	----	0.01	%	2.09	1.80	1.78	1.53	----	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	14	47	5	36	----	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW51_17/07/17	GW53_17/07/17	GW62_17/07/17	GW48_17/07/17	QC211_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-001	EM1709415-002	EM1709415-003	EM1709415-004	EM1709415-005	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	<1	<1	<1	----	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	<1	<1	----	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	<1	<1	----	
Styrene	100-42-5	1	µg/L	<1	<1	<1	<1	----	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	<1	<1	----	
Isopropylbenzene	98-82-8	1	µg/L	<1	<1	<1	<1	----	
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	<1	<1	----	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	<1	<1	----	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	<1	<1	----	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	<1	<1	----	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	<1	<1	----	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	<1	<1	----	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	<1	<1	----	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	<10	<10	----	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	<10	<10	----	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	<10	<10	----	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	<10	<10	----	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	<10	<10	----	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	<1	<1	<1	----	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	----	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	----	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	----	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	----	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	----	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	<10	<10	----	
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	----	
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	<10.0	<10.0	----	
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	----	
Chloroethane	75-00-3	10	µg/L	<10	<10	<10	<10	----	
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW51_17/07/17	GW53_17/07/17	GW62_17/07/17	GW48_17/07/17	QC211_17/07/17
Client sampling date / time					17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709415-001	EM1709415-002	EM1709415-003	EM1709415-004	EM1709415-005	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	----	
Iodomethane	74-88-4	1	µg/L	<1	<1	<1	<1	----	
Methylene chloride	75-09-2	4	µg/L	<4	<4	<4	<4	----	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	1	<1	----	
1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	<1	<1	----	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	8	<1	2	<1	----	
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	----	
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	----	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	----	
1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	----	
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	----	
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	----	
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	----	
1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	----	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	----	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	----	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	----	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	<1	<1	----	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	----	
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	----	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	<1	<1	----	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	----	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	<1	<1	<1	----	
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	----	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	<1	----	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	----	
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	<1	<1	----	
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	<1	<1	----	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	<1	<1	----	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	<1	<1	----	
<b>EP074G: Trihalomethanes</b>									



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW51_17/07/17	GW53_17/07/17	GW62_17/07/17	GW48_17/07/17	QC211_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-001	EM1709415-002	EM1709415-003	EM1709415-004	EM1709415-005	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	<1	<1	<1	<1	----	
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	<1	<1	----	
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	----	
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	----	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW51_17/07/17	GW53_17/07/17	GW62_17/07/17	GW48_17/07/17	QC211_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-001	EM1709415-002	EM1709415-003	EM1709415-004	EM1709415-005	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	----	----	----	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	----	----	----	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.05	----	----	----	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	----	----	----	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.01	----	----	----	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	----	----	----	----	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	----	----	----	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	----	----	----	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	----	----	----	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	----	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW51_17/07/17	GW53_17/07/17	GW62_17/07/17	GW48_17/07/17	QC211_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709415-001	EM1709415-002	EM1709415-003	EM1709415-004	EM1709415-005	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	----	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	----	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	----	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	----	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	----	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	----	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	----	----	----	----	----
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	----	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	----	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	----	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	----	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	----	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	----	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	----	----	----	----	----
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	----	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	----	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	----	----	----	----	----



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW51_17/07/17	GW53_17/07/17	GW62_17/07/17	GW48_17/07/17	QC211_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-001	EM1709415-002	EM1709415-003	EM1709415-004	EM1709415-005	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	----	----	----	----	----
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	0.06	----	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.06	----	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	0.06	----	----	----	----	----
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	99.6	101	95.7	98.0	----	----
Toluene-D8	2037-26-5	1	%	106	108	100	102	----	----
4-Bromofluorobenzene	460-00-4	1	%	102	99.1	99.8	100	----	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	29.0	26.5	30.2	27.3	----	----
2-Chlorophenol-D4	93951-73-6	1	%	81.8	73.9	86.4	74.2	----	----
2,4,6-Tribromophenol	118-79-6	1	%	70.3	68.4	76.8	69.7	----	----
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	75.2	66.8	80.5	74.3	----	----
Anthracene-d10	1719-06-8	1	%	88.3	78.6	90.7	79.2	----	----
4-Terphenyl-d14	1718-51-0	1	%	92.4	78.2	93.3	83.0	----	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	103	105	99.6	102	101	101
Toluene-D8	2037-26-5	2	%	97.3	99.1	91.6	92.7	98.3	98.3
4-Bromofluorobenzene	460-00-4	2	%	98.9	97.5	99.8	98.0	102	102
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	94.3	----	----	----	----	----



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC212_17/07/17	QC213_17/07/17	QC214_17/07/17	GW10_17/07/17	GW14_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-006	EM1709415-007	EM1709415-008	EM1709415-009	EM1709415-010	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	----	----	----	6.65	6.46	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	----	----	----	462	392	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	----	----	----	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	----	----	----	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	----	----	----	234	59	
Total Alkalinity as CaCO3	----	1	mg/L	----	----	----	234	59	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	----	----	----	102	8	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	----	----	----	154	<10	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	----	----	----	24	11	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	----	----	----	67	16	
Magnesium	7439-95-4	1	mg/L	----	----	----	21	3	
Sodium	7440-23-5	1	mg/L	----	----	----	42	12	
Potassium	7440-09-7	1	mg/L	----	----	----	8	2	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	----	----	----	0.08	0.63	
Arsenic	7440-38-2	0.001	mg/L	----	----	----	0.006	0.004	
Cadmium	7440-43-9	0.0001	mg/L	----	----	----	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	----	----	----	0.003	<0.001	
Copper	7440-50-8	0.001	mg/L	----	----	----	0.002	0.002	
Lead	7439-92-1	0.001	mg/L	----	----	----	0.001	<0.001	
Manganese	7439-96-5	0.001	mg/L	----	----	----	0.020	<0.001	
Nickel	7440-02-0	0.001	mg/L	----	----	----	0.023	0.004	
Selenium	7782-49-2	0.01	mg/L	----	----	----	<0.01	<0.01	
Zinc	7440-66-6	0.005	mg/L	----	----	----	0.028	0.024	
Iron	7439-89-6	0.05	mg/L	----	----	----	1.16	0.17	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	<0.01	----	----	7.72	17.7	
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	0.034	0.015	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC212_17/07/17	QC213_17/07/17	QC214_17/07/17	GW10_17/07/17	GW14_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-006	EM1709415-007	EM1709415-008	EM1709415-009	EM1709415-010	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	0.029	0.022	
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	0.032	0.013	
Nickel	7440-02-0	0.001	mg/L	<0.001	----	----	0.037	0.015	
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	0.066	0.013	
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	0.166	0.066	
Manganese	7439-96-5	0.001	mg/L	----	----	----	0.034	0.014	
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	<0.05	----	----	11.3	7.66	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	----	----	----	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	----	----	----	0.4	0.6	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	----	----	----	0.07	0.02	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	----	----	----	<0.01	<0.01	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	----	----	----	<0.01	0.01	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	----	----	----	<0.01	0.01	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	----	----	----	<0.01	0.19	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	----	----	----	7.48	1.66	
Total Cations	----	0.01	meq/L	----	----	----	7.10	1.62	
Ionic Balance	----	0.01	%	----	----	----	2.56	1.14	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	----	----	----	11	4	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	----	----	----	<1	<1	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC212_17/07/17	QC213_17/07/17	QC214_17/07/17	GW10_17/07/17	GW14_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-006	EM1709415-007	EM1709415-008	EM1709415-009	EM1709415-010	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	----	----	----	<1	<1	
Ethylbenzene	100-41-4	1	µg/L	----	----	----	<1	<1	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	----	----	----	<1	<1	
Styrene	100-42-5	1	µg/L	----	----	----	<1	<1	
ortho-Xylene	95-47-6	1	µg/L	----	----	----	<1	<1	
Isopropylbenzene	98-82-8	1	µg/L	----	----	----	<1	<1	
n-Propylbenzene	103-65-1	1	µg/L	----	----	----	<1	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	----	----	----	<1	<1	
sec-Butylbenzene	135-98-8	1	µg/L	----	----	----	<1	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	----	----	----	<1	<1	
tert-Butylbenzene	98-06-6	1	µg/L	----	----	----	<1	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	----	----	----	<1	<1	
n-Butylbenzene	104-51-8	1	µg/L	----	----	----	<1	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	----	----	----	<10	<10	
Vinyl Acetate	108-05-4	10	µg/L	----	----	----	<10	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	----	----	----	<10	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	----	----	----	<10	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	----	----	----	<10	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	----	----	----	<1	<1	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	----	----	----	<1	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	----	----	----	<1	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	----	----	----	<2	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	----	----	----	<2	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	----	----	----	<1	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	----	----	----	<10	<10	
Chloromethane	74-87-3	10	µg/L	----	----	----	<10	<10	
Vinyl chloride	75-01-4	10	µg/L	----	----	----	<10.0	<10.0	
Bromomethane	74-83-9	10	µg/L	----	----	----	<10	<10	
Chloroethane	75-00-3	10	µg/L	----	----	----	<10	<10	
Trichlorofluoromethane	75-69-4	10	µg/L	----	----	----	<10	<10	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC212_17/07/17	QC213_17/07/17	QC214_17/07/17	GW10_17/07/17	GW14_17/07/17
Client sampling date / time					17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709415-006	EM1709415-007	EM1709415-008	EM1709415-009	EM1709415-010	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	----	----	----	<1	<1	
Iodomethane	74-88-4	1	µg/L	----	----	----	<1	<1	
Methylene chloride	75-09-2	4	µg/L	----	----	----	<4	<4	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	----	----	----	<1	<1	
1,1-Dichloroethane	75-34-3	1	µg/L	----	----	----	<1	<1	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	----	----	----	<1	<1	
1,1,1-Trichloroethane	71-55-6	1	µg/L	----	----	----	<1	<1	
1,1-Dichloropropylene	563-58-6	1	µg/L	----	----	----	<1	<1	
Carbon Tetrachloride	56-23-5	1	µg/L	----	----	----	<1	<1	
1,2-Dichloroethane	107-06-2	1	µg/L	----	----	----	<1	<1	
Trichloroethene	79-01-6	1	µg/L	----	----	----	<1	<1	
Dibromomethane	74-95-3	1	µg/L	----	----	----	<1	<1	
1,1,2-Trichloroethane	79-00-5	1	µg/L	----	----	----	<1	<1	
1,3-Dichloropropane	142-28-9	1	µg/L	----	----	----	<1	<1	
Tetrachloroethene	127-18-4	1	µg/L	----	----	----	<1	<1	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	----	----	----	<1	<1	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	----	----	----	<1	<1	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	----	----	----	<1	<1	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	----	----	----	<1	<1	
1,2,3-Trichloropropane	96-18-4	1	µg/L	----	----	----	<1	<1	
Pentachloroethane	76-01-7	1	µg/L	----	----	----	<1	<1	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	----	----	----	<1	<1	
Hexachlorobutadiene	87-68-3	1	µg/L	----	----	----	<1.0	<1.0	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	----	----	----	<1	<1	
Bromobenzene	108-86-1	1	µg/L	----	----	----	<1	<1	
2-Chlorotoluene	95-49-8	1	µg/L	----	----	----	<1	<1	
4-Chlorotoluene	106-43-4	1	µg/L	----	----	----	<1	<1	
1,3-Dichlorobenzene	541-73-1	1	µg/L	----	----	----	<1	<1	
1,4-Dichlorobenzene	106-46-7	1	µg/L	----	----	----	<1.0	<1.0	
1,2-Dichlorobenzene	95-50-1	1	µg/L	----	----	----	<1	<1	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	----	----	----	<1	<1	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	----	----	----	<1	<1	
<b>EP074G: Trihalomethanes</b>									



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC212_17/07/17	QC213_17/07/17	QC214_17/07/17	GW10_17/07/17	GW14_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-006	EM1709415-007	EM1709415-008	EM1709415-009	EM1709415-010	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	----	----	----	<1	2	
Bromodichloromethane	75-27-4	1	µg/L	----	----	----	<1	<1	
Dibromochloromethane	124-48-1	1	µg/L	----	----	----	<1	<1	
Bromoform	75-25-2	1	µg/L	----	----	----	<1	<1	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	----	----	----	<5	<5	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	----	----	----	<1.0	<1.0	
Acenaphthylene	208-96-8	1	µg/L	----	----	----	<1.0	<1.0	
Acenaphthene	83-32-9	1	µg/L	----	----	----	<1.0	<1.0	
Fluorene	86-73-7	1	µg/L	----	----	----	<1.0	<1.0	
Phenanthrene	85-01-8	1	µg/L	----	----	----	<1.0	<1.0	
Anthracene	120-12-7	1	µg/L	----	----	----	<1.0	<1.0	
Fluoranthene	206-44-0	1	µg/L	----	----	----	<1.0	<1.0	
Pyrene	129-00-0	1	µg/L	----	----	----	<1.0	<1.0	
Benzo(a)anthracene	56-55-3	1	µg/L	----	----	----	<1.0	<1.0	
Chrysene	218-01-9	1	µg/L	----	----	----	<1.0	<1.0	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	----	----	----	<1.0	<1.0	
Benzo(k)fluoranthene	207-08-9	1	µg/L	----	----	----	<1.0	<1.0	
Benzo(a)pyrene	50-32-8	0.5	µg/L	----	----	----	<0.5	<0.5	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	----	----	----	<1.0	<1.0	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	----	----	----	<1.0	<1.0	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	----	----	----	<1.0	<1.0	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	----	----	----	<0.5	<0.5	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	----	----	----	<0.5	<0.5	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	----	----	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	----	----	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	----	----	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	<50	<50	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC212_17/07/17	QC213_17/07/17	QC214_17/07/17	GW10_17/07/17	GW14_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-006	EM1709415-007	EM1709415-008	EM1709415-009	EM1709415-010	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	----	----	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	----	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	----	----	0.07	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	----	----	<0.02	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	----	----	0.04	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	----	----	<0.02	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	----	----	0.04	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	----	----	<0.02	----	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	----	----	<0.1	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	----	----	<0.02	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	----	----	<0.02	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	----	----	<0.02	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC212_17/07/17	QC213_17/07/17	QC214_17/07/17	GW10_17/07/17	GW14_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-006	EM1709415-007	EM1709415-008	EM1709415-009	EM1709415-010	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	----	----	<0.01	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	----	----	<0.02	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	----	----	<0.02	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	----	----	<0.02	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	----	----	<0.02	----	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	----	----	----	<0.02	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	----	----	<0.05	----	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	----	----	<0.02	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	----	----	<0.05	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	----	----	<0.05	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	----	----	----	<0.05	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	----	----	<0.05	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	----	----	<0.02	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	----	----	<0.02	----	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	----	----	<0.05	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	----	----	<0.05	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	----	----	<0.05	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC212_17/07/17	QC213_17/07/17	QC214_17/07/17	GW10_17/07/17	GW14_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-006	EM1709415-007	EM1709415-008	EM1709415-009	EM1709415-010	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	----	----	<0.05	----	
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	----	----	----	0.15	----	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	----	----	0.08	----	
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	----	----	0.15	----	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	----	----	----	99.7	95.9	
Toluene-D8	2037-26-5	1	%	----	----	----	105	103	
4-Bromofluorobenzene	460-00-4	1	%	----	----	----	99.5	100	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	----	----	----	28.3	33.2	
2-Chlorophenol-D4	93951-73-6	1	%	----	----	----	85.3	88.9	
2,4,6-Tribromophenol	118-79-6	1	%	----	----	----	75.5	75.8	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	----	----	----	79.4	86.6	
Anthracene-d10	1719-06-8	1	%	----	----	----	90.8	96.6	
4-Terphenyl-d14	1718-51-0	1	%	----	----	----	92.2	102	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	102	101	98.4	104	99.7	
Toluene-D8	2037-26-5	2	%	99.9	100	97.6	95.8	94.5	
4-Bromofluorobenzene	460-00-4	2	%	103	98.2	100	98.9	98.9	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	----	----	----	93.7	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Client sample ID			GW26_17/07/17	----	----	----	----
		Client sampling date / time			17-Jul-2017 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EM1709415-012	-----	-----	-----	-----	-----
				Result	----	----	----	----	----
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	6.63	----	----	----	----	----
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	1360	----	----	----	----	----
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	----	----	----	----	----
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	----	----	----	----	----
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	105	----	----	----	----	----
Total Alkalinity as CaCO3	----	1	mg/L	105	----	----	----	----	----
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	761	----	----	----	----	----
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	818	----	----	----	----	----
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	15	----	----	----	----	----
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	298	----	----	----	----	----
Magnesium	7439-95-4	1	mg/L	24	----	----	----	----	----
Sodium	7440-23-5	1	mg/L	26	----	----	----	----	----
Potassium	7440-09-7	1	mg/L	7	----	----	----	----	----
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.02	----	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	0.002	----	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	0.0007	----	----	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	----	----	----
Copper	7440-50-8	0.001	mg/L	0.001	----	----	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	----	----	----
Manganese	7439-96-5	0.001	mg/L	0.340	----	----	----	----	----
Nickel	7440-02-0	0.001	mg/L	0.048	----	----	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	----	----	----
Zinc	7440-66-6	0.005	mg/L	0.803	----	----	----	----	----
Iron	7439-89-6	0.05	mg/L	<0.05	----	----	----	----	----
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	16.5	----	----	----	----	----
Arsenic	7440-38-2	0.001	mg/L	0.265	----	----	----	----	----



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW26_17/07/17	----	----	----	----
Client sampling date / time				17-Jul-2017 00:00	----	----	----	----	
Compound	CAS Number	LOR	Unit	EM1709415-012	-----	-----	-----	-----	
				Result	----	----	----	----	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	0.0021	----	----	----	----	
Chromium	7440-47-3	0.001	mg/L	0.036	----	----	----	----	
Copper	7440-50-8	0.001	mg/L	0.017	----	----	----	----	
Nickel	7440-02-0	0.001	mg/L	0.078	----	----	----	----	
Lead	7439-92-1	0.001	mg/L	0.012	----	----	----	----	
Zinc	7440-66-6	0.005	mg/L	1.42	----	----	----	----	
Manganese	7439-96-5	0.001	mg/L	1.08	----	----	----	----	
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	----	----	
Iron	7439-89-6	0.05	mg/L	49.0	----	----	----	----	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	----	----	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.2	----	----	----	----	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	0.21	----	----	----	----	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	----	----	----	----	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	0.12	----	----	----	----	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	0.12	----	----	----	----	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.02	----	----	----	----	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	18.4	----	----	----	----	
Total Cations	----	0.01	meq/L	18.2	----	----	----	----	
Ionic Balance	----	0.01	%	0.57	----	----	----	----	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	16	----	----	----	----	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	----	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Client sample ID			GW26_17/07/17	----	----	----	----
Client sampling date / time		17-Jul-2017 00:00			----	----	----	----	
Compound	CAS Number	LOR	Unit	EM1709415-012	-----	-----	-----	-----	
				Result	----	----	----	----	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	----	----	----	----	
Ethylbenzene	100-41-4	1	µg/L	<1	----	----	----	----	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	----	----	----	----	
Styrene	100-42-5	1	µg/L	<1	----	----	----	----	
ortho-Xylene	95-47-6	1	µg/L	<1	----	----	----	----	
Isopropylbenzene	98-82-8	1	µg/L	<1	----	----	----	----	
n-Propylbenzene	103-65-1	1	µg/L	<1	----	----	----	----	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	----	----	----	----	
sec-Butylbenzene	135-98-8	1	µg/L	<1	----	----	----	----	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	----	----	----	----	
tert-Butylbenzene	98-06-6	1	µg/L	<1	----	----	----	----	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	----	----	----	----	
n-Butylbenzene	104-51-8	1	µg/L	<1	----	----	----	----	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	----	----	----	----	
Vinyl Acetate	108-05-4	10	µg/L	<10	----	----	----	----	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	----	----	----	----	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	----	----	----	----	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	----	----	----	----	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	----	----	----	----	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	----	----	----	----	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	----	----	----	----	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	----	----	----	----	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	----	----	----	----	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	----	----	----	----	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	----	----	----	----	
Chloromethane	74-87-3	10	µg/L	<10	----	----	----	----	
Vinyl chloride	75-01-4	10	µg/L	<10.0	----	----	----	----	
Bromomethane	74-83-9	10	µg/L	<10	----	----	----	----	
Chloroethane	75-00-3	10	µg/L	<10	----	----	----	----	
Trichlorofluoromethane	75-69-4	10	µg/L	<10	----	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW26_17/07/17	----	----	----	----
Client sampling date / time				17-Jul-2017 00:00	----	----	----	----	
Compound	CAS Number	LOR	Unit	EM1709415-012	-----	-----	-----	-----	
				Result	----	----	----	----	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	----	----	----	----	
Iodomethane	74-88-4	1	µg/L	<1	----	----	----	----	
Methylene chloride	75-09-2	4	µg/L	<4	----	----	----	----	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	----	----	----	----	
1,1-Dichloroethane	75-34-3	1	µg/L	<1	----	----	----	----	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	----	----	----	----	
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	----	----	----	----	
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	----	----	----	----	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	----	----	----	----	
1,2-Dichloroethane	107-06-2	1	µg/L	<1	----	----	----	----	
Trichloroethene	79-01-6	1	µg/L	<1	----	----	----	----	
Dibromomethane	74-95-3	1	µg/L	<1	----	----	----	----	
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	----	----	----	----	
1,3-Dichloropropane	142-28-9	1	µg/L	<1	----	----	----	----	
Tetrachloroethene	127-18-4	1	µg/L	<1	----	----	----	----	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	----	----	----	----	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	----	----	----	----	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	----	----	----	----	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	----	----	----	----	
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	----	----	----	----	
Pentachloroethane	76-01-7	1	µg/L	<1	----	----	----	----	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	----	----	----	----	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	----	----	----	----	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	----	----	----	----	
Bromobenzene	108-86-1	1	µg/L	<1	----	----	----	----	
2-Chlorotoluene	95-49-8	1	µg/L	<1	----	----	----	----	
4-Chlorotoluene	106-43-4	1	µg/L	<1	----	----	----	----	
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	----	----	----	----	
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	----	----	----	----	
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	----	----	----	----	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	----	----	----	----	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	----	----	----	----	
<b>EP074G: Trihalomethanes</b>									





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)		Client sample ID			GW26_17/07/17	----	----	----	----
Client sampling date / time		17-Jul-2017 00:00			----	----	----	----	
Compound	CAS Number	LOR	Unit	EM1709415-012	-----	-----	-----	-----	
				Result	----	----	----	----	
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	<1	----	----	----	----	
Bromodichloromethane	75-27-4	1	µg/L	<1	----	----	----	----	
Dibromochloromethane	124-48-1	1	µg/L	<1	----	----	----	----	
Bromoform	75-25-2	1	µg/L	<1	----	----	----	----	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	----	----	----	----	
Acenaphthylene	208-96-8	1	µg/L	<1.0	----	----	----	----	
Acenaphthene	83-32-9	1	µg/L	<1.0	----	----	----	----	
Fluorene	86-73-7	1	µg/L	<1.0	----	----	----	----	
Phenanthrene	85-01-8	1	µg/L	<1.0	----	----	----	----	
Anthracene	120-12-7	1	µg/L	<1.0	----	----	----	----	
Fluoranthene	206-44-0	1	µg/L	<1.0	----	----	----	----	
Pyrene	129-00-0	1	µg/L	<1.0	----	----	----	----	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	----	----	----	----	
Chrysene	218-01-9	1	µg/L	<1.0	----	----	----	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	----	----	----	----	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	----	----	----	----	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	----	----	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	----	----	----	----	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	----	----	----	----	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	----	----	----	----	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	----	----	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	----	----	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	----	----	----	----	
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----	
C15 - C28 Fraction	----	100	µg/L	<100	----	----	----	----	
C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	----	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW26_17/07/17	----	----	----	----
Client sampling date / time				17-Jul-2017 00:00	----	----	----	----	
Compound	CAS Number	LOR	Unit	EM1709415-012	-----	-----	-----	-----	
				Result	----	----	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	----	----	----	----	
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	----	----	
>C16 - C34 Fraction	----	100	µg/L	<100	----	----	----	----	
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	----	----	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	----	----	----	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	----	----	----	----	
Toluene	108-88-3	2	µg/L	<2	----	----	----	----	
Ethylbenzene	100-41-4	2	µg/L	<2	----	----	----	----	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	----	----	----	----	
ortho-Xylene	95-47-6	2	µg/L	<2	----	----	----	----	
^ Total Xylenes	1330-20-7	2	µg/L	<2	----	----	----	----	
^ Sum of BTEX	----	1	µg/L	<1	----	----	----	----	
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	93.8	----	----	----	----	
Toluene-D8	2037-26-5	1	%	98.5	----	----	----	----	
4-Bromofluorobenzene	460-00-4	1	%	93.6	----	----	----	----	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	29.1	----	----	----	----	
2-Chlorophenol-D4	93951-73-6	1	%	80.7	----	----	----	----	
2,4,6-Tribromophenol	118-79-6	1	%	57.6	----	----	----	----	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	79.1	----	----	----	----	
Anthracene-d10	1719-06-8	1	%	90.9	----	----	----	----	
4-Terphenyl-d14	1718-51-0	1	%	93.2	----	----	----	----	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	97.5	----	----	----	----	
Toluene-D8	2037-26-5	2	%	89.8	----	----	----	----	
4-Bromofluorobenzene	460-00-4	2	%	92.4	----	----	----	----	



## Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	72	120
Toluene-D8	2037-26-5	70	130
4-Bromofluorobenzene	460-00-4	70	128
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	10	46
2-Chlorophenol-D4	93951-73-6	23	104
2,4,6-Tribromophenol	118-79-6	28	130
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129
<b>EP231S: PFAS Surrogate</b>			
13C4-PFOS	----	60	130

## QUALITY CONTROL REPORT

<b>Work Order</b>	<b>: EM1709415</b>	<b>Page</b>	: 1 of 23
<b>Client</b>	<b>: AECOM Australia Pty Ltd</b>	<b>Laboratory</b>	: Environmental Division Melbourne
<b>Contact</b>	<b>: MS AVERYLL COYNE</b>	<b>Contact</b>	: Carol Walsh
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<b>Project</b>	<b>: 60537182</b>	<b>Date Samples Received</b>	: 18-Jul-2017
<b>Order number</b>	<b>: Task 3.2</b>	<b>Date Analysis Commenced</b>	: 19-Jul-2017
<b>C-O-C number</b>	<b>: ----</b>	<b>Issue Date</b>	: 25-Jul-2017
<b>Sampler</b>	<b>: BH, BP, JM</b>		
<b>Site</b>	<b>: ----</b>		
<b>Quote number</b>	<b>: ME/199/16</b>		
<b>No. of samples received</b>	<b>: 13</b>		
<b>No. of samples analysed</b>	<b>: 11</b>		



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC



## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :  
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot  
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
 LOR = Limit of reporting  
 RPD = Relative Percentage Difference  
 # = Indicates failed QC

## Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA005P: pH by PC Titrator (QC Lot: 1004132)</b>									
EM1709373-011	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.62	7.59	0.394	0% - 20%
EM1709395-003	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	8.55	8.64	1.05	0% - 20%
<b>EA005P: pH by PC Titrator (QC Lot: 1004137)</b>									
EM1709425-010	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	8.50	8.53	0.352	0% - 20%
EM1709415-010	GW14_17/07/17	EA005-P: pH Value	----	0.01	pH Unit	6.46	6.41	0.777	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 1004180)</b>									
EM1709376-011	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	913	851	7.03	0% - 20%
EM1709415-012	GW26_17/07/17	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	1360	1400	2.74	0% - 20%
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 1004133)</b>									
EM1709376-004	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	12	8	42.9	0% - 50%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	12	8	42.9	0% - 50%
EM1709395-003	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	78	# 104	29.4	0% - 20%
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	316	294	7.22	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	393	398	1.20	0% - 20%
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 1004136)</b>									
EM1709425-010	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	39	42	8.58	0% - 20%
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	589	584	0.854	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	628	626	0.242	0% - 20%
EM1709415-010	GW14_17/07/17	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 1004136) - continued</b>									
EM1709415-010	GW14_17/07/17	ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	59	55	6.94	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	59	55	6.94	0% - 20%
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 1004445)</b>									
EM1709415-010	GW14_17/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	8	8	0.00	No Limit
EM1709401-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	<1	0.00	No Limit
<b>ED043: Total Oxidised Sulfur as SO4 2- (QC Lot: 1012553)</b>									
EM1709415-001	GW51_17/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	442	476	7.61	0% - 20%
EM1709636-002	Anonymous	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	332	307	7.76	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 1004444)</b>									
EM1709415-009	GW10_17/07/17	ED045G: Chloride	16887-00-6	1	mg/L	24	25	5.16	0% - 20%
EM1709401-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	172	171	0.882	0% - 20%
<b>ED093F: Dissolved Major Cations (QC Lot: 1004425)</b>									
EM1709415-001	GW51_17/07/17	ED093F: Calcium	7440-70-2	1	mg/L	78	78	0.00	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	62	62	0.00	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	692	693	0.247	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	25	25	0.00	0% - 20%
EM1709427-002	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	3	3	0.00	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	<1	<1	0.00	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	2	2	0.00	No Limit
		ED093F: Potassium	7440-09-7	1	mg/L	1	1	0.00	No Limit
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 1004424)</b>									
EM1709401-003	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.062	0.061	0.00	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.010	0.010	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.26	0.25	4.45	0% - 20%
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.21	0.20	0.00	No Limit
		EM1709415-012	GW26_17/07/17	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0007	0.0007
EG020A-F: Arsenic	7440-38-2			0.001	mg/L	0.002	0.002	0.00	No Limit
EG020A-F: Chromium	7440-47-3			0.001	mg/L	<0.001	<0.001	0.00	No Limit
EG020A-F: Copper	7440-50-8			0.001	mg/L	0.001	0.001	0.00	No Limit
EG020A-F: Lead	7439-92-1			0.001	mg/L	<0.001	<0.001	0.00	No Limit
EG020A-F: Manganese	7439-96-5			0.001	mg/L	0.340	0.335	1.44	0% - 20%
EG020A-F: Nickel	7440-02-0			0.001	mg/L	0.048	0.049	2.82	0% - 20%



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 1004424) - continued</b>										
EM1709415-012	GW26_17/07/17	EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.803	0.810	0.835	0% - 20%	
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.02	0.02	0.00	No Limit	
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit	
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit	
<b>EG020T: Total Metals by ICP-MS (QC Lot: 1004427)</b>										
EM1709376-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0010	0.0006	52.1	No Limit	
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.006	0.006	0.00	No Limit	
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.004	0.004	0.00	No Limit	
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.038	0.040	2.96	0% - 20%	
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.008	0.008	0.00	No Limit	
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.082	0.085	4.18	0% - 20%	
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.106	0.109	3.19	0% - 20%	
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.074	0.072	3.23	0% - 50%	
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	15.3	16.0	4.71	0% - 20%	
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	0.02	0.02	0.00	No Limit	
EM1709376-011	Anonymous	EG020A-T: Iron	7439-89-6	0.05	mg/L	1.47	1.51	2.72	0% - 20%	
		EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0002	0.0002	0.00	No Limit	
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.00	No Limit	
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.007	0.007	0.00	No Limit	
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.003	0.003	0.00	No Limit	
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.018	0.018	0.00	0% - 50%	
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.019	0.015	21.3	0% - 50%	
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.050	0.048	2.53	0% - 20%	
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.053	0.053	0.00	0% - 50%	
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	4.74	4.43	6.82	0% - 20%	
<b>EG020T: Total Metals by ICP-MS (QC Lot: 1004428)</b>	EM1709415-010	GW14_17/07/17	EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
			EG020A-T: Iron	7439-89-6	0.05	mg/L	9.94	10.1	1.33	0% - 20%
			EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
			EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.015	0.015	0.00	0% - 50%
			EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.022	0.020	9.24	0% - 20%
			EG020A-T: Copper	7440-50-8	0.001	mg/L	0.013	0.014	0.00	0% - 50%
			EG020A-T: Lead	7439-92-1	0.001	mg/L	0.013	0.013	0.00	0% - 50%
			EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.014	0.013	0.00	0% - 50%
			EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.015	0.016	0.00	0% - 50%
			EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.066	0.067	0.00	0% - 50%
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 1004423)</b>	EM1709415-010	GW14_17/07/17	EG020A-T: Aluminium	7429-90-5	0.01	mg/L	17.7	15.8	11.2	0% - 20%
			EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
			EG020A-T: Iron	7439-89-6	0.05	mg/L	7.66	7.06	8.19	0% - 20%



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 1004423) - continued</b>										
EM1709401-003	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit	
EM1709415-012	GW26_17/07/17	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit	
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1007149)</b>										
EM1709371-010	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit	
EM1709376-012	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit	
<b>EK040P: Fluoride by PC Titrator (QC Lot: 1004135)</b>										
EM1709415-010	GW14_17/07/17	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.6	0.6	0.00	No Limit	
<b>EK055G: Ammonia as N by Discrete Analyser (QC Lot: 1004371)</b>										
EM1709415-001	GW51_17/07/17	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.33	0.35	4.01	0% - 20%	
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 1004447)</b>										
EM1709415-010	GW14_17/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit	
EM1709401-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 1004370)</b>										
EM1709414-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit	
EM1709425-002	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	3.41	3.44	0.777	0% - 20%	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 1004446)</b>										
EM1709415-010	GW14_17/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.19	0.19	0.00	0% - 50%	
EM1709401-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	7.49	7.67	2.39	0% - 20%	
<b>EP005: Total Organic Carbon (TOC) (QC Lot: 1009832)</b>										
EM1709395-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	18	19	0.00	0% - 50%	
EM1709415-009	GW10_17/07/17	EP005: Total Organic Carbon	----	1	mg/L	11	11	0.00	0% - 50%	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 1003964)</b>										
EM1709371-001	Anonymous	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit			
EM1709415-001	GW51_17/07/17	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 1003964) - continued</b>									
EM1709415-001	GW51_17/07/17	EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit		
<b>EP074B: Oxygenated Compounds (QC Lot: 1003964)</b>									
EM1709371-001	Anonymous	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit
EM1709415-001	GW51_17/07/17	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 1003964)</b>									
EM1709371-001	Anonymous	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
EM1709415-001	GW51_17/07/17	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
<b>EP074D: Fumigants (QC Lot: 1003964)</b>									
EM1709371-001	Anonymous	EP074-WF: 2.2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1.3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
EM1709415-001	GW51_17/07/17	EP074-WF: 2.2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1.3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 1003964)</b>									



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 1003964) - continued</b>									
EM1709371-001	Anonymous	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.2-Dichloroethene	156-59-2	1	µg/L	2	2	0.00	No Limit
		EP074-WF: 1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit		
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit		
EM1709415-001	GW51_17/07/17	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.2-Dichloroethene	156-59-2	1	µg/L	8	8	0.00	No Limit
		EP074-WF: 1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 1003964) - continued</b>									
EM1709415-001	GW51_17/07/17	EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit		
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 1003964)</b>									
EM1709371-001	Anonymous	EP074-WF: 1.4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
		EM1709415-001	GW51_17/07/17	EP074-WF: 1.4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0
EP074-WF: Chlorobenzene	108-90-7			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: Bromobenzene	108-86-1			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 2-Chlorotoluene	95-49-8			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 4-Chlorotoluene	106-43-4			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 1.3-Dichlorobenzene	541-73-1			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 1.2-Dichlorobenzene	95-50-1			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 1.2.4-Trichlorobenzene	120-82-1			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 1.2.3-Trichlorobenzene	87-61-6			1	µg/L	<1	<1	0.00	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 1003964)</b>									
EM1709371-001	Anonymous	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074G: Trihalomethanes (QC Lot: 1003964) - continued</b>									
EM1709371-001	Anonymous	EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
EM1709415-001	GW51_17/07/17	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
<b>EP074H: Naphthalene (QC Lot: 1003964)</b>									
EM1709371-001	Anonymous	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EM1709415-001	GW51_17/07/17	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1004334)</b>									
EM1709390-001	Anonymous	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	205-82-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	207-08-9	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	193-39-5	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	53-70-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1003965)</b>									
EM1709371-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1709415-001	GW51_17/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1003967)</b>									
EM1709415-005	QC211_17/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1709425-007	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1004335)</b>									
EM1709390-001	Anonymous	EP071: C15 - C28 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	µg/L	<50	<50	0.00	No Limit
		EP071: C29 - C36 Fraction	----	50	µg/L	<50	<50	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1003965)</b>									
EM1709371-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1003965) - continued</b>									
EM1709415-001	GW51_17/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1003967)</b>									
EM1709415-005	QC211_17/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM1709425-007	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1004335)</b>									
EM1709390-001	Anonymous	EP071: >C10 - C16 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: >C16 - C34 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
<b>EP080: BTEXN (QC Lot: 1003965)</b>									
EM1709371-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EM1709415-001	GW51_17/07/17	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP080: BTEXN (QC Lot: 1003967)</b>									
EM1709415-005	QC211_17/07/17	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EM1709425-007	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 1009431)</b>									



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 1009431) - continued</b>									
EB1714774-002	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EM1709459-014	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 1009431)</b>									
EB1714774-002	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EM1709459-014	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3			0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4			0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9			0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluorononanoic acid (PFNA)	375-95-1			0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2			0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8			0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1			0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8			0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7			0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4			0.1	µg/L	<0.1	<0.1	0.00	No Limit
<b>EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 1009431)</b>									
EB1714774-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 1009431) - continued</b>									
EB1714774-002	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EM1709459-014	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 1009431)</b>									
EB1714774-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EM1709459-014	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231P: PFAS Sums (QC Lot: 1009431)</b>									



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 Project : 60537182



Sub-Matrix: **WATER**

				<i>Laboratory Duplicate (DUP) Report</i>					
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>LOR</i>	<i>Unit</i>	<i>Original Result</i>	<i>Duplicate Result</i>	<i>RPD (%)</i>	<i>Recovery Limits (%)</i>
<b>EP231P: PFAS Sums (QC Lot: 1009431) - continued</b>									
EB1714774-002	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
EM1709459-014	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit



## Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 1004180)</b>									
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10 <10	2000 mg/L 293 mg/L	99.0 102	95 95	105 105	
<b>ED037P: Alkalinity by PC Titrator (QCLot: 1004133)</b>									
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	104	88	109	
<b>ED037P: Alkalinity by PC Titrator (QCLot: 1004136)</b>									
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	105	88	109	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 1004445)</b>									
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1 <1	25 mg/L 100 mg/L	106 102	92 92	115 115	
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 1012553)</b>									
ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	<10	500 mg/L	102	82	122	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 1004444)</b>									
ED045G: Chloride	16887-00-6	1	mg/L	<1 <1	10 mg/L 1000 mg/L	107 103	88 88	118 118	
<b>ED093F: Dissolved Major Cations (QCLot: 1004425)</b>									
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	103	93	110	
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	107	91	110	
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	104	90	109	
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	107	89	109	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 1004424)</b>									
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	102	93	105	
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	96.2	91	107	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	99.2	84	104	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	91.5	83	103	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	90.7	82	103	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	90.8	83	105	
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	92.7	83	105	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.7	82	106	
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	95.6	82	109	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	92.6	85	109	
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	98.6	94	106	
<b>EG020T: Total Metals by ICP-MS (QCLot: 1004427)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	105	80	120	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EG020T: Total Metals by ICP-MS (QCLot: 1004427) - continued</b>									
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	96.7	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	101	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	95.2	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	91.2	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	92.0	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	95.9	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.8	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	89.4	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	94.1	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	94.9	80	120	
<b>EG020T: Total Metals by ICP-MS (QCLot: 1004428)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	103	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	98.8	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	100	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	94.2	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	91.5	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	93.6	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	96.2	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	93.2	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	90.1	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	93.8	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	96.2	80	120	
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 1004423)</b>									
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	86.4	81	114	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1007149)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	86.0	81	114	
<b>EK040P: Fluoride by PC Titrator (QCLot: 1004135)</b>									
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	102	85	112	
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 1004371)</b>									
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	105	80	115	
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 1004447)</b>									
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	102	94	107	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 1004370)</b>									
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	104	89	114	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 1004446)</b>									
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	102	94	108	
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1009832)</b>									



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1009832) - continued</b>									
EP005: Total Organic Carbon	----	1	mg/L	<1	100 mg/L	94.1	81	109	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1003964)</b>									
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	100	81	119	
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	104	84	117	
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	95.9	83	114	
EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	40 µg/L	93.6	81	116	
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	96.8	82	118	
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	97.6	85	115	
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	93.6	81	113	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	91.5	76	111	
EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	91.9	79	109	
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	88.8	77	111	
EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	93.2	79	108	
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	90.9	80	110	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	86.6	75	111	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	83.0	68	111	
<b>EP074B: Oxygenated Compounds (QCLot: 1003964)</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	96.6	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	107	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	102	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	105	73	128	
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	112	75	129	
<b>EP074C: Sulfonated Compounds (QCLot: 1003964)</b>									
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	95.3	64	119	
<b>EP074D: Fumigants (QCLot: 1003964)</b>									
EP074-WF: 2.2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	96.3	74	117	
EP074-WF: 1.2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	102	83	118	
EP074-WF: cis-1.3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	98.2	74	109	
EP074-WF: trans-1.3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	98.4	70	109	
EP074-WF: 1.2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	105	81	116	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1003964)</b>									
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	91.6	61	137	
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	98.5	66	137	
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	92.9	67	135	
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	87.3	52	128	
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	91.5	76	125	
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	97.7	74	123	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike	Spike Recovery (%)	Recovery Limits (%)	
					Concentration	LCS	Low	High
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1003964) - continued</b>								
EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	98.4	75	120
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	63.9	37	120
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	20 µg/L	112	72	159
EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	98.0	78	117
EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	102	81	118
EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	100	83	118
EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	97.0	76	115
EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	96.7	75	117
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	92.7	72	111
EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	105	81	120
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	87.8	78	116
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	105	79	116
EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	107	85	119
EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	109	85	119
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	94.6	76	120
EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	97.4	78	110
EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	107	64	118
EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	98.4	51	113
EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	106	85	121
EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	106	84	118
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	95.1	64	109
EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	99.8	65	115
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	76.4	70	121
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 1003964)</b>								
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	99.0	85	115
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	88.4	82	116
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	94.5	81	112
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	93.5	80	110
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	95.5	80	110
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	95.3	80	112
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	96.6	84	111
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	91.6	70	114
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	95.6	78	116
<b>EP074G: Trihalomethanes (QCLot: 1003964)</b>								
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	101	82	118
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	96.2	75	112
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	96.1	73	108
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	92.4	68	107





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
<b>EP074H: Naphthalene (QCLot: 1003964)</b>								
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	102	80	116
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1004334)</b>								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	67.0	39	110
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	68.9	40	124
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	72.1	47	117
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	74.6	51	118
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	75.6	53	119
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	51.8	51	113
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	74.4	59	123
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	73.3	58	123
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	65.7	52	126
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	69.1	55	123
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	70.8	52	131
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	75.3	57	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	69.2	56	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	71.0	53	123
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	70.8	53	125
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	71.8	53	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1003965)</b>								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	93.3	67	127
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1003967)</b>								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	103	67	127
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1004335)</b>								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	75.2	53	123
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	75.4	57	133
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	67.4	55	141
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1003965)</b>								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	92.8	65	125
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1003967)</b>								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	101	65	125
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1004335)</b>								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	73.1	54	122
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	70.8	56	132
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	73.6	51	137
<b>EP080: BTEXN (QCLot: 1003965)</b>								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	105	76	120
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	96.5	76	124



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP080: BTEXN (QCLot: 1003965) - continued</b>									
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	97.9	72	124	
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	97.4	72	130	
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	99.5	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	104	71	129	
<b>EP080: BTEXN (QCLot: 1003967)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	103	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	106	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	101	72	124	
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	104	72	130	
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	105	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	100	71	129	
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 1009431)</b>									
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.5 µg/L	101	70	130	
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.5 µg/L	100	70	130	
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.5 µg/L	95.0	70	130	
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.5 µg/L	99.4	70	130	
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.5 µg/L	97.4	70	130	
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	105	70	130	
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 1009431)</b>									
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	2.5 µg/L	95.8	70	130	
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	78.6	70	130	
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	91.8	70	130	
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	106	70	130	
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	99.2	70	130	
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	98.2	70	130	
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	101	70	130	
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	110	70	130	
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	110	70	130	
EP231X: Perfluorotridecanoic acid (PFTriDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	117	70	130	
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	120	70	150	
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 1009431)</b>									
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	93.4	70	130	
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	112	70	150	
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	119	70	150	
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	1.25 µg/L	109	70	150	



Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 1009431) - continued</b>									
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	110	70	150	
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	98.0	70	130	
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	105	70	130	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 1009431)</b>									
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.5 µg/L	101	70	130	
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.5 µg/L	103	70	130	
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.5 µg/L	98.0	70	130	
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.5 µg/L	108	70	130	

### Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **WATER**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike	Spike Recovery(%)	Recovery Limits (%)	
				Concentration	MS	Low	High
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 1004445)</b>							
EM1709401-003	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	91.0	70	130
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 1012553)</b>							
EM1709415-002	GW53_17/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	500 mg/L	94.6	70	130
<b>ED045G: Chloride by Discrete Analyser (QCLot: 1004444)</b>							
EM1709401-003	Anonymous	ED045G: Chloride	16887-00-6	400 mg/L	88.1	70	130
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 1004424)</b>							
EM1709401-003	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	94.5	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	98.4	81	133
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	90.9	71	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	90.8	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	90.4	75	133
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	89.9	64	134
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	93.7	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	93.5	75	131
<b>EG020T: Total Metals by ICP-MS (QCLot: 1004427)</b>							
EM1709376-001	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	97.9	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	99.2	75	129



Sub-Matrix: WATER

				Matrix Spike (MS) Report			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike	SpikeRecovery(%)	Recovery Limits (%)	
				Concentration	MS	Low	High
<b>EG020T: Total Metals by ICP-MS (QCLot: 1004427) - continued</b>							
EM1709376-001	Anonymous	EG020A-T: Chromium	7440-47-3	1 mg/L	91.6	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	90.6	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	93.9	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	89.5	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	91.3	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	91.2	74	116
<b>EG020T: Total Metals by ICP-MS (QCLot: 1004428)</b>							
EM1709415-010	GW14_17/07/17	EG020A-T: Arsenic	7440-38-2	1 mg/L	93.8	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	101	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	93.8	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	92.5	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	99.0	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	92.2	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	93.1	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	95.1	74	116
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 1004423)</b>							
EM1709405-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	89.8	70	120
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1007149)</b>							
EM1709371-017	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	87.2	70	130
<b>EK040P: Fluoride by PC Titrator (QCLot: 1004135)</b>							
EM1709415-003	GW62_17/07/17	EK040P: Fluoride	16984-48-8	5 mg/L	94.8	70	130
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 1004371)</b>							
EM1709415-002	GW53_17/07/17	EK055G: Ammonia as N	7664-41-7	1 mg/L	107	70	130
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 1004447)</b>							
EM1709401-003	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	89.5	80	114
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 1004370)</b>							
EM1709415-001	GW51_17/07/17	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	101	70	130
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 1004446)</b>							
EM1709401-003	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	# Not Determined	79	123
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1009832)</b>							
EM1709395-003	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	85.9	80	114
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1003964)</b>							
EM1709371-002	Anonymous	EP074-WF: Benzene	71-43-2	20 µg/L	113	76	128
		EP074-WF: Toluene	108-88-3	20 µg/L	95.4	72	132



Sub-Matrix: WATER

				Matrix Spike (MS) Report			
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Spike	SpikeRecovery(%)	Recovery Limits (%)	
				Concentration	MS	Low	High
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1003964)</b>							
EM1709371-002	Anonymous	EP074-WF: 1,1-Dichloroethene	75-35-4	20 µg/L	102	63	129
		EP074-WF: Trichloroethene	79-01-6	20 µg/L	84.2	64	126
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 1003964)</b>							
EM1709371-002	Anonymous	EP074-WF: Chlorobenzene	108-90-7	20 µg/L	95.2	81	119
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1004334)</b>							
EM1709390-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	5 µg/L	84.9	42	122
		EP075(SIM): Pyrene	129-00-0	5 µg/L	88.9	40	136
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1003965)</b>							
EM1709371-002	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	75.4	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1003967)</b>							
EM1709415-006	QC212_17/07/17	EP080: C6 - C9 Fraction	----	280 µg/L	86.5	43	125
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1003965)</b>							
EM1709371-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	74.0	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1003967)</b>							
EM1709415-006	QC212_17/07/17	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	84.4	44	122
<b>EP080: BTEXN (QCLot: 1003965)</b>							
EM1709371-002	Anonymous	EP080: Benzene	71-43-2	20 µg/L	111	68	130
		EP080: Toluene	108-88-3	20 µg/L	89.1	72	132
<b>EP080: BTEXN (QCLot: 1003967)</b>							
EM1709415-006	QC212_17/07/17	EP080: Benzene	71-43-2	20 µg/L	97.2	68	130
		EP080: Toluene	108-88-3	20 µg/L	100	72	132
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 1009431)</b>							
EB1714774-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.5 µg/L	108	50	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.5 µg/L	105	50	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.5 µg/L	106	50	130
		EP231X: Perfluoroheptane sulfonic acid (PFHps)	375-92-8	0.5 µg/L	111	50	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	114	50	130
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.5 µg/L	118	50	130
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 1009431)</b>							
EB1714774-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	107	50	130
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	74.6	50	130
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	104	50	130
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	112	50	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	108	50	130
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	115	50	130





Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 1009431) - continued</b>							
EB1714774-002	Anonymous	EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	107	50	130
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	119	50	130
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	112	50	130
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	116	50	130
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	128	50	150
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 1009431)</b>							
EB1714774-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	102	50	130
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	122	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	128	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	1.25 µg/L	122	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	116	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	123	50	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	120	50	130
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 1009431)</b>							
EB1714774-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.5 µg/L	110	50	130
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.5 µg/L	117	50	130
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.5 µg/L	115	50	130
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.5 µg/L	119	50	130

## QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM1709415	Page	: 1 of 14
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: MS AVERYLL COYNE	Telephone	: +61-3-8549 9608
Project	: 60537182	Date Samples Received	: 18-Jul-2017
Site	: ----	Issue Date	: 25-Jul-2017
Sampler	: BH, BP, JM	No. of samples received	: 13
Order number	: Task 3.2	No. of samples analysed	: 11

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

### Summary of Outliers

#### Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Laboratory Control outliers occur.
- Duplicate outliers exist - please see following pages for full details.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

#### Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

#### Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



### Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
<b>Duplicate (DUP) RPDs</b>							
ED037P: Alkalinity by PC Titrator	EM1709395--003	Anonymous	Carbonate Alkalinity as CaCO3	3812-32-6	29.4 %	0% - 20%	RPD exceeds LOR based limits
<b>Matrix Spike (MS) Recoveries</b>							
EK071G: Reactive Phosphorus as P by discrete analysis	EM1709401--003	Anonymous	Reactive Phosphorus as P	14265-44-2	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.

### Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EA005P: pH by PC Titrator</b>						
<b>Clear Plastic Bottle - Natural</b>						
GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,			19-Jul-2017	17-Jul-2017	2

### Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
<b>Laboratory Duplicates (DUP)</b>					
PAH/Phenols (GC/MS - SIM)	1	12	8.33	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	1	15	6.67	10.00	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>					
TRH - Semivolatile Fraction	0	15	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

### Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for **VOC in soils** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>Container / Client Sample ID(s)</b>							



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EA005P: pH by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural (EA005-P)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	17-Jul-2017	✘
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>								
<b>Clear Plastic Bottle - Natural (EA015H)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	24-Jul-2017	✓
<b>ED037P: Alkalinity by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural (ED037-P)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	31-Jul-2017	✓
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>								
<b>Clear Plastic Bottle - Natural (ED041G)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	14-Aug-2017	✓
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>								
<b>Clear Plastic Bottle - Natural (ED043)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	24-Jul-2017	14-Aug-2017	✓	24-Jul-2017	14-Aug-2017	✓
<b>ED045G: Chloride by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Natural (ED045G)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	14-Aug-2017	✓
<b>ED093F: Dissolved Major Cations</b>								
<b>Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	20-Jul-2017	14-Aug-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EG020F: Dissolved Metals by ICP-MS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	13-Jan-2018	✓
<b>EG020T: Total Metals by ICP-MS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T)</b> GW51_17/07/17, GW62_17/07/17, QC211_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, QC212_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	13-Jan-2018	✓	19-Jul-2017	13-Jan-2018	✓
<b>EG035F: Dissolved Mercury by FIMS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Filtered (EG035F)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	14-Aug-2017	✓
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
<b>Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T)</b> GW51_17/07/17, GW62_17/07/17, QC211_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, QC212_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	20-Jul-2017	14-Aug-2017	✓
<b>EK040P: Fluoride by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural (EK040P)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	14-Aug-2017	✓
<b>EK055G: Ammonia as N by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Sulfuric Acid (EK055G)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	14-Aug-2017	✓





Matrix: WATER

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EK057G: Nitrite as N by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Natural (EK057G)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	19-Jul-2017	✓
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Sulfuric Acid (EK059G)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	14-Aug-2017	✓
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>								
<b>Clear Plastic Bottle - Natural (EK071G)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	19-Jul-2017	✓
<b>EP005: Total Organic Carbon (TOC)</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP005)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	21-Jul-2017	14-Aug-2017	✓
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
<b>EP074B: Oxygenated Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
<b>EP074C: Sulfonated Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP074D: Fumigants</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
<b>EP074E: Halogenated Aliphatic Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
<b>EP074F: Halogenated Aromatic Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
<b>EP074G: Trihalomethanes</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
<b>EP074H: Naphthalene</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
<b>Amber Glass Bottle - Unpreserved (EP075(SIM))</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	20-Jul-2017	24-Jul-2017	✓	20-Jul-2017	29-Aug-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080/071: Total Petroleum Hydrocarbons</b>								
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW51_17/07/17, GW62_17/07/17, QC211_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, QC212_17/07/17, GW14_17/07/17,	17-Jul-2017	20-Jul-2017	24-Jul-2017	✓	20-Jul-2017	29-Aug-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW51_17/07/17, GW62_17/07/17, QC211_17/07/17, QC213_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, QC212_17/07/17, QC214_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>								
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW51_17/07/17, GW62_17/07/17, QC211_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, QC212_17/07/17, GW14_17/07/17,	17-Jul-2017	20-Jul-2017	24-Jul-2017	✓	20-Jul-2017	29-Aug-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW51_17/07/17, GW62_17/07/17, QC211_17/07/17, QC213_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, QC212_17/07/17, QC214_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
<b>EP080: BTEXN</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW51_17/07/17, GW62_17/07/17, QC211_17/07/17, QC213_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, QC212_17/07/17, QC214_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW51_17/07/17,	GW10_17/07/17	17-Jul-2017	----	----	----	23-Jul-2017	13-Jan-2018	✓
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW51_17/07/17,	GW10_17/07/17	17-Jul-2017	----	----	----	23-Jul-2017	13-Jan-2018	✓



Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW51_17/07/17,	GW10_17/07/17	17-Jul-2017	----	----	----	23-Jul-2017	13-Jan-2018	✓
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW51_17/07/17,	GW10_17/07/17	17-Jul-2017	----	----	----	23-Jul-2017	13-Jan-2018	✓
<b>EP231P: PFAS Sums</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW51_17/07/17,	GW10_17/07/17	17-Jul-2017	----	----	----	23-Jul-2017	13-Jan-2018	✓



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER** Evaluation: ✘ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Laboratory Duplicates (DUP)</b>							
Alkalinity by PC Titrator	ED037-P	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	7	14.29	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	11	18.18	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	10	20.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	10	20.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	7	14.29	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	8	25.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	12	8.33	10.00	✘	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	17	11.76	10.00	✔	NEPM 2013 B3 & ALS QC Standard
pH by PC Titrator	EA005-P	4	38	10.53	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	12	16.67	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	19	10.53	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	3	21	14.29	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	2	10	20.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	15	6.67	10.00	✘	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	37	10.81	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	2	19	10.53	10.00	✔	NEPM 2013 B3 & ALS QC Standard
<b>Laboratory Control Samples (LCS)</b>							
Alkalinity by PC Titrator	ED037-P	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	1	7	14.29	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	11	18.18	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	10	10.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	10	10.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	7	14.29	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	8	12.50	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	12	8.33	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	5.88	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard





Matrix: **WATER** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Control Samples (LCS) - Continued</b>							
Total Dissolved Solids (High Level)	EA015H	2	12	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	21	9.52	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	37	5.41	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
<b>Method Blanks (MB)</b>							
Ammonia as N by Discrete analyser	EK055G	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	1	8	12.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	21	9.52	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	37	5.41	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>							
Ammonia as N by Discrete analyser	EK055G	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	1	7	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Regular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Matrix Spikes (MS) - Continued</b>							
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	19	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	21	9.52	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	1	10	10.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	15	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	37	5.41	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	1	19	5.26	5.00	✔	NEPM 2013 B3 & ALS QC Standard



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by PC Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of 'filterable' residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM (2013) Schedule B(3)
Alkalinity by PC Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM (2013) Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Oxidised Sulfur as SO4 2-	ED043	WATER	In house: The sample is treated with Peroxide to convert all Sulfur species to Sulfate. Sulfate in the sample can then be determined by ICPAES and reported as TOS as SO4 2-.
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm APHA 21st edition seal method 2 017-1-L april 2003
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM (2013) Schedule B(3)  Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM (2013) Schedule B(3)  Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM (2013) Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.



Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Fluoride by PC Titrator	EK040P	WATER	In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3)
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO <sub>2</sub> - B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO <sub>3</sub> - F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined separately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite and Nitrate as N (NO <sub>x</sub> ) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO <sub>3</sub> - F. Combined oxidised Nitrogen (NO <sub>2</sub> +NO <sub>3</sub> ) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with orthophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM (2013) Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Volatile Organic Compounds WF Detection Limits	EP074-WF	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)



<i>Analytical Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with methanol. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers.
<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Total Oxidisable Sulfur as SO4 2- Prep	ED043-PR	WATER	In house
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (2013) Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.





SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : EM1709415

Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: MS AVERYLL COYNE	Contact	: Carol Walsh
Address	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	Address	: 4 Westall Rd Springvale VIC Australia 3171
E-mail	: averyll.coyne@aecom.com	E-mail	: carol.walsh@alsglobal.com
Telephone	: +61 03 9653 1234	Telephone	: +61-3-8549 9608
Facsimile	: +61 03 9654 7117	Facsimile	: +61-3-8549 9601
Project	: 60537182	Page	: 1 of 3
Order number	: Task 3.2	Quote number	: EM2016AECOMAU0012 (ME/199/16)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: BH, BP, JM		

Dates

Date Samples Received	: 18-Jul-2017 14:00	Issue Date	: 18-Jul-2017
Client Requested Due Date	: 25-Jul-2017	Scheduled Reporting Date	: <b>25-Jul-2017</b>

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 2	Temperature	: 1.5°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 13 / 11

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- **Please direct any queries related to sample condition / numbering / breakages to Client Services.**
- Sample Disposal - Aqueous (14 days), Solid (60 days) from date of completion of work order.
- **Analytical work for this work order will be conducted at ALS Springvale and ALS Sydney.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**



## Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- **No sample container / preservation non-compliance exists.**

### Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EG020F Dissolved Metals by ICPMS	WATER - EG020T Total Recoverable Metals by ICPMS (including	WATER - EK059G Nitrite plus Nitrate as N (NOx) by Discrete	WATER - EP231X PFAS - Full Suite (28 analytes)	WATER - Ionic Balance suite Ionic Balance suite	WATER - W-02T 8 metals (Total)	WATER - W-26 TRH/BTEXN/PAH/8 Metals
EM1709415-001	17-Jul-2017 00:00	GW51_17/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709415-002	17-Jul-2017 00:00	GW53_17/07/17	✓	✓	✓		✓	✓	✓
EM1709415-003	17-Jul-2017 00:00	GW62_17/07/17	✓	✓	✓		✓	✓	✓
EM1709415-004	17-Jul-2017 00:00	GW48_17/07/17	✓	✓	✓		✓	✓	✓
EM1709415-005	17-Jul-2017 00:00	QC211_17/07/17		✓					
EM1709415-006	17-Jul-2017 00:00	QC212_17/07/17		✓					
EM1709415-009	17-Jul-2017 00:00	GW10_17/07/17	✓	✓	✓	✓	✓	✓	✓
EM1709415-010	17-Jul-2017 00:00	GW14_17/07/17	✓	✓	✓		✓	✓	✓
EM1709415-012	17-Jul-2017 00:00	GW26_17/07/17	✓	✓	✓		✓	✓	✓

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	(On Hold) WATER No analysis requested	WATER - ED043 Total Oxidised Sulfur as SO4 2-	WATER - EP005 Total Organic Carbon (TOC)	WATER - EP074-WF Full VOCs with WF DL incl DCM & Acetone	WATER - W-05T TRH/BTEXN/8 Metals (Total)	WATER - W-18 TRH(C6 - C9)/BTEXN
EM1709415-001	17-Jul-2017 00:00	GW51_17/07/17		✓	✓	✓		
EM1709415-002	17-Jul-2017 00:00	GW53_17/07/17		✓	✓	✓		
EM1709415-003	17-Jul-2017 00:00	GW62_17/07/17		✓	✓	✓		
EM1709415-004	17-Jul-2017 00:00	GW48_17/07/17		✓	✓	✓		
EM1709415-005	17-Jul-2017 00:00	QC211_17/07/17					✓	
EM1709415-006	17-Jul-2017 00:00	QC212_17/07/17					✓	
EM1709415-007	17-Jul-2017 00:00	QC213_17/07/17						✓
EM1709415-008	17-Jul-2017 00:00	QC214_17/07/17						✓
EM1709415-009	17-Jul-2017 00:00	GW10_17/07/17		✓	✓	✓		
EM1709415-010	17-Jul-2017 00:00	GW14_17/07/17		✓	✓	✓		
EM1709415-011	17-Jul-2017 00:00	GW32_17/07/17	✓					
EM1709415-012	17-Jul-2017 00:00	GW26_17/07/17		✓	✓	✓		
EM1709415-013	17-Jul-2017 00:00	QC116_17/07/17	✓					



## CERTIFICATE OF ANALYSIS

<b>Work Order</b> : <b>EM1709415</b> <b>Amendment</b> : <b>1</b> <b>Client</b> : <b>AECOM Australia Pty Ltd</b> <b>Contact</b> : <b>MS AVERYLL COYNE</b> <b>Address</b> : <b>COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004</b> <b>Telephone</b> : <b>+61 03 9653 1234</b> <b>Project</b> : <b>60537182</b> <b>Order number</b> : <b>Task 3.2</b> <b>C-O-C number</b> : <b>----</b> <b>Sampler</b> : <b>BH, BP, JM</b> <b>Site</b> : <b>----</b> <b>Quote number</b> : <b>ME/199/16</b> <b>No. of samples received</b> : <b>13</b> <b>No. of samples analysed</b> : <b>12</b>	<b>Page</b> : 1 of 26  <b>Laboratory</b> : Environmental Division Melbourne <b>Contact</b> : Carol Walsh <b>Address</b> : 4 Westall Rd Springvale VIC Australia 3171  <b>Telephone</b> : +61-3-8549 9608 <b>Date Samples Received</b> : 18-Jul-2017 14:00 <b>Date Analysis Commenced</b> : 19-Jul-2017 <b>Issue Date</b> : 04-Aug-2017 16:28
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Accreditation No. 825  
Accredited for compliance with  
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

**Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.**

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	Senior Semivolatile Instrument Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC



## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
LOR = Limit of reporting  
^ = This result is computed from individual analyte detections at or above the level of reporting  
ø = ALS is not NATA accredited for these tests.  
~ = Indicates an estimated value.

- TDS by method EA-015 for EM1709415 #2,4,10,12 high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- ED037-P: EM1709395 #3 Poor duplicate precision for Carbonate Alkalinity as CaCO<sub>3</sub> due to sample heterogeneity. Confirmed by re-analysis.
- EK057G: Results for EM1709415-002 have been confirmed by re-preparation and re-analysis.
- ED093F:EM1709415\_011 has been confirmed for major cations by re-preparation and re-analysis.
- ED041G & ED045G: Results for EM1709415-011 have been confirmed by re-preparation and re-analysis.
- Amendment (31/07/2017): This report has been amended and re-released to allow the reporting of additional analytical data.
- EP074-WF: Particular sample EM1709415\_11 required dilution due to the presence of high level contaminants. LOR values have been adjusted accordingly.
- EP075(SIM): Particular sample (EM1709415\_011) required dilution due to the presence of high level contaminants. LOR values have been adjusted accordingly.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- ED045G: The presence of thiocyanate can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- EG035T: EM1709415-011 sample results for total mercury confirmed by re-extraction and re-analysis.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW51_17/07/17	GW53_17/07/17	GW62_17/07/17	GW48_17/07/17	QC211_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-001	EM1709415-002	EM1709415-003	EM1709415-004	EM1709415-005	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.53	6.89	7.37	6.64	----	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	2260	1170	3230	1380	----	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	327	371	188	271	----	
Total Alkalinity as CaCO3	----	1	mg/L	327	371	188	271	----	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	213	320	243	393	----	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	442	710	326	657	----	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	1080	91	1510	124	----	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	78	90	299	86	----	
Magnesium	7439-95-4	1	mg/L	62	38	75	52	----	
Sodium	7440-23-5	1	mg/L	692	188	638	180	----	
Potassium	7440-09-7	1	mg/L	25	10	30	7	----	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.04	0.46	<0.01	0.52	----	
Arsenic	7440-38-2	0.001	mg/L	0.003	0.009	0.001	0.005	----	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----	
Chromium	7440-47-3	0.001	mg/L	0.002	0.007	<0.001	0.003	----	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	0.001	----	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----	
Manganese	7439-96-5	0.001	mg/L	0.025	0.078	0.125	0.044	----	
Nickel	7440-02-0	0.001	mg/L	0.014	0.024	0.018	0.031	----	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----	
Zinc	7440-66-6	0.005	mg/L	0.005	0.013	0.006	0.009	----	
Iron	7439-89-6	0.05	mg/L	1.64	2.25	0.32	5.66	----	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	10.0	14.9	11.6	30.8	<0.01	
Arsenic	7440-38-2	0.001	mg/L	0.018	0.030	0.022	0.034	<0.001	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW51_17/07/17	GW53_17/07/17	GW62_17/07/17	GW48_17/07/17	QC211_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-001	EM1709415-002	EM1709415-003	EM1709415-004	EM1709415-005	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	0.0001	0.0001	<0.0001	0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.028	0.052	0.026	0.090	<0.001	
Copper	7440-50-8	0.001	mg/L	0.008	0.008	0.008	0.019	<0.001	
Nickel	7440-02-0	0.001	mg/L	0.026	0.042	0.031	0.063	<0.001	
Lead	7439-92-1	0.001	mg/L	0.011	0.013	0.013	0.020	<0.001	
Zinc	7440-66-6	0.005	mg/L	0.096	0.054	0.030	0.089	<0.005	
Manganese	7439-96-5	0.001	mg/L	0.054	0.102	0.168	0.096	----	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	13.8	13.9	19.8	37.5	<0.05	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.5	0.2	0.7	0.2	----	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	0.33	1.23	0.26	0.91	----	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.02	<0.01	0.03	----	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	0.01	0.02	1.39	----	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.03	0.02	1.42	----	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.07	0.02	<0.01	<0.01	----	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	41.4	16.6	51.4	17.1	----	
Total Cations	----	0.01	meq/L	39.7	16.0	49.6	16.6	----	
Ionic Balance	----	0.01	%	2.09	1.80	1.78	1.53	----	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	14	47	5	36	----	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW51_17/07/17	GW53_17/07/17	GW62_17/07/17	GW48_17/07/17	QC211_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-001	EM1709415-002	EM1709415-003	EM1709415-004	EM1709415-005	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	<1	<1	<1	----	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	<1	<1	----	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	<1	<1	----	
Styrene	100-42-5	1	µg/L	<1	<1	<1	<1	----	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	<1	<1	----	
Isopropylbenzene	98-82-8	1	µg/L	<1	<1	<1	<1	----	
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	<1	<1	----	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	<1	<1	----	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	<1	<1	----	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	<1	<1	----	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	<1	<1	----	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	<1	<1	----	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	<1	<1	----	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	<10	<10	----	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	<10	<10	----	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	<10	<10	----	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	<10	<10	----	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	<10	<10	----	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	<1	<1	<1	----	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	----	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	----	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	----	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	----	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	----	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	<10	<10	----	
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	----	
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	<10.0	<10.0	----	
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	----	
Chloroethane	75-00-3	10	µg/L	<10	<10	<10	<10	----	
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW51_17/07/17	GW53_17/07/17	GW62_17/07/17	GW48_17/07/17	QC211_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-001	EM1709415-002	EM1709415-003	EM1709415-004	EM1709415-005	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	----	
Iodomethane	74-88-4	1	µg/L	<1	<1	<1	<1	----	
Methylene chloride	75-09-2	4	µg/L	<4	<4	<4	<4	----	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	1	<1	----	
1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	<1	<1	----	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	8	<1	2	<1	----	
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	----	
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	----	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	----	
1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	----	
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	----	
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	----	
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	----	
1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	----	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	----	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	----	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	----	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	<1	<1	----	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	----	
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	----	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	<1	<1	----	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	----	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	<1	<1	<1	----	
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	----	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	<1	----	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	----	
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	<1	<1	----	
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	<1	<1	----	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	<1	<1	----	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	<1	<1	----	
<b>EP074G: Trihalomethanes</b>									



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW51_17/07/17	GW53_17/07/17	GW62_17/07/17	GW48_17/07/17	QC211_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-001	EM1709415-002	EM1709415-003	EM1709415-004	EM1709415-005	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	<1	<1	<1	<1	----	
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	<1	<1	----	
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	----	
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	----	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW51_17/07/17	GW53_17/07/17	GW62_17/07/17	GW48_17/07/17	QC211_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-001	EM1709415-002	EM1709415-003	EM1709415-004	EM1709415-005	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	----	----	----	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	----	----	----	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.05	----	----	----	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	----	----	----	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.01	----	----	----	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	----	----	----	----	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	----	----	----	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	----	----	----	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	----	----	----	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	----	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW51_17/07/17	GW53_17/07/17	GW62_17/07/17	GW48_17/07/17	QC211_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-001	EM1709415-002	EM1709415-003	EM1709415-004	EM1709415-005	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	----	----	----	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	----	----	----	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	----	----	----	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	----	----	----	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	----	----	----	----	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	----	----	----	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	----	----	----	----	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	----	----	----	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	----	----	----	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	----	----	----	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	----	----	----	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	----	----	----	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	----	----	----	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	----	----	----	----	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	----	----	----	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	----	----	----	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	----	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW51_17/07/17	GW53_17/07/17	GW62_17/07/17	GW48_17/07/17	QC211_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-001	EM1709415-002	EM1709415-003	EM1709415-004	EM1709415-005	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	----	----	----	----	----
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	0.06	----	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.06	----	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	0.06	----	----	----	----	----
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	99.6	101	95.7	98.0	----	
Toluene-D8	2037-26-5	1	%	106	108	100	102	----	
4-Bromofluorobenzene	460-00-4	1	%	102	99.1	99.8	100	----	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	29.0	26.5	30.2	27.3	----	
2-Chlorophenol-D4	93951-73-6	1	%	81.8	73.9	86.4	74.2	----	
2,4,6-Tribromophenol	118-79-6	1	%	70.3	68.4	76.8	69.7	----	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	75.2	66.8	80.5	74.3	----	
Anthracene-d10	1719-06-8	1	%	88.3	78.6	90.7	79.2	----	
4-Terphenyl-d14	1718-51-0	1	%	92.4	78.2	93.3	83.0	----	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	103	105	99.6	102	101	
Toluene-D8	2037-26-5	2	%	97.3	99.1	91.6	92.7	98.3	
4-Bromofluorobenzene	460-00-4	2	%	98.9	97.5	99.8	98.0	102	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	94.3	----	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC212_17/07/17	QC213_17/07/17	QC214_17/07/17	GW10_17/07/17	GW14_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-006	EM1709415-007	EM1709415-008	EM1709415-009	EM1709415-010	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	----	----	----	6.65	6.46	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	----	----	----	462	392	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	----	----	----	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	----	----	----	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	----	----	----	234	59	
Total Alkalinity as CaCO3	----	1	mg/L	----	----	----	234	59	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	----	----	----	102	8	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	----	----	----	154	<10	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	----	----	----	24	11	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	----	----	----	67	16	
Magnesium	7439-95-4	1	mg/L	----	----	----	21	3	
Sodium	7440-23-5	1	mg/L	----	----	----	42	12	
Potassium	7440-09-7	1	mg/L	----	----	----	8	2	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	----	----	----	0.08	0.63	
Arsenic	7440-38-2	0.001	mg/L	----	----	----	0.006	0.004	
Cadmium	7440-43-9	0.0001	mg/L	----	----	----	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	----	----	----	0.003	<0.001	
Copper	7440-50-8	0.001	mg/L	----	----	----	0.002	0.002	
Lead	7439-92-1	0.001	mg/L	----	----	----	0.001	<0.001	
Manganese	7439-96-5	0.001	mg/L	----	----	----	0.020	<0.001	
Nickel	7440-02-0	0.001	mg/L	----	----	----	0.023	0.004	
Selenium	7782-49-2	0.01	mg/L	----	----	----	<0.01	<0.01	
Zinc	7440-66-6	0.005	mg/L	----	----	----	0.028	0.024	
Iron	7439-89-6	0.05	mg/L	----	----	----	1.16	0.17	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	<0.01	----	----	7.72	17.7	
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	0.034	0.015	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC212_17/07/17	QC213_17/07/17	QC214_17/07/17	GW10_17/07/17	GW14_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-006	EM1709415-007	EM1709415-008	EM1709415-009	EM1709415-010	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	0.029	0.022	
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	0.032	0.013	
Nickel	7440-02-0	0.001	mg/L	<0.001	----	----	0.037	0.015	
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	0.066	0.013	
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	0.166	0.066	
Manganese	7439-96-5	0.001	mg/L	----	----	----	0.034	0.014	
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	<0.05	----	----	11.3	7.66	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	----	----	----	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	----	----	----	0.4	0.6	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	----	----	----	0.07	0.02	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	----	----	----	<0.01	<0.01	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	----	----	----	<0.01	0.01	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	----	----	----	<0.01	0.01	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	----	----	----	<0.01	0.19	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	----	----	----	7.48	1.66	
Total Cations	----	0.01	meq/L	----	----	----	7.10	1.62	
Ionic Balance	----	0.01	%	----	----	----	2.56	1.14	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	----	----	----	11	4	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	----	----	----	<1	<1	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC212_17/07/17	QC213_17/07/17	QC214_17/07/17	GW10_17/07/17	GW14_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-006	EM1709415-007	EM1709415-008	EM1709415-009	EM1709415-010	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	----	----	----	<1	<1	
Ethylbenzene	100-41-4	1	µg/L	----	----	----	<1	<1	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	----	----	----	<1	<1	
Styrene	100-42-5	1	µg/L	----	----	----	<1	<1	
ortho-Xylene	95-47-6	1	µg/L	----	----	----	<1	<1	
Isopropylbenzene	98-82-8	1	µg/L	----	----	----	<1	<1	
n-Propylbenzene	103-65-1	1	µg/L	----	----	----	<1	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	----	----	----	<1	<1	
sec-Butylbenzene	135-98-8	1	µg/L	----	----	----	<1	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	----	----	----	<1	<1	
tert-Butylbenzene	98-06-6	1	µg/L	----	----	----	<1	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	----	----	----	<1	<1	
n-Butylbenzene	104-51-8	1	µg/L	----	----	----	<1	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	----	----	----	<10	<10	
Vinyl Acetate	108-05-4	10	µg/L	----	----	----	<10	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	----	----	----	<10	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	----	----	----	<10	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	----	----	----	<10	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	----	----	----	<1	<1	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	----	----	----	<1	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	----	----	----	<1	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	----	----	----	<2	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	----	----	----	<2	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	----	----	----	<1	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	----	----	----	<10	<10	
Chloromethane	74-87-3	10	µg/L	----	----	----	<10	<10	
Vinyl chloride	75-01-4	10	µg/L	----	----	----	<10.0	<10.0	
Bromomethane	74-83-9	10	µg/L	----	----	----	<10	<10	
Chloroethane	75-00-3	10	µg/L	----	----	----	<10	<10	
Trichlorofluoromethane	75-69-4	10	µg/L	----	----	----	<10	<10	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC212_17/07/17	QC213_17/07/17	QC214_17/07/17	GW10_17/07/17	GW14_17/07/17
Client sampling date / time					17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709415-006	EM1709415-007	EM1709415-008	EM1709415-009	EM1709415-010	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	----	----	----	<1	<1	
Iodomethane	74-88-4	1	µg/L	----	----	----	<1	<1	
Methylene chloride	75-09-2	4	µg/L	----	----	----	<4	<4	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	----	----	----	<1	<1	
1,1-Dichloroethane	75-34-3	1	µg/L	----	----	----	<1	<1	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	----	----	----	<1	<1	
1,1,1-Trichloroethane	71-55-6	1	µg/L	----	----	----	<1	<1	
1,1-Dichloropropylene	563-58-6	1	µg/L	----	----	----	<1	<1	
Carbon Tetrachloride	56-23-5	1	µg/L	----	----	----	<1	<1	
1,2-Dichloroethane	107-06-2	1	µg/L	----	----	----	<1	<1	
Trichloroethene	79-01-6	1	µg/L	----	----	----	<1	<1	
Dibromomethane	74-95-3	1	µg/L	----	----	----	<1	<1	
1,1,2-Trichloroethane	79-00-5	1	µg/L	----	----	----	<1	<1	
1,3-Dichloropropane	142-28-9	1	µg/L	----	----	----	<1	<1	
Tetrachloroethene	127-18-4	1	µg/L	----	----	----	<1	<1	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	----	----	----	<1	<1	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	----	----	----	<1	<1	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	----	----	----	<1	<1	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	----	----	----	<1	<1	
1,2,3-Trichloropropane	96-18-4	1	µg/L	----	----	----	<1	<1	
Pentachloroethane	76-01-7	1	µg/L	----	----	----	<1	<1	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	----	----	----	<1	<1	
Hexachlorobutadiene	87-68-3	1	µg/L	----	----	----	<1.0	<1.0	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	----	----	----	<1	<1	
Bromobenzene	108-86-1	1	µg/L	----	----	----	<1	<1	
2-Chlorotoluene	95-49-8	1	µg/L	----	----	----	<1	<1	
4-Chlorotoluene	106-43-4	1	µg/L	----	----	----	<1	<1	
1,3-Dichlorobenzene	541-73-1	1	µg/L	----	----	----	<1	<1	
1,4-Dichlorobenzene	106-46-7	1	µg/L	----	----	----	<1.0	<1.0	
1,2-Dichlorobenzene	95-50-1	1	µg/L	----	----	----	<1	<1	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	----	----	----	<1	<1	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	----	----	----	<1	<1	
<b>EP074G: Trihalomethanes</b>									



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC212_17/07/17	QC213_17/07/17	QC214_17/07/17	GW10_17/07/17	GW14_17/07/17
Client sampling date / time					17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709415-006	EM1709415-007	EM1709415-008	EM1709415-009	EM1709415-010	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	----	----	----	<1	2	
Bromodichloromethane	75-27-4	1	µg/L	----	----	----	<1	<1	
Dibromochloromethane	124-48-1	1	µg/L	----	----	----	<1	<1	
Bromoform	75-25-2	1	µg/L	----	----	----	<1	<1	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	----	----	----	<5	<5	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	----	----	----	<1.0	<1.0	
Acenaphthylene	208-96-8	1	µg/L	----	----	----	<1.0	<1.0	
Acenaphthene	83-32-9	1	µg/L	----	----	----	<1.0	<1.0	
Fluorene	86-73-7	1	µg/L	----	----	----	<1.0	<1.0	
Phenanthrene	85-01-8	1	µg/L	----	----	----	<1.0	<1.0	
Anthracene	120-12-7	1	µg/L	----	----	----	<1.0	<1.0	
Fluoranthene	206-44-0	1	µg/L	----	----	----	<1.0	<1.0	
Pyrene	129-00-0	1	µg/L	----	----	----	<1.0	<1.0	
Benzo(a)anthracene	56-55-3	1	µg/L	----	----	----	<1.0	<1.0	
Chrysene	218-01-9	1	µg/L	----	----	----	<1.0	<1.0	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	----	----	----	<1.0	<1.0	
Benzo(k)fluoranthene	207-08-9	1	µg/L	----	----	----	<1.0	<1.0	
Benzo(a)pyrene	50-32-8	0.5	µg/L	----	----	----	<0.5	<0.5	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	----	----	----	<1.0	<1.0	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	----	----	----	<1.0	<1.0	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	----	----	----	<1.0	<1.0	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	----	----	----	<0.5	<0.5	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	----	----	----	<0.5	<0.5	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	----	----	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	----	----	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	----	----	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	<50	<50	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC212_17/07/17	QC213_17/07/17	QC214_17/07/17	GW10_17/07/17	GW14_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-006	EM1709415-007	EM1709415-008	EM1709415-009	EM1709415-010	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	----	----	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	----	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	----	----	0.07	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	----	----	<0.02	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	----	----	0.04	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	----	----	<0.02	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	----	----	0.04	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	----	----	<0.02	----	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	----	----	<0.1	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	----	----	<0.02	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	----	----	<0.02	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	----	----	<0.02	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC212_17/07/17	QC213_17/07/17	QC214_17/07/17	GW10_17/07/17	GW14_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-006	EM1709415-007	EM1709415-008	EM1709415-009	EM1709415-010	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	----	----	<0.01	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	----	----	<0.02	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	----	----	<0.02	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	----	----	<0.02	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	----	----	<0.02	----	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	----	----	----	<0.02	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	----	----	<0.05	----	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	----	----	<0.02	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	----	----	<0.05	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	----	----	<0.05	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	----	----	----	<0.05	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	----	----	<0.05	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	----	----	<0.02	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	----	----	<0.02	----	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	----	----	<0.05	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	----	----	<0.05	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	----	----	<0.05	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC212_17/07/17	QC213_17/07/17	QC214_17/07/17	GW10_17/07/17	GW14_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-006	EM1709415-007	EM1709415-008	EM1709415-009	EM1709415-010	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	----	----	<0.05	----	
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	----	----	----	0.15	----	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	----	----	0.08	----	
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	----	----	0.15	----	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	----	----	----	99.7	95.9	
Toluene-D8	2037-26-5	1	%	----	----	----	105	103	
4-Bromofluorobenzene	460-00-4	1	%	----	----	----	99.5	100	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	----	----	----	28.3	33.2	
2-Chlorophenol-D4	93951-73-6	1	%	----	----	----	85.3	88.9	
2,4,6-Tribromophenol	118-79-6	1	%	----	----	----	75.5	75.8	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	----	----	----	79.4	86.6	
Anthracene-d10	1719-06-8	1	%	----	----	----	90.8	96.6	
4-Terphenyl-d14	1718-51-0	1	%	----	----	----	92.2	102	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	102	101	98.4	104	99.7	
Toluene-D8	2037-26-5	2	%	99.9	100	97.6	95.8	94.5	
4-Bromofluorobenzene	460-00-4	2	%	103	98.2	100	98.9	98.9	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	----	----	----	93.7	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW32_17/07/17	GW26_17/07/17	----	----	----
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	EM1709415-011	EM1709415-012	-----	-----	-----	
				Result	Result	----	----	----	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.34	6.63	----	----	----	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	4560	1360	----	----	----	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	868	105	----	----	----	
Total Alkalinity as CaCO3	----	1	mg/L	868	105	----	----	----	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	666	761	----	----	----	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	1060	818	----	----	----	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	1740	15	----	----	----	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	613	298	----	----	----	
Magnesium	7439-95-4	1	mg/L	168	24	----	----	----	
Sodium	7440-23-5	1	mg/L	716	26	----	----	----	
Potassium	7440-09-7	1	mg/L	36	7	----	----	----	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	<0.01	0.02	----	----	----	
Arsenic	7440-38-2	0.001	mg/L	<0.001	0.002	----	----	----	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0007	----	----	----	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----	
Copper	7440-50-8	0.001	mg/L	<0.001	0.001	----	----	----	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----	
Manganese	7439-96-5	0.001	mg/L	1.49	0.340	----	----	----	
Nickel	7440-02-0	0.001	mg/L	<0.001	0.048	----	----	----	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	----	----	----	
Zinc	7440-66-6	0.005	mg/L	0.006	0.803	----	----	----	
Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	----	----	----	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.15	16.5	----	----	----	
Arsenic	7440-38-2	0.001	mg/L	<0.001	0.265	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW32_17/07/17	GW26_17/07/17	----	----	----
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	EM1709415-011	EM1709415-012	-----	-----	-----	
				Result	Result	----	----	----	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0021	----	----	----	
Chromium	7440-47-3	0.001	mg/L	0.002	0.036	----	----	----	
Copper	7440-50-8	0.001	mg/L	0.001	0.017	----	----	----	
Nickel	7440-02-0	0.001	mg/L	0.002	0.078	----	----	----	
Lead	7439-92-1	0.001	mg/L	0.002	0.012	----	----	----	
Zinc	7440-66-6	0.005	mg/L	0.010	1.42	----	----	----	
Manganese	7439-96-5	0.001	mg/L	1.55	1.08	----	----	----	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	----	----	----	
Iron	7439-89-6	0.05	mg/L	2.56	49.0	----	----	----	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	0.0005	<0.0001	----	----	----	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.6	0.2	----	----	----	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	11.6	0.21	----	----	----	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	----	----	----	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	0.12	----	----	----	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.12	----	----	----	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.06	0.02	----	----	----	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	80.3	18.4	----	----	----	
Total Cations	----	0.01	meq/L	76.5	18.2	----	----	----	
Ionic Balance	----	0.01	%	2.43	0.57	----	----	----	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	223	16	----	----	----	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	211	<1	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW32_17/07/17	GW26_17/07/17	----	----	----
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	EM1709415-011	EM1709415-012	-----	-----	-----	
				Result	Result	----	----	----	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	1280	<1	----	----	----	
Ethylbenzene	100-41-4	1	µg/L	547	<1	----	----	----	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	1000	<1	----	----	----	
Styrene	100-42-5	1	µg/L	<100	<1	----	----	----	
ortho-Xylene	95-47-6	1	µg/L	516	<1	----	----	----	
Isopropylbenzene	98-82-8	1	µg/L	<100	<1	----	----	----	
n-Propylbenzene	103-65-1	1	µg/L	<100	<1	----	----	----	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	123	<1	----	----	----	
sec-Butylbenzene	135-98-8	1	µg/L	<100	<1	----	----	----	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	314	<1	----	----	----	
tert-Butylbenzene	98-06-6	1	µg/L	<100	<1	----	----	----	
p-Isopropyltoluene	99-87-6	1	µg/L	<100	<1	----	----	----	
n-Butylbenzene	104-51-8	1	µg/L	<100	<1	----	----	----	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<1000	<10	----	----	----	
Vinyl Acetate	108-05-4	10	µg/L	<1000	<10	----	----	----	
2-Butanone (MEK)	78-93-3	10	µg/L	<1000	<10	----	----	----	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<1000	<10	----	----	----	
2-Hexanone (MBK)	591-78-6	10	µg/L	<1000	<10	----	----	----	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<100	<1	----	----	----	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<100	<1	----	----	----	
1,2-Dichloropropane	78-87-5	1	µg/L	<100	<1	----	----	----	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<100	<2	----	----	----	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<100	<2	----	----	----	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<100	<1	----	----	----	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<1000	<10	----	----	----	
Chloromethane	74-87-3	10	µg/L	<1000	<10	----	----	----	
Vinyl chloride	75-01-4	10	µg/L	----	<10.0	----	----	----	
Vinyl chloride	75-01-4	10.0	µg/L	<10.0	----	----	----	----	
Bromomethane	74-83-9	10	µg/L	<1000	<10	----	----	----	
Chloroethane	75-00-3	10	µg/L	<1000	<10	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW32_17/07/17	GW26_17/07/17	----	----	----
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	EM1709415-011	EM1709415-012	-----	-----	-----	
				Result	Result	----	----	----	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
Trichlorofluoromethane	75-69-4	10	µg/L	<1000	<10	----	----	----	
1.1-Dichloroethene	75-35-4	1	µg/L	<100	<1	----	----	----	
Iodomethane	74-88-4	1	µg/L	<100	<1	----	----	----	
Methylene chloride	75-09-2	4	µg/L	<100	<4	----	----	----	
trans-1.2-Dichloroethene	156-60-5	1	µg/L	<100	<1	----	----	----	
1.1-Dichloroethane	75-34-3	1	µg/L	<100	<1	----	----	----	
cis-1.2-Dichloroethene	156-59-2	1	µg/L	<100	<1	----	----	----	
1.1.1-Trichloroethane	71-55-6	1	µg/L	<100	<1	----	----	----	
1.1-Dichloropropylene	563-58-6	1	µg/L	<100	<1	----	----	----	
Carbon Tetrachloride	56-23-5	1	µg/L	<100	<1	----	----	----	
1.2-Dichloroethane	107-06-2	1	µg/L	<100	<1	----	----	----	
Trichloroethene	79-01-6	1	µg/L	<100	<1	----	----	----	
Dibromomethane	74-95-3	1	µg/L	<100	<1	----	----	----	
1.1.2-Trichloroethane	79-00-5	1	µg/L	<100	<1	----	----	----	
1.3-Dichloropropane	142-28-9	1	µg/L	<100	<1	----	----	----	
Tetrachloroethene	127-18-4	1	µg/L	<100	<1	----	----	----	
1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<100	<1	----	----	----	
trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<100	<1	----	----	----	
cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<100	<1	----	----	----	
1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<100	<1	----	----	----	
1.2.3-Trichloropropane	96-18-4	1	µg/L	<100	<1	----	----	----	
Pentachloroethane	76-01-7	1	µg/L	<100	<1	----	----	----	
1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<100	<1	----	----	----	
Hexachlorobutadiene	87-68-3	1	µg/L	----	<1.0	----	----	----	
Hexachlorobutadiene	87-68-3	1.0	µg/L	<10.0	----	----	----	----	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<100	<1	----	----	----	
Bromobenzene	108-86-1	1	µg/L	<100	<1	----	----	----	
2-Chlorotoluene	95-49-8	1	µg/L	<100	<1	----	----	----	
4-Chlorotoluene	106-43-4	1	µg/L	<100	<1	----	----	----	
1.3-Dichlorobenzene	541-73-1	1	µg/L	<100	<1	----	----	----	
1.4-Dichlorobenzene	106-46-7	1	µg/L	----	<1.0	----	----	----	
1.4-Dichlorobenzene	106-46-7	1.0	µg/L	<10.0	----	----	----	----	
1.2-Dichlorobenzene	95-50-1	1	µg/L	<100	<1	----	----	----	
1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<100	<1	----	----	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW32_17/07/17	GW26_17/07/17	----	----	----
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	EM1709415-011	EM1709415-012	-----	-----	-----	
				Result	Result	----	----	----	
<b>EP074F: Halogenated Aromatic Compounds - Continued</b>									
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<100	<1	----	----	----	
<b>EP074G: Trihalomethanes</b>									
Chloroform	67-66-3	1	µg/L	<100	<1	----	----	----	
Bromodichloromethane	75-27-4	1	µg/L	<100	<1	----	----	----	
Dibromochloromethane	124-48-1	1	µg/L	<100	<1	----	----	----	
Bromoform	75-25-2	1	µg/L	<100	<1	----	----	----	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	14700	<5	----	----	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	----	<1.0	----	----	----	
Naphthalene	91-20-3	1.0	µg/L	41100	----	----	----	----	
Acenaphthylene	208-96-8	1	µg/L	----	<1.0	----	----	----	
Acenaphthylene	208-96-8	1.0	µg/L	106	----	----	----	----	
Acenaphthene	83-32-9	1	µg/L	----	<1.0	----	----	----	
Acenaphthene	83-32-9	1.0	µg/L	3150	----	----	----	----	
Fluorene	86-73-7	1	µg/L	----	<1.0	----	----	----	
Fluorene	86-73-7	1.0	µg/L	2660	----	----	----	----	
Phenanthrene	85-01-8	1	µg/L	----	<1.0	----	----	----	
Phenanthrene	85-01-8	1.0	µg/L	3880	----	----	----	----	
Anthracene	120-12-7	1	µg/L	----	<1.0	----	----	----	
Anthracene	120-12-7	1.0	µg/L	1610	----	----	----	----	
Fluoranthene	206-44-0	1	µg/L	----	<1.0	----	----	----	
Fluoranthene	206-44-0	1.0	µg/L	1240	----	----	----	----	
Pyrene	129-00-0	1	µg/L	----	<1.0	----	----	----	
Pyrene	129-00-0	1.0	µg/L	899	----	----	----	----	
Benz(a)anthracene	56-55-3	1	µg/L	----	<1.0	----	----	----	
Benz(a)anthracene	56-55-3	1.0	µg/L	157	----	----	----	----	
Chrysene	218-01-9	1	µg/L	----	<1.0	----	----	----	
Chrysene	218-01-9	1.0	µg/L	127	----	----	----	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	----	<1.0	----	----	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	97.1	----	----	----	----	
Benzo(k)fluoranthene	207-08-9	1	µg/L	----	<1.0	----	----	----	
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	40.6	----	----	----	----	
Benzo(a)pyrene	50-32-8	0.5	µg/L	85.2	<0.5	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW32_17/07/17	GW26_17/07/17	----	----	----
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	EM1709415-011	EM1709415-012	-----	-----	-----	
				Result	Result	----	----	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>									
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	----	<1.0	----	----	----	
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	30.4	----	----	----	----	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	----	<1.0	----	----	----	
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<23.9	----	----	----	----	
Benzo(g.h.i)perylene	191-24-2	1	µg/L	----	<1.0	----	----	----	
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	39.3	----	----	----	----	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	55200	<0.5	----	----	----	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	119	<0.5	----	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	4850	<20	----	----	----	
C10 - C14 Fraction	----	50	µg/L	91200	<50	----	----	----	
C15 - C28 Fraction	----	100	µg/L	60200	<100	----	----	----	
C29 - C36 Fraction	----	50	µg/L	1720	<50	----	----	----	
^ C10 - C36 Fraction (sum)	----	50	µg/L	153000	<50	----	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	5700	<20	----	----	----	
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	2080	<20	----	----	----	
>C10 - C16 Fraction	----	100	µg/L	106000	<100	----	----	----	
>C16 - C34 Fraction	----	100	µg/L	40000	<100	----	----	----	
>C34 - C40 Fraction	----	100	µg/L	640	<100	----	----	----	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	147000	<100	----	----	----	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	90600	<100	----	----	----	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	216	<1	----	----	----	
Toluene	108-88-3	2	µg/L	1300	<2	----	----	----	
Ethylbenzene	100-41-4	2	µg/L	554	<2	----	----	----	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	1030	<2	----	----	----	
ortho-Xylene	95-47-6	2	µg/L	523	<2	----	----	----	
^ Total Xylenes	1330-20-7	2	µg/L	1550	<2	----	----	----	
^ Sum of BTEX	----	1	µg/L	3620	<1	----	----	----	
Naphthalene	91-20-3	5	µg/L	15400	<5	----	----	----	
<b>EP074S: VOC Surrogates</b>									



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW32_17/07/17	GW26_17/07/17	----	----	----
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	EM1709415-011	EM1709415-012	-----	-----	-----	
				Result	Result	----	----	----	
<b>EP074S: VOC Surrogates - Continued</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	89.1	93.8	----	----	----	
Toluene-D8	2037-26-5	1	%	84.5	98.5	----	----	----	
4-Bromofluorobenzene	460-00-4	1	%	91.4	93.6	----	----	----	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	----	29.1	----	----	----	
Phenol-d6	13127-88-3	1.0	%	Not Determined	----	----	----	----	
2-Chlorophenol-D4	93951-73-6	1	%	----	80.7	----	----	----	
2-Chlorophenol-D4	93951-73-6	1.0	%	Not Determined	----	----	----	----	
2,4,6-Tribromophenol	118-79-6	1	%	----	57.6	----	----	----	
2,4,6-Tribromophenol	118-79-6	1.0	%	Not Determined	----	----	----	----	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	----	79.1	----	----	----	
2-Fluorobiphenyl	321-60-8	1.0	%	Not Determined	----	----	----	----	
Anthracene-d10	1719-06-8	1	%	----	90.9	----	----	----	
Anthracene-d10	1719-06-8	1.0	%	Not Determined	----	----	----	----	
4-Terphenyl-d14	1718-51-0	1	%	----	93.2	----	----	----	
4-Terphenyl-d14	1718-51-0	1.0	%	Not Determined	----	----	----	----	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	95.8	97.5	----	----	----	
Toluene-D8	2037-26-5	2	%	89.1	89.8	----	----	----	
4-Bromofluorobenzene	460-00-4	2	%	99.5	92.4	----	----	----	



## Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	72	120
Toluene-D8	2037-26-5	70	130
4-Bromofluorobenzene	460-00-4	70	128
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	10	46
2-Chlorophenol-D4	93951-73-6	23	104
2,4,6-Tribromophenol	118-79-6	28	130
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129
<b>EP231S: PFAS Surrogate</b>			
13C4-PFOS	----	60	130

## QUALITY CONTROL REPORT

<b>Work Order</b>	<b>: EM1709415</b>	<b>Page</b>	: 1 of 33
<b>Amendment</b>	<b>: 1</b>		
<b>Client</b>	<b>: AECOM Australia Pty Ltd</b>	<b>Laboratory</b>	: Environmental Division Melbourne
<b>Contact</b>	<b>: MS AVERYLL COYNE</b>	<b>Contact</b>	: Carol Walsh
<b>Address</b>	<b>: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004</b>	<b>Address</b>	: 4 Westall Rd Springvale VIC Australia 3171
<b>Telephone</b>	<b>: +61 03 9653 1234</b>	<b>Telephone</b>	: +61-3-8549 9608
<b>Project</b>	<b>: 60537182</b>	<b>Date Samples Received</b>	: 18-Jul-2017
<b>Order number</b>	<b>: Task 3.2</b>	<b>Date Analysis Commenced</b>	: 19-Jul-2017
<b>C-O-C number</b>	<b>: ----</b>	<b>Issue Date</b>	: 04-Aug-2017
<b>Sampler</b>	<b>: BH, BP, JM</b>		
<b>Site</b>	<b>: ----</b>		
<b>Quote number</b>	<b>: ME/199/16</b>		
<b>No. of samples received</b>	<b>: 13</b>		
<b>No. of samples analysed</b>	<b>: 12</b>		



Accreditation No. 825  
Accredited for compliance with  
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	Senior Semivolatile Instrument Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC





## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :  
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot  
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
 LOR = Limit of reporting  
 RPD = Relative Percentage Difference  
 # = Indicates failed QC

## Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA005P: pH by PC Titrator (QC Lot: 1004132)</b>									
EM1709373-011	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.62	7.59	0.394	0% - 20%
EM1709395-003	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	8.55	8.64	1.05	0% - 20%
<b>EA005P: pH by PC Titrator (QC Lot: 1004137)</b>									
EM1709425-010	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	8.50	8.53	0.352	0% - 20%
EM1709415-010	GW14_17/07/17	EA005-P: pH Value	----	0.01	pH Unit	6.46	6.41	0.777	0% - 20%
<b>EA005P: pH by PC Titrator (QC Lot: 1027402)</b>									
EM1710070-003	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.40	7.51	1.48	0% - 20%
EM1709371-011	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.30	7.34	0.546	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 1004180)</b>									
EM1709376-011	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	913	851	7.03	0% - 20%
EM1709415-012	GW26_17/07/17	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	1360	1400	2.74	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 1027297)</b>									
EM1709192-022	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	476	486	1.87	0% - 20%
EM1710018-002	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	580	585	0.858	0% - 20%
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 1004133)</b>									
EM1709376-004	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	12	8	42.9	0% - 50%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	12	8	42.9	0% - 50%
EM1709395-003	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	78	# 104	29.4	0% - 20%
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	316	294	7.22	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	393	398	1.20	0% - 20%
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 1004136)</b>									



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 1004136) - continued</b>									
EM1709425-010	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	39	42	8.58	0% - 20%
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	589	584	0.854	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	628	626	0.242	0% - 20%
EM1709415-010	GW14_17/07/17	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	59	55	6.94	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	59	55	6.94	0% - 20%
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 1027403)</b>									
EM1710018-005	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	2	<1	81.3	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	2	<1	81.3	No Limit
EM1709371-011	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	610	579	5.31	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	610	579	5.31	0% - 20%
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 1004445)</b>									
EM1709415-010	GW14_17/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	8	8	0.00	No Limit
EM1709401-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	<1	0.00	No Limit
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 1027436)</b>									
EM1710018-003	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	<1	0.00	No Limit
EM1709192-022	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	12	12	0.00	0% - 50%
<b>ED043: Total Oxidised Sulfur as SO4 2- (QC Lot: 1012553)</b>									
EM1709415-001	GW51_17/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	442	476	7.61	0% - 20%
EM1709636-002	Anonymous	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	332	307	7.76	0% - 20%
<b>ED043: Total Oxidised Sulfur as SO4 2- (QC Lot: 1032270)</b>									
EM1709192-022	Anonymous	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	23	22	8.47	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 1004444)</b>									
EM1709415-009	GW10_17/07/17	ED045G: Chloride	16887-00-6	1	mg/L	24	25	5.16	0% - 20%
EM1709401-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	172	171	0.882	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 1027435)</b>									
EM1709648-002	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	19	19	0.00	0% - 50%
EM1709192-022	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	23	22	0.00	0% - 20%
<b>ED093F: Dissolved Major Cations (QC Lot: 1004425)</b>									
EM1709415-001	GW51_17/07/17	ED093F: Calcium	7440-70-2	1	mg/L	78	78	0.00	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	62	62	0.00	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	692	693	0.247	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	25	25	0.00	0% - 20%



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>ED093F: Dissolved Major Cations (QC Lot: 1004425) - continued</b>									
EM1709427-002	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	3	3	0.00	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	<1	<1	0.00	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	2	2	0.00	No Limit
		ED093F: Potassium	7440-09-7	1	mg/L	1	1	0.00	No Limit
<b>ED093F: Dissolved Major Cations (QC Lot: 1026091)</b>									
EM1710025-031	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	12	10	12.5	0% - 50%
		ED093F: Magnesium	7439-95-4	1	mg/L	16	15	0.00	0% - 50%
		ED093F: Sodium	7440-23-5	1	mg/L	137	133	2.74	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	2	2	0.00	No Limit
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 1004424)</b>									
EM1709401-003	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.062	0.061	0.00	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.010	0.010	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.26	0.25	4.45	0% - 20%
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.21	0.20	0.00	No Limit
EM1709415-012	GW26_17/07/17	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0007	0.0007	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.340	0.335	1.44	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.048	0.049	2.82	0% - 20%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.803	0.810	0.835	0% - 20%
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.02	0.02	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 1026093)</b>									
EM1710010-003	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0017	0.0015	12.8	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.027	0.028	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.038	0.038	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.167	0.177	5.80	0% - 20%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	0.136	0.142	4.17	0% - 20%
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.813	0.860	5.60	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.311	0.333	6.90	0% - 20%



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 1026093) - continued</b>									
EM1710010-003	Anonymous	EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.512	0.557	8.46	0% - 20%
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	262	280	6.37	0% - 20%
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	0.14	0.15	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.24	0.14	50.4	No Limit
EM1709415-011	GW32_17/07/17	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	1.49	1.47	1.58	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.006	0.007	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit		
<b>EG020T: Total Metals by ICP-MS (QC Lot: 1004427)</b>									
EM1709376-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0010	0.0006	52.1	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.006	0.006	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.004	0.004	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.038	0.040	2.96	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.008	0.008	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.082	0.085	4.18	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.106	0.109	3.19	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.074	0.072	3.23	0% - 50%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	15.3	16.0	4.71	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	0.02	0.02	0.00	No Limit
EG020A-T: Iron	7439-89-6	0.05	mg/L	1.47	1.51	2.72	0% - 20%		
EM1709376-011	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0002	0.0002	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.007	0.007	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.003	0.003	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.018	0.018	0.00	0% - 50%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.019	0.015	21.3	0% - 50%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.050	0.048	2.53	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.053	0.053	0.00	0% - 50%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	4.74	4.43	6.82	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-T: Iron	7439-89-6	0.05	mg/L	9.94	10.1	1.33	0% - 20%		
<b>EG020T: Total Metals by ICP-MS (QC Lot: 1004428)</b>									
EM1709415-010	GW14_17/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020T: Total Metals by ICP-MS (QC Lot: 1004428) - continued</b>									
EM1709415-010	GW14_17/07/17	EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.015	0.015	0.00	0% - 50%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.022	0.020	9.24	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.013	0.014	0.00	0% - 50%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.013	0.013	0.00	0% - 50%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.014	0.013	0.00	0% - 50%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.015	0.016	0.00	0% - 50%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.066	0.067	0.00	0% - 50%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	17.7	15.8	11.2	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-T: Iron	7439-89-6	0.05	mg/L	7.66	7.06	8.19	0% - 20%		
<b>EG020T: Total Metals by ICP-MS (QC Lot: 1027626)</b>									
EM1709192-022	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.122	0.121	0.00	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.010	0.010	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.012	0.011	0.00	0% - 50%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.006	0.006	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.130	0.130	0.00	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.028	0.028	0.00	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.032	0.032	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	1.05	1.02	2.82	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	15.8	15.7	0.489	0% - 20%
EM1709981-003	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.005	0.005	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.093	0.095	2.23	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.004	0.005	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.02	0.03	35.5	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-T: Iron	7439-89-6	0.05	mg/L	0.08	0.08	0.00	No Limit		
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 1004423)</b>									
EM1709401-003	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709415-012	GW26_17/07/17	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 1026092)</b>									
EM1710023-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709415-011	GW32_17/07/17	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit





Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1007149)</b>									
EM1709371-010	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709376-012	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1027923)</b>									
EM1709192-022	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1710066-005	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EK040P: Fluoride by PC Titrator (QC Lot: 1004135)</b>									
EM1709415-010	GW14_17/07/17	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.6	0.6	0.00	No Limit
<b>EK040P: Fluoride by PC Titrator (QC Lot: 1027404)</b>									
EM1709371-011	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.3	0.3	0.00	No Limit
<b>EK055G: Ammonia as N by Discrete Analyser (QC Lot: 1004371)</b>									
EM1709415-001	GW51_17/07/17	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.33	0.35	4.01	0% - 20%
<b>EK055G: Ammonia as N by Discrete Analyser (QC Lot: 1030195)</b>									
EM1709192-022	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	13.2	12.9	2.27	0% - 20%
EM1710025-034	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.90	0.82	9.57	0% - 20%
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 1004447)</b>									
EM1709415-010	GW14_17/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EM1709401-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 1027437)</b>									
EM1710018-003	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EM1709192-022	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.01	<0.01	0.00	No Limit
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 1004370)</b>									
EM1709414-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EM1709425-002	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	3.41	3.44	0.777	0% - 20%
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 1030194)</b>									
EM1709192-022	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.04	0.04	0.00	No Limit
EM1710025-034	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 1004446)</b>									
EM1709415-010	GW14_17/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.19	0.19	0.00	0% - 50%
EM1709401-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	7.49	7.67	2.39	0% - 20%
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 1027438)</b>									
EM1709192-022	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.15	0.14	0.00	0% - 50%
<b>EP005: Total Organic Carbon (TOC) (QC Lot: 1009832)</b>									
EM1709395-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	18	19	0.00	0% - 50%
EM1709415-009	GW10_17/07/17	EP005: Total Organic Carbon	----	1	mg/L	11	11	0.00	0% - 50%
<b>EP005: Total Organic Carbon (TOC) (QC Lot: 1033529)</b>									
EM1709192-022	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	48	44	7.55	0% - 20%
EM1710240-002	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	32	38	16.4	0% - 20%



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 1003964)</b>										
EM1709371-001	Anonymous	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit			
EM1709415-001	GW51_17/07/17	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit			
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 1026376)</b>										
EM1709192-022	Anonymous	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit			



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 1026376) - continued</b>									
EM1709192-022	Anonymous	EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 1003964)</b>									
EM1709371-001	Anonymous	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit
EM1709415-001	GW51_17/07/17	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit
EM1709192-022	Anonymous	EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
<b>EP074B: Oxygenated Compounds (QC Lot: 1026376)</b>									
EM1709192-022	Anonymous	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 1003964)</b>									
EM1709371-001	Anonymous	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
EM1709415-001	GW51_17/07/17	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
<b>EP074C: Sulfonated Compounds (QC Lot: 1026376)</b>									
EM1709192-022	Anonymous	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit
<b>EP074D: Fumigants (QC Lot: 1003964)</b>									
EM1709371-001	Anonymous	EP074-WF: 2.2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1.3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
EM1709415-001	GW51_17/07/17	EP074-WF: 2.2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1.3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074D: Fumigants (QC Lot: 1026376)</b>									
EM1709192-022	Anonymous	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 1003964)</b>									
EM1709371-001	Anonymous	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	2	2	0.00	No Limit
		EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit		
EM1709415-001	GW51_17/07/17	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 1003964) - continued</b>									
EM1709415-001	GW51_17/07/17	EP074-WF: 1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.2-Dichloroethene	156-59-2	1	µg/L	8	8	0.00	No Limit
		EP074-WF: 1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit		
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 1026376)</b>									
EM1709192-022	Anonymous	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.2-Dichloroethene	156-59-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 1026376) - continued</b>									
EM1709192-022	Anonymous	EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 1003964)</b>									
EM1709371-001	Anonymous	EP074-WF: 1.4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
EM1709415-001	GW51_17/07/17	EP074-WF: 1.4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 1026376)</b>									
EM1709192-022	Anonymous	EP074-WF: 1.4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 1026376) - continued</b>									
EM1709192-022	Anonymous	EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 1003964)</b>									
EM1709371-001	Anonymous	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
EM1709415-001	GW51_17/07/17	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 1026376)</b>									
EM1709192-022	Anonymous	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
<b>EP074H: Naphthalene (QC Lot: 1003964)</b>									
EM1709371-001	Anonymous	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EM1709415-001	GW51_17/07/17	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP074H: Naphthalene (QC Lot: 1026376)</b>									
EM1709192-022	Anonymous	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1004334)</b>									
EM1709390-001	Anonymous	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Indeno(1,2,3-cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1004334) - continued</b>										
EM1709390-001	Anonymous	EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.00	No Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1003965)</b>										
EM1709371-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit	
EM1709415-001	GW51_17/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1003967)</b>										
EM1709415-005	QC211_17/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit	
EM1709425-007	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1004335)</b>										
EM1709390-001	Anonymous	EP071: C15 - C28 Fraction	----	100	µg/L	<100	<100	0.00	No Limit	
		EP071: C10 - C14 Fraction	----	50	µg/L	<50	<50	0.00	No Limit	
		EP071: C29 - C36 Fraction	----	50	µg/L	<50	<50	0.00	No Limit	
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1026375)</b>										
EM1710018-028	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit	
EM1709192-022	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1003965)</b>										
EM1709371-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
EM1709415-001	GW51_17/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1003967)</b>										
EM1709415-005	QC211_17/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
EM1709425-007	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1004335)</b>										
EM1709390-001	Anonymous	EP071: >C10 - C16 Fraction	----	100	µg/L	<100	<100	0.00	No Limit	
		EP071: >C16 - C34 Fraction	----	100	µg/L	<100	<100	0.00	No Limit	
		EP071: >C34 - C40 Fraction	----	100	µg/L	<100	<100	0.00	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1026375)</b>										
EM1710018-028	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
EM1709192-022	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080: BTEXN (QC Lot: 1003965)</b>										
EM1709371-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit	
EM1709415-001	GW51_17/07/17	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit	



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)		
<b>EP080: BTEXN (QC Lot: 1003965) - continued</b>											
EM1709415-001	GW51_17/07/17	EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit		
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit		
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit		
<b>EP080: BTEXN (QC Lot: 1003967)</b>											
EM1709415-005	QC211_17/07/17	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit		
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit		
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit		
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit		
			106-42-3								
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit		
EM1709425-007	Anonymous	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit		
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit		
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit		
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit		
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit		
			106-42-3								
EM1709425-007	Anonymous	EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit		
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit		
		<b>EP080: BTEXN (QC Lot: 1026375)</b>									
		EM1710018-028	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
				EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
				EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
EP080: meta- & para-Xylene	108-38-3			2	µg/L	<2	<2	0.00	No Limit		
	106-42-3										
EP080: ortho-Xylene	95-47-6			2	µg/L	<2	<2	0.00	No Limit		
EM1709192-022	Anonymous	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit		
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit		
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit		
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit		
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit		
			106-42-3								
EM1709192-022	Anonymous	EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit		
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit		
		<b>EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 1009431)</b>									
		EB1714774-002	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
				EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
				EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4			0.02	µg/L	<0.02	<0.02	0.00	No Limit		
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8			0.02	µg/L	<0.02	<0.02	0.00	No Limit		



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 1009431) - continued</b>									
EB1714774-002	Anonymous	EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EM1709459-014	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 1009431)</b>									
EB1714774-002	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EM1709459-014	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
<b>EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 1009431)</b>									
EB1714774-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 1009431) - continued</b>									
EB1714774-002	Anonymous	EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EM1709459-014	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 1009431)</b>									
EB1714774-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EM1709459-014	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231P: PFAS Sums (QC Lot: 1009431)</b>									
EB1714774-002	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
EM1709459-014	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit



## Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 1004180)</b>									
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	99.0	95	105	
				<10	293 mg/L	102	95	105	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 1027297)</b>									
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	99.1	95	105	
				<10	293 mg/L	99.0	95	105	
<b>ED037P: Alkalinity by PC Titrator (QCLot: 1004133)</b>									
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	104	88	109	
<b>ED037P: Alkalinity by PC Titrator (QCLot: 1004136)</b>									
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	105	88	109	
<b>ED037P: Alkalinity by PC Titrator (QCLot: 1027403)</b>									
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	94.9	88	109	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 1004445)</b>									
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	106	92	115	
				<1	100 mg/L	102	92	115	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 1027436)</b>									
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	110	92	115	
				<1	100 mg/L	105	92	115	
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 1012553)</b>									
ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	<10	500 mg/L	102	82	122	
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 1032270)</b>									
ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	<1	500 mg/L	97.4	82	122	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 1004444)</b>									
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	107	88	118	
				<1	1000 mg/L	103	88	118	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 1027435)</b>									
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	105	88	118	
				<1	1000 mg/L	107	88	118	
<b>ED093F: Dissolved Major Cations (QCLot: 1004425)</b>									
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	103	93	110	
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	107	91	110	
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	104	90	109	
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	107	89	109	
<b>ED093F: Dissolved Major Cations (QCLot: 1026091)</b>									



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>ED093F: Dissolved Major Cations (QCLot: 1026091) - continued</b>									
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	108	93	110	
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	103	91	110	
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	104	90	109	
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	102	89	109	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 1004424)</b>									
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	102	93	105	
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	96.2	91	107	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	99.2	84	104	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	91.5	83	103	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	90.7	82	103	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	90.8	83	105	
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	92.7	83	105	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.7	82	106	
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	95.6	82	109	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	92.6	85	109	
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	98.6	94	106	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 1026093)</b>									
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	98.8	93	105	
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	98.6	91	107	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.1	84	104	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	91.6	83	103	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	94.0	82	103	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	94.6	83	105	
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	94.3	83	105	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	98.3	82	106	
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	97.4	82	109	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	99.2	85	109	
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	101	94	106	
<b>EG020T: Total Metals by ICP-MS (QCLot: 1004427)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	105	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	96.7	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	101	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	95.2	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	91.2	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	92.0	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	95.9	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.8	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	89.4	85	113	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EG020T: Total Metals by ICP-MS (QCLot: 1004427) - continued</b>									
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	94.1	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	94.9	80	120	
<b>EG020T: Total Metals by ICP-MS (QCLot: 1004428)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	103	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	98.8	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	100	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	94.2	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	91.5	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	93.6	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	96.2	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	93.2	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	90.1	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	93.8	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	96.2	80	120	
<b>EG020T: Total Metals by ICP-MS (QCLot: 1027626)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	107	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	106	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	105	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	96.7	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.4	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	103	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	102	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	98.3	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	111	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	101	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	107	80	120	
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 1004423)</b>									
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	86.4	81	114	
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 1026092)</b>									
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	85.2	81	114	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1007149)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	86.0	81	114	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1027923)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	91.0	81	114	
<b>EK040P: Fluoride by PC Titrator (QCLot: 1004135)</b>									
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	102	85	112	
<b>EK040P: Fluoride by PC Titrator (QCLot: 1027404)</b>									



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EK040P: Fluoride by PC Titrator (QCLot: 1027404) - continued</b>									
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	101	85	112	
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 1004371)</b>									
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	105	80	115	
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 1030195)</b>									
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	102	80	115	
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 1004447)</b>									
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	102	94	107	
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 1027437)</b>									
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	106	94	107	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 1004370)</b>									
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	104	89	114	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 1030194)</b>									
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	107	89	114	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 1004446)</b>									
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	102	94	108	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 1027438)</b>									
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	102	94	108	
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1009832)</b>									
EP005: Total Organic Carbon	----	1	mg/L	<1	100 mg/L	94.1	81	109	
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1033529)</b>									
EP005: Total Organic Carbon	----	1	mg/L	<1	100 mg/L	101	81	109	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1003964)</b>									
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	100	81	119	
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	104	84	117	
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	95.9	83	114	
EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	40 µg/L	93.6	81	116	
	106-42-3								
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	96.8	82	118	
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	97.6	85	115	
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	93.6	81	113	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	91.5	76	111	
EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	91.9	79	109	
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	88.8	77	111	
EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	93.2	79	108	
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	90.9	80	110	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	86.6	75	111	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	83.0	68	111	





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1026376)</b>									
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	87.5	81	119	
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	91.2	84	117	
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	90.4	83	114	
EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	40 µg/L	88.0	81	116	
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	91.2	82	118	
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	91.4	85	115	
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	90.5	81	113	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	92.3	76	111	
EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	94.2	79	109	
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	93.6	77	111	
EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	93.1	79	108	
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	94.1	80	110	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	91.3	75	111	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	87.8	68	111	
<b>EP074B: Oxygenated Compounds (QCLot: 1003964)</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	96.6	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	107	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	102	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	105	73	128	
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	112	75	129	
<b>EP074B: Oxygenated Compounds (QCLot: 1026376)</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	69.6	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	85.0	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	78.4	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	86.9	73	128	
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	83.9	75	129	
<b>EP074C: Sulfonated Compounds (QCLot: 1003964)</b>									
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	95.3	64	119	
<b>EP074C: Sulfonated Compounds (QCLot: 1026376)</b>									
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	76.0	64	119	
<b>EP074D: Fumigants (QCLot: 1003964)</b>									
EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	96.3	74	117	
EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	102	83	118	
EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	98.2	74	109	
EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	98.4	70	109	
EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	105	81	116	
<b>EP074D: Fumigants (QCLot: 1026376)</b>									



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074D: Fumigants (QCLot: 1026376) - continued</b>									
EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	88.0	74	117	
EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	92.3	83	118	
EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	87.6	74	109	
EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	86.1	70	109	
EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	88.1	81	116	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1003964)</b>									
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	91.6	61	137	
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	98.5	66	137	
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	92.9	67	135	
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	87.3	52	128	
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	91.5	76	125	
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	97.7	74	123	
EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	98.4	75	120	
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	63.9	37	120	
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	20 µg/L	112	72	159	
EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	98.0	78	117	
EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	102	81	118	
EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	100	83	118	
EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	97.0	76	115	
EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	96.7	75	117	
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	92.7	72	111	
EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	105	81	120	
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	87.8	78	116	
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	105	79	116	
EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	107	85	119	
EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	109	85	119	
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	94.6	76	120	
EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	97.4	78	110	
EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	107	64	118	
EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	98.4	51	113	
EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	106	85	121	
EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	106	84	118	
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	95.1	64	109	
EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	99.8	65	115	
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	76.4	70	121	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1026376)</b>									
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	62.4	61	137	
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	66.3	66	137	
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	76.7	67	135	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1026376) - continued</b>									
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	68.4	52	128	
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	79.8	76	125	
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	77.8	74	123	
EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	77.4	75	120	
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	63.9	37	120	
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	20 µg/L	94.6	72	159	
EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	81.8	78	117	
EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	89.4	81	118	
EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	90.2	83	118	
EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	88.5	76	115	
EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	81.6	75	117	
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	83.9	72	111	
EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	89.8	81	120	
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	80.4	78	116	
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	91.0	79	116	
EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	91.8	85	119	
EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	93.3	85	119	
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	86.4	76	120	
EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	90.8	78	110	
EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	83.1	64	118	
EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	79.8	51	113	
EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	89.3	85	121	
EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	89.6	84	118	
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	91.8	64	109	
EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	87.8	65	115	
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	92.2	70	121	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 1003964)</b>									
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	99.0	85	115	
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	88.4	82	116	
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	94.5	81	112	
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	93.5	80	110	
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	95.5	80	110	
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	95.3	80	112	
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	96.6	84	111	
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	91.6	70	114	
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	95.6	78	116	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 1026376)</b>									
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	90.8	85	115	
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	85.2	82	116	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 1026376) - continued</b>									
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	94.5	81	112	
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	94.0	80	110	
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	92.7	80	110	
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	92.6	80	112	
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	93.1	84	111	
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	89.7	70	114	
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	91.6	78	116	
<b>EP074G: Trihalomethanes (QCLot: 1003964)</b>									
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	101	82	118	
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	96.2	75	112	
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	96.1	73	108	
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	92.4	68	107	
<b>EP074G: Trihalomethanes (QCLot: 1026376)</b>									
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	92.6	82	118	
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	90.6	75	112	
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	87.4	73	108	
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	84.1	68	107	
<b>EP074H: Naphthalene (QCLot: 1003964)</b>									
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	102	80	116	
<b>EP074H: Naphthalene (QCLot: 1026376)</b>									
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	92.4	80	116	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1004334)</b>									
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	67.0	39	110	
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	68.9	40	124	
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	72.1	47	117	
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	74.6	51	118	
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	75.6	53	119	
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	51.8	51	113	
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	74.4	59	123	
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	73.3	58	123	
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	65.7	52	126	
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	69.1	55	123	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	1	µg/L	<1.0	5 µg/L	70.8	52	131	
EP075(SIM): Benzo(k)fluoranthene	205-82-3								
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	75.3	57	126	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	69.2	56	126	
EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	71.0	53	123	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	70.8	53	125	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1004334) - continued</b>									
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	71.8	53	125	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1026083)</b>									
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	76.4	39	110	
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	80.0	40	124	
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	80.9	47	117	
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	83.7	51	118	
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	85.9	53	119	
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	58.4	51	113	
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	88.3	59	123	
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	87.7	58	123	
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	81.6	52	126	
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	87.6	55	123	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	85.3	52	131	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	83.4	57	126	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	80.2	56	126	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	87.6	53	123	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	88.2	53	125	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	89.4	53	125	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1003965)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	93.3	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1003967)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	103	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1004335)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	75.2	53	123	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	75.4	57	133	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	67.4	55	141	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1026084)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	110	53	123	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	112	57	133	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	106	55	141	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1026375)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	89.7	67	127	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1003965)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	92.8	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1003967)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	101	65	125	





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1004335)</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	73.1	54	122	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	70.8	56	132	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	73.6	51	137	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1026084)</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	110	54	122	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	108	56	132	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	113	51	137	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1026375)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	89.9	65	125	
<b>EP080: BTEXN (QCLot: 1003965)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	105	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	96.5	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	97.9	72	124	
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	40 µg/L	97.4	72	130	
	106-42-3								
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	99.5	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	104	71	129	
<b>EP080: BTEXN (QCLot: 1003967)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	103	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	106	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	101	72	124	
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	40 µg/L	104	72	130	
	106-42-3								
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	105	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	100	71	129	
<b>EP080: BTEXN (QCLot: 1026375)</b>									
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	91.0	76	120	
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	94.1	76	124	
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	91.8	72	124	
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	40 µg/L	92.8	72	130	
	106-42-3								
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	94.5	78	128	
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	98.4	71	129	
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 1009431)</b>									
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.5 µg/L	101	70	130	
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.5 µg/L	100	70	130	
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.5 µg/L	95.0	70	130	
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.5 µg/L	99.4	70	130	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike	Spike Recovery (%)	Recovery Limits (%)	
					Concentration	LCS	Low	High
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 1009431) - continued</b>								
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.5 µg/L	97.4	70	130
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	105	70	130
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 1009431)</b>								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	2.5 µg/L	95.8	70	130
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	78.6	70	130
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	91.8	70	130
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	106	70	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	99.2	70	130
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	98.2	70	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	101	70	130
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	110	70	130
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	110	70	130
EP231X: Perfluorotridecanoic acid (PFTriDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	117	70	130
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	120	70	150
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 1009431)</b>								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	93.4	70	130
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	112	70	150
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	119	70	150
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	1.25 µg/L	109	70	150
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	110	70	150
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	98.0	70	130
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	105	70	130
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 1009431)</b>								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.5 µg/L	101	70	130
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.5 µg/L	103	70	130
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.5 µg/L	98.0	70	130
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.5 µg/L	108	70	130

### Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
				Concentration	MS	Low	High



Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 1004445)</b>							
EM1709401-003	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	91.0	70	130
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 1027436)</b>							
EM1709371-011	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70	130
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 1012553)</b>							
EM1709415-002	GW53_17/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	500 mg/L	94.6	70	130
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 1032270)</b>							
EM1709371-011	Anonymous	ED043: Total Oxidised Sulfur as SO4 2-	----	500 mg/L	106	70	130
<b>ED045G: Chloride by Discrete Analyser (QCLot: 1004444)</b>							
EM1709401-003	Anonymous	ED045G: Chloride	16887-00-6	400 mg/L	88.1	70	130
<b>ED045G: Chloride by Discrete Analyser (QCLot: 1027435)</b>							
EM1709371-011	Anonymous	ED045G: Chloride	16887-00-6	400 mg/L	102	70	130
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 1004424)</b>							
EM1709401-003	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	94.5	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	98.4	81	133
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	90.9	71	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	90.8	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	90.4	75	133
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	89.9	64	134
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	93.7	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	93.5	75	131
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 1026093)</b>							
EM1709415-011	GW32_17/07/17	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	109	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	97.1	81	133
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	96.7	71	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	87.9	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	96.4	75	133
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	# Not Determined	64	134
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	105	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	102	75	131
<b>EG020T: Total Metals by ICP-MS (QCLot: 1004427)</b>							
EM1709376-001	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	97.9	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	99.2	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	91.6	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	90.6	81	115



Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EG020T: Total Metals by ICP-MS (QCLot: 1004427) - continued</b>							
EM1709376-001	Anonymous	EG020A-T: Lead	7439-92-1	1 mg/L	93.9	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	89.5	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	91.3	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	91.2	74	116
<b>EG020T: Total Metals by ICP-MS (QCLot: 1004428)</b>							
EM1709415-010	GW14_17/07/17	EG020A-T: Arsenic	7440-38-2	1 mg/L	93.8	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	101	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	93.8	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	92.5	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	99.0	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	92.2	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	93.1	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	95.1	74	116
<b>EG020T: Total Metals by ICP-MS (QCLot: 1027626)</b>							
EM1709192-022	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	98.2	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	98.2	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	87.9	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	86.6	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	93.9	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	94.6	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	92.1	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	93.9	74	116
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 1004423)</b>							
EM1709405-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	89.8	70	120
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 1026092)</b>							
EM1709934-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	75.0	70	120
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1007149)</b>							
EM1709371-017	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	87.2	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1027923)</b>							
EM1709371-011	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	80.5	70	130
<b>EK040P: Fluoride by PC Titrator (QCLot: 1004135)</b>							
EM1709415-003	GW62_17/07/17	EK040P: Fluoride	16984-48-8	5 mg/L	94.8	70	130
<b>EK040P: Fluoride by PC Titrator (QCLot: 1027404)</b>							
EM1709371-012	Anonymous	EK040P: Fluoride	16984-48-8	5 mg/L	107	70	130
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 1004371)</b>							
EM1709415-002	GW53_17/07/17	EK055G: Ammonia as N	7664-41-7	1 mg/L	107	70	130



Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 1030195)</b>							
EM1709371-011	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	# Not Determined	70	130
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 1004447)</b>							
EM1709401-003	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	89.5	80	114
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 1027437)</b>							
EM1709371-011	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	90.7	80	114
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 1004370)</b>							
EM1709415-001	GW51_17/07/17	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	101	70	130
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 1030194)</b>							
EM1709371-011	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	97.1	70	130
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 1004446)</b>							
EM1709401-003	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	# Not Determined	79	123
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 1027438)</b>							
EM1709371-011	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	102	79	123
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1009832)</b>							
EM1709395-003	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	85.9	80	114
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1033529)</b>							
EM1709371-011	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	110	80	114
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1003964)</b>							
EM1709371-002	Anonymous	EP074-WF: Benzene	71-43-2	20 µg/L	113	76	128
		EP074-WF: Toluene	108-88-3	20 µg/L	95.4	72	132
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1026376)</b>							
EM1709371-011	Anonymous	EP074-WF: Benzene	71-43-2	20 µg/L	89.7	76	128
		EP074-WF: Toluene	108-88-3	20 µg/L	84.3	72	132
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1003964)</b>							
EM1709371-002	Anonymous	EP074-WF: 1,1-Dichloroethene	75-35-4	20 µg/L	102	63	129
		EP074-WF: Trichloroethene	79-01-6	20 µg/L	84.2	64	126
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1026376)</b>							
EM1709371-011	Anonymous	EP074-WF: 1,1-Dichloroethene	75-35-4	20 µg/L	86.7	63	129
		EP074-WF: Trichloroethene	79-01-6	20 µg/L	77.7	64	126
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 1003964)</b>							
EM1709371-002	Anonymous	EP074-WF: Chlorobenzene	108-90-7	20 µg/L	95.2	81	119
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 1026376)</b>							





Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 1026376) - continued</b>							
EM1709371-011	Anonymous	EP074-WF: Chlorobenzene	108-90-7	20 µg/L	86.6	81	119
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1004334)</b>							
EM1709390-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	5 µg/L	84.9	42	122
		EP075(SIM): Pyrene	129-00-0	5 µg/L	88.9	40	136
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1003965)</b>							
EM1709371-002	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	75.4	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1003967)</b>							
EM1709415-006	QC212_17/07/17	EP080: C6 - C9 Fraction	----	280 µg/L	86.5	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1026375)</b>							
EM1709371-011	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	62.5	43	125
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1003965)</b>							
EM1709371-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	74.0	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1003967)</b>							
EM1709415-006	QC212_17/07/17	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	84.4	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1026375)</b>							
EM1709371-011	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	62.2	44	122
<b>EP080: BTEXN (QCLot: 1003965)</b>							
EM1709371-002	Anonymous	EP080: Benzene	71-43-2	20 µg/L	111	68	130
		EP080: Toluene	108-88-3	20 µg/L	89.1	72	132
<b>EP080: BTEXN (QCLot: 1003967)</b>							
EM1709415-006	QC212_17/07/17	EP080: Benzene	71-43-2	20 µg/L	97.2	68	130
		EP080: Toluene	108-88-3	20 µg/L	100	72	132
<b>EP080: BTEXN (QCLot: 1026375)</b>							
EM1709371-011	Anonymous	EP080: Benzene	71-43-2	20 µg/L	85.3	68	130
		EP080: Toluene	108-88-3	20 µg/L	85.8	72	132
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 1009431)</b>							
EB1714774-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.5 µg/L	108	50	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.5 µg/L	105	50	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.5 µg/L	106	50	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.5 µg/L	111	50	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	114	50	130
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.5 µg/L	118	50	130
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 1009431)</b>							
EB1714774-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	107	50	130
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	74.6	50	130



Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 1009431) - continued</b>							
EB1714774-002	Anonymous	EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	104	50	130
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	112	50	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	108	50	130
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	115	50	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	107	50	130
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	119	50	130
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	112	50	130
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	116	50	130
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	128	50	150
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 1009431)</b>							
EB1714774-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	102	50	130
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	122	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	128	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	1.25 µg/L	122	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	116	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	123	50	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	120	50	130
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 1009431)</b>							
EB1714774-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.5 µg/L	110	50	130
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.5 µg/L	117	50	130
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.5 µg/L	115	50	130
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.5 µg/L	119	50	130

## QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM1709415	Page	: 1 of 17
Amendment	: 1		
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: MS AVERYLL COYNE	Telephone	: +61-3-8549 9608
Project	: 60537182	Date Samples Received	: 18-Jul-2017
Site	: ----	Issue Date	: 04-Aug-2017
Sampler	: BH, BP, JM	No. of samples received	: 13
Order number	: Task 3.2	No. of samples analysed	: 12

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

### Summary of Outliers

#### Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Laboratory Control outliers occur.
- Duplicate outliers exist - please see following pages for full details.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

#### Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

#### Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



**Outliers : Quality Control Samples**

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
<b>Duplicate (DUP) RPDs</b>							
ED037P: Alkalinity by PC Titrator	EM1709395--003	Anonymous	Carbonate Alkalinity as CaCO3	3812-32-6	29.4 %	0% - 20%	RPD exceeds LOR based limits
<b>Matrix Spike (MS) Recoveries</b>							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	EM1709371--011	Anonymous	Sulfate as SO4 - Turbidimetric	14808-79-8	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EG020F: Dissolved Metals by ICP-MS	EM1709415--011	GW32_17/07/17	Manganese	7439-96-5	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EK055G: Ammonia as N by Discrete Analyser	EM1709371--011	Anonymous	Ammonia as N	7664-41-7	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EK071G: Reactive Phosphorus as P by discrete analyser	EM1709401--003	Anonymous	Reactive Phosphorus as P	14265-44-2	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.

**Outliers : Analysis Holding Time Compliance**

Matrix: **WATER**

Method	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EA005P: pH by PC Titrator</b>						
Clear Plastic Bottle - Natural GW32_17/07/17	----	----	----	01-Aug-2017	17-Jul-2017	15
Clear Plastic Bottle - Natural GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	----	----	19-Jul-2017	17-Jul-2017	2
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>						
Clear Plastic Bottle - Natural GW32_17/07/17	----	----	----	01-Aug-2017	24-Jul-2017	8
<b>ED037P: Alkalinity by PC Titrator</b>						
Clear Plastic Bottle - Natural GW32_17/07/17	----	----	----	01-Aug-2017	31-Jul-2017	1
<b>EK057G: Nitrite as N by Discrete Analyser</b>						
Clear Plastic Bottle - Natural GW32_17/07/17	----	----	----	01-Aug-2017	19-Jul-2017	13
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>						



Matrix: **WATER**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EK071G: Reactive Phosphorus as P by discrete analyser - Analysis Holding Time Compliance</b>						
<b>Clear Plastic Bottle - Natural</b> GW32_17/07/17	----	----	----	01-Aug-2017	19-Jul-2017	13
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>						
<b>Amber VOC Vial - Sulfuric Acid</b> GW32_17/07/17	----	----	----	01-Aug-2017	31-Jul-2017	1
<b>EP074B: Oxygenated Compounds</b>						
<b>Amber VOC Vial - Sulfuric Acid</b> GW32_17/07/17	----	----	----	01-Aug-2017	31-Jul-2017	1
<b>EP074C: Sulfonated Compounds</b>						
<b>Amber VOC Vial - Sulfuric Acid</b> GW32_17/07/17	----	----	----	01-Aug-2017	31-Jul-2017	1
<b>EP074D: Fumigants</b>						
<b>Amber VOC Vial - Sulfuric Acid</b> GW32_17/07/17	----	----	----	01-Aug-2017	31-Jul-2017	1
<b>EP074E: Halogenated Aliphatic Compounds</b>						
<b>Amber VOC Vial - Sulfuric Acid</b> GW32_17/07/17	----	----	----	01-Aug-2017	31-Jul-2017	1
<b>EP074F: Halogenated Aromatic Compounds</b>						
<b>Amber VOC Vial - Sulfuric Acid</b> GW32_17/07/17	----	----	----	01-Aug-2017	31-Jul-2017	1
<b>EP074G: Trihalomethanes</b>						
<b>Amber VOC Vial - Sulfuric Acid</b> GW32_17/07/17	----	----	----	01-Aug-2017	31-Jul-2017	1
<b>EP074H: Naphthalene</b>						
<b>Amber VOC Vial - Sulfuric Acid</b> GW32_17/07/17	----	----	----	01-Aug-2017	31-Jul-2017	1
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>						
<b>Amber Glass Bottle - Unpreserved</b> GW32_17/07/17	01-Aug-2017	24-Jul-2017	8	----	----	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>						
<b>Amber Glass Bottle - Unpreserved</b> GW32_17/07/17	01-Aug-2017	24-Jul-2017	8	----	----	----
<b>Amber VOC Vial - Sulfuric Acid</b> GW32_17/07/17	----	----	----	01-Aug-2017	31-Jul-2017	1
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>						
<b>Amber Glass Bottle - Unpreserved</b> GW32_17/07/17	01-Aug-2017	24-Jul-2017	8	----	----	----
<b>Amber VOC Vial - Sulfuric Acid</b> GW32_17/07/17	----	----	----	01-Aug-2017	31-Jul-2017	1





Matrix: **WATER**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EP080: BTEXN</b>						
Amber VOC Vial - Sulfuric Acid GW32_17/07/17	----	----	----	01-Aug-2017	31-Jul-2017	1

### Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
<b>Laboratory Duplicates (DUP)</b>					
PAH/Phenols (GC/MS - SIM)	1	18	5.56	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	1	23	4.35	10.00	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>					
TRH - Semivolatile Fraction	0	23	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

### Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for **VOC in soils** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EA005P: pH by PC Titrator</b>							
Clear Plastic Bottle - Natural (EA005-P) GW32_17/07/17	17-Jul-2017	----	----	----	01-Aug-2017	17-Jul-2017	*
Clear Plastic Bottle - Natural (EA005-P) GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	19-Jul-2017	17-Jul-2017	*
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>							
Clear Plastic Bottle - Natural (EA015H) GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	19-Jul-2017	24-Jul-2017	✓
Clear Plastic Bottle - Natural (EA015H) GW32_17/07/17	17-Jul-2017	----	----	----	01-Aug-2017	24-Jul-2017	*



Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>ED037P: Alkalinity by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural (ED037-P)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	31-Jul-2017	✓
<b>Clear Plastic Bottle - Natural (ED037-P)</b> GW32_17/07/17		17-Jul-2017	----	----	----	01-Aug-2017	31-Jul-2017	*
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>								
<b>Clear Plastic Bottle - Natural (ED041G)</b> GW32_17/07/17		17-Jul-2017	----	----	----	01-Aug-2017	14-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (ED041G)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	14-Aug-2017	✓
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>								
<b>Clear Plastic Bottle - Natural (ED043)</b> GW32_17/07/17		17-Jul-2017	03-Aug-2017	14-Aug-2017	✓	04-Aug-2017	14-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (ED043)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	24-Jul-2017	14-Aug-2017	✓	24-Jul-2017	14-Aug-2017	✓
<b>ED045G: Chloride by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Natural (ED045G)</b> GW32_17/07/17		17-Jul-2017	----	----	----	01-Aug-2017	14-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (ED045G)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	14-Aug-2017	✓
<b>ED093F: Dissolved Major Cations</b>								
<b>Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)</b> GW32_17/07/17		17-Jul-2017	----	----	----	02-Aug-2017	14-Aug-2017	✓
<b>Clear Plastic Bottle - Nitric Acid; Filtered (ED093F)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	20-Jul-2017	14-Aug-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EG020F: Dissolved Metals by ICP-MS</b>							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) GW32_17/07/17	17-Jul-2017	----	----	----	01-Aug-2017	13-Jan-2018	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) GW51_17/07/17, GW53_17/07/17, GW62_17/07/17, GW48_17/07/17, GW10_17/07/17, GW14_17/07/17, GW26_17/07/17	17-Jul-2017	----	----	----	19-Jul-2017	13-Jan-2018	✓
<b>EG020T: Total Metals by ICP-MS</b>							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) GW32_17/07/17	17-Jul-2017	01-Aug-2017	13-Jan-2018	✓	02-Aug-2017	13-Jan-2018	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) GW51_17/07/17, GW53_17/07/17, GW62_17/07/17, GW48_17/07/17, QC211_17/07/17, QC212_17/07/17, GW10_17/07/17, GW14_17/07/17, GW26_17/07/17	17-Jul-2017	19-Jul-2017	13-Jan-2018	✓	19-Jul-2017	13-Jan-2018	✓
<b>EG035F: Dissolved Mercury by FIMS</b>							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) GW32_17/07/17	17-Jul-2017	----	----	----	02-Aug-2017	14-Aug-2017	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) GW51_17/07/17, GW53_17/07/17, GW62_17/07/17, GW48_17/07/17, GW10_17/07/17, GW14_17/07/17, GW26_17/07/17	17-Jul-2017	----	----	----	19-Jul-2017	14-Aug-2017	✓
<b>EG035T: Total Recoverable Mercury by FIMS</b>							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) GW32_17/07/17	17-Jul-2017	----	----	----	03-Aug-2017	14-Aug-2017	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) GW51_17/07/17, GW53_17/07/17, GW62_17/07/17, GW48_17/07/17, QC211_17/07/17, QC212_17/07/17, GW10_17/07/17, GW14_17/07/17, GW26_17/07/17	17-Jul-2017	----	----	----	20-Jul-2017	14-Aug-2017	✓
<b>EK040P: Fluoride by PC Titrator</b>							
Clear Plastic Bottle - Natural (EK040P) GW32_17/07/17	17-Jul-2017	----	----	----	01-Aug-2017	14-Aug-2017	✓
Clear Plastic Bottle - Natural (EK040P) GW51_17/07/17, GW53_17/07/17, GW62_17/07/17, GW48_17/07/17, GW10_17/07/17, GW14_17/07/17, GW26_17/07/17	17-Jul-2017	----	----	----	19-Jul-2017	14-Aug-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EK055G: Ammonia as N by Discrete Analyser</b>							
Clear Plastic Bottle - Sulfuric Acid (EK055G) GW32_17/07/17	17-Jul-2017	----	----	----	03-Aug-2017	14-Aug-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK055G) GW51_17/07/17, GW53_17/07/17, GW62_17/07/17, GW48_17/07/17, GW10_17/07/17, GW14_17/07/17, GW26_17/07/17	17-Jul-2017	----	----	----	19-Jul-2017	14-Aug-2017	✓
<b>EK057G: Nitrite as N by Discrete Analyser</b>							
Clear Plastic Bottle - Natural (EK057G) GW51_17/07/17, GW53_17/07/17, GW62_17/07/17, GW48_17/07/17, GW10_17/07/17, GW14_17/07/17, GW26_17/07/17	17-Jul-2017	----	----	----	19-Jul-2017	19-Jul-2017	✓
Clear Plastic Bottle - Natural (EK057G) GW32_17/07/17	17-Jul-2017	----	----	----	01-Aug-2017	19-Jul-2017	*
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>							
Clear Plastic Bottle - Sulfuric Acid (EK059G) GW32_17/07/17	17-Jul-2017	----	----	----	03-Aug-2017	14-Aug-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK059G) GW51_17/07/17, GW53_17/07/17, GW62_17/07/17, GW48_17/07/17, GW10_17/07/17, GW14_17/07/17, GW26_17/07/17	17-Jul-2017	----	----	----	19-Jul-2017	14-Aug-2017	✓
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>							
Clear Plastic Bottle - Natural (EK071G) GW51_17/07/17, GW53_17/07/17, GW62_17/07/17, GW48_17/07/17, GW10_17/07/17, GW14_17/07/17, GW26_17/07/17	17-Jul-2017	----	----	----	19-Jul-2017	19-Jul-2017	✓
Clear Plastic Bottle - Natural (EK071G) GW32_17/07/17	17-Jul-2017	----	----	----	01-Aug-2017	19-Jul-2017	*
<b>EP005: Total Organic Carbon (TOC)</b>							
Amber VOC Vial - Sulfuric Acid (EP005) GW32_17/07/17	17-Jul-2017	----	----	----	03-Aug-2017	14-Aug-2017	✓
Amber VOC Vial - Sulfuric Acid (EP005) GW51_17/07/17, GW53_17/07/17, GW62_17/07/17, GW48_17/07/17, GW10_17/07/17, GW14_17/07/17, GW26_17/07/17	17-Jul-2017	----	----	----	21-Jul-2017	14-Aug-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW32_17/07/17		17-Jul-2017	31-Jul-2017	31-Jul-2017	✓	01-Aug-2017	31-Jul-2017	*
<b>EP074B: Oxygenated Compounds</b>								
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW32_17/07/17		17-Jul-2017	31-Jul-2017	31-Jul-2017	✓	01-Aug-2017	31-Jul-2017	*
<b>EP074C: Sulfonated Compounds</b>								
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW32_17/07/17		17-Jul-2017	31-Jul-2017	31-Jul-2017	✓	01-Aug-2017	31-Jul-2017	*
<b>EP074D: Fumigants</b>								
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW32_17/07/17		17-Jul-2017	31-Jul-2017	31-Jul-2017	✓	01-Aug-2017	31-Jul-2017	*
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW32_17/07/17		17-Jul-2017	31-Jul-2017	31-Jul-2017	✓	01-Aug-2017	31-Jul-2017	*





Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP074F: Halogenated Aromatic Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW32_17/07/17		17-Jul-2017	31-Jul-2017	31-Jul-2017	✓	01-Aug-2017	31-Jul-2017	*
<b>EP074G: Trihalomethanes</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW32_17/07/17		17-Jul-2017	31-Jul-2017	31-Jul-2017	✓	01-Aug-2017	31-Jul-2017	*
<b>EP074H: Naphthalene</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW32_17/07/17		17-Jul-2017	31-Jul-2017	31-Jul-2017	✓	01-Aug-2017	31-Jul-2017	*
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>								
<b>Amber Glass Bottle - Unpreserved (EP075(SIM))</b> GW32_17/07/17		17-Jul-2017	01-Aug-2017	24-Jul-2017	*	01-Aug-2017	10-Sep-2017	✓
<b>Amber Glass Bottle - Unpreserved (EP075(SIM))</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	20-Jul-2017	24-Jul-2017	✓	20-Jul-2017	29-Aug-2017	✓



Matrix: **WATER** Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP080/071: Total Petroleum Hydrocarbons</b>							
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW32_17/07/17	17-Jul-2017	01-Aug-2017	24-Jul-2017	✘	01-Aug-2017	10-Sep-2017	✔
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW51_17/07/17, GW62_17/07/17, QC211_17/07/17, GW10_17/07/17, GW26_17/07/17 GW53_17/07/17, GW48_17/07/17, QC212_17/07/17, GW14_17/07/17	17-Jul-2017	20-Jul-2017	24-Jul-2017	✔	20-Jul-2017	29-Aug-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW51_17/07/17, GW62_17/07/17, QC211_17/07/17, QC213_17/07/17, GW10_17/07/17, GW26_17/07/17 GW53_17/07/17, GW48_17/07/17, QC212_17/07/17, QC214_17/07/17, GW14_17/07/17	17-Jul-2017	19-Jul-2017	31-Jul-2017	✔	19-Jul-2017	31-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW32_17/07/17	17-Jul-2017	31-Jul-2017	31-Jul-2017	✔	01-Aug-2017	31-Jul-2017	✘
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>							
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW32_17/07/17	17-Jul-2017	01-Aug-2017	24-Jul-2017	✘	01-Aug-2017	10-Sep-2017	✔
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW51_17/07/17, GW62_17/07/17, QC211_17/07/17, GW10_17/07/17, GW26_17/07/17 GW53_17/07/17, GW48_17/07/17, QC212_17/07/17, GW14_17/07/17	17-Jul-2017	20-Jul-2017	24-Jul-2017	✔	20-Jul-2017	29-Aug-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW51_17/07/17, GW62_17/07/17, QC211_17/07/17, QC213_17/07/17, GW10_17/07/17, GW26_17/07/17 GW53_17/07/17, GW48_17/07/17, QC212_17/07/17, QC214_17/07/17, GW14_17/07/17	17-Jul-2017	19-Jul-2017	31-Jul-2017	✔	19-Jul-2017	31-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW32_17/07/17	17-Jul-2017	31-Jul-2017	31-Jul-2017	✔	01-Aug-2017	31-Jul-2017	✘



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP080: BTEXN</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW51_17/07/17, GW62_17/07/17, QC211_17/07/17, QC213_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, QC212_17/07/17, QC214_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW32_17/07/17		17-Jul-2017	31-Jul-2017	31-Jul-2017	✓	01-Aug-2017	31-Jul-2017	*
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW51_17/07/17,	GW10_17/07/17	17-Jul-2017	----	----	----	23-Jul-2017	13-Jan-2018	✓
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW51_17/07/17,	GW10_17/07/17	17-Jul-2017	----	----	----	23-Jul-2017	13-Jan-2018	✓
<b>EP231C: Perfluoroalkyl Sulfonamides</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW51_17/07/17,	GW10_17/07/17	17-Jul-2017	----	----	----	23-Jul-2017	13-Jan-2018	✓
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW51_17/07/17,	GW10_17/07/17	17-Jul-2017	----	----	----	23-Jul-2017	13-Jan-2018	✓
<b>EP231P: PFAS Sums</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW51_17/07/17,	GW10_17/07/17	17-Jul-2017	----	----	----	23-Jul-2017	13-Jan-2018	✓



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Laboratory Duplicates (DUP)</b>							
Alkalinity by PC Titrator	ED037-P	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	3	27	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	4	31	12.90	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	4	26	15.38	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	4	30	13.33	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	2	18	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	3	14	21.43	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	18	5.56	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	17	11.76	10.00	✔	NEPM 2013 B3 & ALS QC Standard
pH by PC Titrator	EA005-P	6	52	11.54	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	3	27	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	4	32	12.50	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	31	12.90	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	5	41	12.20	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	4	36	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	3	17	17.65	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	23	4.35	10.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	6	55	10.91	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	3	26	11.54	10.00	✔	NEPM 2013 B3 & ALS QC Standard
<b>Laboratory Control Samples (LCS)</b>							
Alkalinity by PC Titrator	ED037-P	3	60	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	27	7.41	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	4	31	12.90	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	26	7.69	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	30	6.67	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	2	18	11.11	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	14	14.29	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	2	18	11.11	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	5.88	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	27	7.41	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard



Matrix: **WATER** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Control Samples (LCS) - Continued</b>							
Total Dissolved Solids (High Level)	EA015H	4	32	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	31	6.45	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	3	41	7.32	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	36	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	2	17	11.76	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	55	5.45	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
<b>Method Blanks (MB)</b>							
Ammonia as N by Discrete analyser	EK055G	2	27	7.41	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	31	6.45	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	30	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	2	18	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	14	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	2	18	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	27	7.41	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	32	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	31	6.45	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	3	41	7.32	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	36	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	2	17	11.76	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	55	5.45	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>							
Ammonia as N by Discrete analyser	EK055G	2	27	7.41	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	31	6.45	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	30	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	2	18	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	27	7.41	5.00	✓	NEPM 2013 B3 & ALS QC Standard





Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Matrix Spikes (MS) - Continued</b>							
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	31	6.45	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	3	41	7.32	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	36	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	2	17	11.76	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	23	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	55	5.45	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	2	26	7.69	5.00	✔	NEPM 2013 B3 & ALS QC Standard



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by PC Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of 'filterable' residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM (2013) Schedule B(3)
Alkalinity by PC Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM (2013) Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Oxidised Sulfur as SO4 2-	ED043	WATER	In house: The sample is treated with Peroxide to convert all Sulfur species to Sulfate. Sulfate in the sample can then be determined by ICPAES and reported as TOS as SO4 2-.
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm APHA 21st edition seal method 2 017-1-L april 2003
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM (2013) Schedule B(3)  Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM (2013) Schedule B(3)  Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM (2013) Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.



Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Fluoride by PC Titrator	EK040P	WATER	In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3)
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO2- B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined separately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite and Nitrate as N (NO <sub>x</sub> ) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO <sub>2</sub> +NO <sub>3</sub> ) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with orthophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM (2013) Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Volatile Organic Compounds WF Detection Limits	EP074-WF	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)



<i>Analytical Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with methanol. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers.
<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Total Oxidisable Sulfur as SO4 2- Prep	ED043-PR	WATER	In house
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (2013) Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

## CERTIFICATE OF ANALYSIS

<b>Work Order</b>	<b>: EM1709415</b>	<b>Page</b>	: 1 of 26
<b>Amendment</b>	<b>: 2</b>	<b>Laboratory</b>	: Environmental Division Melbourne
<b>Client</b>	: <b>AECOM Australia Pty Ltd</b>	<b>Contact</b>	: Carol Walsh
<b>Contact</b>	: MS AVERYLL COYNE	<b>Address</b>	: 4 Westall Rd Springvale VIC Australia 3171
<b>Address</b>	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	<b>Telephone</b>	: +61-3-8549 9608
<b>Telephone</b>	: +61 03 9653 1234	<b>Date Samples Received</b>	: 18-Jul-2017 14:00
<b>Project</b>	: 60537182	<b>Date Analysis Commenced</b>	: 19-Jul-2017
<b>Order number</b>	: Task 3.2	<b>Issue Date</b>	: 11-Aug-2017 17:09
<b>C-O-C number</b>	: ----		
<b>Sampler</b>	: BH, BP, JM		
<b>Site</b>	: ----		
<b>Quote number</b>	: ME/199/16		
<b>No. of samples received</b>	: 13		
<b>No. of samples analysed</b>	: 13		



Accreditation No. 825  
Accredited for compliance with  
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

**Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.**

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	Senior Semivolatile Instrument Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC





## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
LOR = Limit of reporting  
^ = This result is computed from individual analyte detections at or above the level of reporting  
ø = ALS is not NATA accredited for these tests.  
~ = Indicates an estimated value.

- TDS by method EA-015 for EM1709415 #2,4,10,12 high due to the presence of fine particulate matter, which may pass through the prescribed GF/C paper.
- ED037-P: EM1709395 #3 Poor duplicate precision for Carbonate Alkalinity as CaCO<sub>3</sub> due to sample heterogeneity. Confirmed by re-analysis.
- EK057G: Results for EM1709415-002 have been confirmed by re-preparation and re-analysis.
- ED093F:EM1709415\_011 has been confirmed for major cations by re-preparation and re-analysis.
- ED041G & ED045G: Results for EM1709415-011 have been confirmed by re-preparation and re-analysis.
- Amendment (07/08/2017): This report has been amended and re-released to allow the reporting of additional analytical data.
- Amendment (31/07/2017): This report has been amended and re-released to allow the reporting of additional analytical data.
- EP074-WF: Particular sample EM1709415\_11 required dilution due to the presence of high level contaminants. LOR values have been adjusted accordingly.
- EP075(SIM): Particular sample (EM1709415\_011) required dilution due to the presence of high level contaminants. LOR values have been adjusted accordingly.
- Ionic balances were calculated using: major anions - chloride, alkalinity and sulfate; and major cations - calcium, magnesium, potassium and sodium.
- ED045G: The presence of thiocyanate can positively contribute to the chloride result, thereby may bias results higher than expected. Results should be scrutinised accordingly.
- EG035T: EM1709415-011 sample results for total mercury confirmed by re-extraction and re-analysis.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW51_17/07/17	GW53_17/07/17	GW62_17/07/17	GW48_17/07/17	QC211_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-001	EM1709415-002	EM1709415-003	EM1709415-004	EM1709415-005	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.53	6.89	7.37	6.64	----	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	2260	1170	3230	1380	----	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	<1	<1	----	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	<1	<1	----	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	327	371	188	271	----	
Total Alkalinity as CaCO3	----	1	mg/L	327	371	188	271	----	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	213	320	243	393	----	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	442	710	326	657	----	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	1080	91	1510	124	----	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	78	90	299	86	----	
Magnesium	7439-95-4	1	mg/L	62	38	75	52	----	
Sodium	7440-23-5	1	mg/L	692	188	638	180	----	
Potassium	7440-09-7	1	mg/L	25	10	30	7	----	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.04	0.46	<0.01	0.52	----	
Arsenic	7440-38-2	0.001	mg/L	0.003	0.009	0.001	0.005	----	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----	
Chromium	7440-47-3	0.001	mg/L	0.002	0.007	<0.001	0.003	----	
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	0.001	----	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	----	
Manganese	7439-96-5	0.001	mg/L	0.025	0.078	0.125	0.044	----	
Nickel	7440-02-0	0.001	mg/L	0.014	0.024	0.018	0.031	----	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	----	
Zinc	7440-66-6	0.005	mg/L	0.005	0.013	0.006	0.009	----	
Iron	7439-89-6	0.05	mg/L	1.64	2.25	0.32	5.66	----	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	10.0	14.9	11.6	30.8	<0.01	
Arsenic	7440-38-2	0.001	mg/L	0.018	0.030	0.022	0.034	<0.001	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW51_17/07/17	GW53_17/07/17	GW62_17/07/17	GW48_17/07/17	QC211_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-001	EM1709415-002	EM1709415-003	EM1709415-004	EM1709415-005	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	0.0001	0.0001	<0.0001	0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	0.028	0.052	0.026	0.090	<0.001	
Copper	7440-50-8	0.001	mg/L	0.008	0.008	0.008	0.019	<0.001	
Nickel	7440-02-0	0.001	mg/L	0.026	0.042	0.031	0.063	<0.001	
Lead	7439-92-1	0.001	mg/L	0.011	0.013	0.013	0.020	<0.001	
Zinc	7440-66-6	0.005	mg/L	0.096	0.054	0.030	0.089	<0.005	
Manganese	7439-96-5	0.001	mg/L	0.054	0.102	0.168	0.096	----	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	13.8	13.9	19.8	37.5	<0.05	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.5	0.2	0.7	0.2	----	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	0.33	1.23	0.26	0.91	----	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.02	<0.01	0.03	----	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	0.01	0.02	1.39	----	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.03	0.02	1.42	----	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.07	0.02	<0.01	<0.01	----	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	41.4	16.6	51.4	17.1	----	
Total Cations	----	0.01	meq/L	39.7	16.0	49.6	16.6	----	
Ionic Balance	----	0.01	%	2.09	1.80	1.78	1.53	----	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	14	47	5	36	----	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW51_17/07/17	GW53_17/07/17	GW62_17/07/17	GW48_17/07/17	QC211_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-001	EM1709415-002	EM1709415-003	EM1709415-004	EM1709415-005	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	<1	<1	<1	<1	----	
Ethylbenzene	100-41-4	1	µg/L	<1	<1	<1	<1	----	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	<1	<1	<1	----	
Styrene	100-42-5	1	µg/L	<1	<1	<1	<1	----	
ortho-Xylene	95-47-6	1	µg/L	<1	<1	<1	<1	----	
Isopropylbenzene	98-82-8	1	µg/L	<1	<1	<1	<1	----	
n-Propylbenzene	103-65-1	1	µg/L	<1	<1	<1	<1	----	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	<1	<1	----	
sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	<1	<1	----	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	<1	<1	----	
tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	<1	<1	----	
p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	<1	<1	----	
n-Butylbenzene	104-51-8	1	µg/L	<1	<1	<1	<1	----	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	<10	<10	----	
Vinyl Acetate	108-05-4	10	µg/L	<10	<10	<10	<10	----	
2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	<10	<10	----	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	<10	<10	----	
2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	<10	<10	----	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<1	<1	<1	<1	----	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	<1	<1	----	
1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	<1	<1	----	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	<2	<2	----	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	<2	<2	----	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	<1	<1	----	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	<10	<10	----	
Chloromethane	74-87-3	10	µg/L	<10	<10	<10	<10	----	
Vinyl chloride	75-01-4	10	µg/L	<10.0	<10.0	<10.0	<10.0	----	
Bromomethane	74-83-9	10	µg/L	<10	<10	<10	<10	----	
Chloroethane	75-00-3	10	µg/L	<10	<10	<10	<10	----	
Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	<10	<10	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW51_17/07/17	GW53_17/07/17	GW62_17/07/17	GW48_17/07/17	QC211_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-001	EM1709415-002	EM1709415-003	EM1709415-004	EM1709415-005	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	<1	<1	----	
Iodomethane	74-88-4	1	µg/L	<1	<1	<1	<1	----	
Methylene chloride	75-09-2	4	µg/L	<4	<4	<4	<4	----	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	1	<1	----	
1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	<1	<1	----	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	8	<1	2	<1	----	
1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	<1	<1	----	
1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	<1	<1	----	
Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	<1	<1	----	
1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	<1	<1	----	
Trichloroethene	79-01-6	1	µg/L	<1	<1	<1	<1	----	
Dibromomethane	74-95-3	1	µg/L	<1	<1	<1	<1	----	
1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	<1	<1	----	
1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	<1	<1	----	
Tetrachloroethene	127-18-4	1	µg/L	<1	<1	<1	<1	----	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	<1	<1	----	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	<1	<1	----	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	<1	<1	----	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	<1	<1	----	
1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	<1	<1	----	
Pentachloroethane	76-01-7	1	µg/L	<1	<1	<1	<1	----	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	<1	<1	----	
Hexachlorobutadiene	87-68-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<1	<1	<1	<1	----	
Bromobenzene	108-86-1	1	µg/L	<1	<1	<1	<1	----	
2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	<1	<1	----	
4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	<1	<1	----	
1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	<1	<1	----	
1,4-Dichlorobenzene	106-46-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	<1	<1	----	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	<1	<1	----	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	<1	<1	----	
<b>EP074G: Trihalomethanes</b>									





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW51_17/07/17	GW53_17/07/17	GW62_17/07/17	GW48_17/07/17	QC211_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-001	EM1709415-002	EM1709415-003	EM1709415-004	EM1709415-005	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	<1	<1	<1	<1	----	
Bromodichloromethane	75-27-4	1	µg/L	<1	<1	<1	<1	----	
Dibromochloromethane	124-48-1	1	µg/L	<1	<1	<1	<1	----	
Bromoform	75-25-2	1	µg/L	<1	<1	<1	<1	----	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Fluorene	86-73-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Anthracene	120-12-7	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Pyrene	129-00-0	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Chrysene	218-01-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	<1.0	<1.0	----	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	<50	<50	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW51_17/07/17	GW53_17/07/17	GW62_17/07/17	GW48_17/07/17	QC211_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-001	EM1709415-002	EM1709415-003	EM1709415-004	EM1709415-005	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	----	----	----	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	----	----	----	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.05	----	----	----	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	----	----	----	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.01	----	----	----	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	----	----	----	----	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	----	----	----	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	----	----	----	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	----	----	----	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	----	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW51_17/07/17	GW53_17/07/17	GW62_17/07/17	GW48_17/07/17	QC211_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-001	EM1709415-002	EM1709415-003	EM1709415-004	EM1709415-005	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	----	----	----	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	----	----	----	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	----	----	----	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	----	----	----	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	----	----	----	----	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	----	----	----	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	----	----	----	----	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	----	----	----	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	----	----	----	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	----	----	----	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	----	----	----	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	----	----	----	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	----	----	----	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	----	----	----	----	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	----	----	----	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	----	----	----	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	----	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW51_17/07/17	GW53_17/07/17	GW62_17/07/17	GW48_17/07/17	QC211_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-001	EM1709415-002	EM1709415-003	EM1709415-004	EM1709415-005	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	----	----	----	----	----
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	0.06	----	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	0.06	----	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L	0.06	----	----	----	----	----
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	99.6	101	95.7	98.0	----	----
Toluene-D8	2037-26-5	1	%	106	108	100	102	----	----
4-Bromofluorobenzene	460-00-4	1	%	102	99.1	99.8	100	----	----
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	29.0	26.5	30.2	27.3	----	----
2-Chlorophenol-D4	93951-73-6	1	%	81.8	73.9	86.4	74.2	----	----
2,4,6-Tribromophenol	118-79-6	1	%	70.3	68.4	76.8	69.7	----	----
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	75.2	66.8	80.5	74.3	----	----
Anthracene-d10	1719-06-8	1	%	88.3	78.6	90.7	79.2	----	----
4-Terphenyl-d14	1718-51-0	1	%	92.4	78.2	93.3	83.0	----	----
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	103	105	99.6	102	101	101
Toluene-D8	2037-26-5	2	%	97.3	99.1	91.6	92.7	98.3	98.3
4-Bromofluorobenzene	460-00-4	2	%	98.9	97.5	99.8	98.0	102	102
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	94.3	----	----	----	----	----



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC212_17/07/17	QC213_17/07/17	QC214_17/07/17	GW10_17/07/17	GW14_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-006	EM1709415-007	EM1709415-008	EM1709415-009	EM1709415-010	
				Result	Result	Result	Result	Result	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	----	----	----	6.65	6.46	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	----	----	----	462	392	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	----	----	----	<1	<1	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	----	----	----	<1	<1	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	----	----	----	234	59	
Total Alkalinity as CaCO3	----	1	mg/L	----	----	----	234	59	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	----	----	----	102	8	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	----	----	----	154	<10	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	----	----	----	24	11	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	----	----	----	67	16	
Magnesium	7439-95-4	1	mg/L	----	----	----	21	3	
Sodium	7440-23-5	1	mg/L	----	----	----	42	12	
Potassium	7440-09-7	1	mg/L	----	----	----	8	2	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	----	----	----	0.08	0.63	
Arsenic	7440-38-2	0.001	mg/L	----	----	----	0.006	0.004	
Cadmium	7440-43-9	0.0001	mg/L	----	----	----	<0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	----	----	----	0.003	<0.001	
Copper	7440-50-8	0.001	mg/L	----	----	----	0.002	0.002	
Lead	7439-92-1	0.001	mg/L	----	----	----	0.001	<0.001	
Manganese	7439-96-5	0.001	mg/L	----	----	----	0.020	<0.001	
Nickel	7440-02-0	0.001	mg/L	----	----	----	0.023	0.004	
Selenium	7782-49-2	0.01	mg/L	----	----	----	<0.01	<0.01	
Zinc	7440-66-6	0.005	mg/L	----	----	----	0.028	0.024	
Iron	7439-89-6	0.05	mg/L	----	----	----	1.16	0.17	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	<0.01	----	----	7.72	17.7	
Arsenic	7440-38-2	0.001	mg/L	<0.001	----	----	0.034	0.015	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC212_17/07/17	QC213_17/07/17	QC214_17/07/17	GW10_17/07/17	GW14_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-006	EM1709415-007	EM1709415-008	EM1709415-009	EM1709415-010	
				Result	Result	Result	Result	Result	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	----	----	0.0001	<0.0001	
Chromium	7440-47-3	0.001	mg/L	<0.001	----	----	0.029	0.022	
Copper	7440-50-8	0.001	mg/L	<0.001	----	----	0.032	0.013	
Nickel	7440-02-0	0.001	mg/L	<0.001	----	----	0.037	0.015	
Lead	7439-92-1	0.001	mg/L	<0.001	----	----	0.066	0.013	
Zinc	7440-66-6	0.005	mg/L	<0.005	----	----	0.166	0.066	
Manganese	7439-96-5	0.001	mg/L	----	----	----	0.034	0.014	
Selenium	7782-49-2	0.01	mg/L	<0.01	----	----	<0.01	<0.01	
Iron	7439-89-6	0.05	mg/L	<0.05	----	----	11.3	7.66	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	----	----	----	<0.0001	<0.0001	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	----	----	<0.0001	<0.0001	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	----	----	----	0.4	0.6	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	----	----	----	0.07	0.02	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	----	----	----	<0.01	<0.01	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	----	----	----	<0.01	0.01	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	----	----	----	<0.01	0.01	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	----	----	----	<0.01	0.19	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	----	----	----	7.48	1.66	
Total Cations	----	0.01	meq/L	----	----	----	7.10	1.62	
Ionic Balance	----	0.01	%	----	----	----	2.56	1.14	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	----	----	----	11	4	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	----	----	----	<1	<1	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC212_17/07/17	QC213_17/07/17	QC214_17/07/17	GW10_17/07/17	GW14_17/07/17
Client sampling date / time					17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709415-006	EM1709415-007	EM1709415-008	EM1709415-009	EM1709415-010	
				Result	Result	Result	Result	Result	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	----	----	----	<1	<1	
Ethylbenzene	100-41-4	1	µg/L	----	----	----	<1	<1	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	----	----	----	<1	<1	
Styrene	100-42-5	1	µg/L	----	----	----	<1	<1	
ortho-Xylene	95-47-6	1	µg/L	----	----	----	<1	<1	
Isopropylbenzene	98-82-8	1	µg/L	----	----	----	<1	<1	
n-Propylbenzene	103-65-1	1	µg/L	----	----	----	<1	<1	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	----	----	----	<1	<1	
sec-Butylbenzene	135-98-8	1	µg/L	----	----	----	<1	<1	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	----	----	----	<1	<1	
tert-Butylbenzene	98-06-6	1	µg/L	----	----	----	<1	<1	
p-Isopropyltoluene	99-87-6	1	µg/L	----	----	----	<1	<1	
n-Butylbenzene	104-51-8	1	µg/L	----	----	----	<1	<1	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	----	----	----	<10	<10	
Vinyl Acetate	108-05-4	10	µg/L	----	----	----	<10	<10	
2-Butanone (MEK)	78-93-3	10	µg/L	----	----	----	<10	<10	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	----	----	----	<10	<10	
2-Hexanone (MBK)	591-78-6	10	µg/L	----	----	----	<10	<10	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	----	----	----	<1	<1	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	----	----	----	<1	<1	
1,2-Dichloropropane	78-87-5	1	µg/L	----	----	----	<1	<1	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	----	----	----	<2	<2	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	----	----	----	<2	<2	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	----	----	----	<1	<1	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	----	----	----	<10	<10	
Chloromethane	74-87-3	10	µg/L	----	----	----	<10	<10	
Vinyl chloride	75-01-4	10	µg/L	----	----	----	<10.0	<10.0	
Bromomethane	74-83-9	10	µg/L	----	----	----	<10	<10	
Chloroethane	75-00-3	10	µg/L	----	----	----	<10	<10	
Trichlorofluoromethane	75-69-4	10	µg/L	----	----	----	<10	<10	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC212_17/07/17	QC213_17/07/17	QC214_17/07/17	GW10_17/07/17	GW14_17/07/17
Client sampling date / time					17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709415-006	EM1709415-007	EM1709415-008	EM1709415-009	EM1709415-010	
				Result	Result	Result	Result	Result	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
1,1-Dichloroethene	75-35-4	1	µg/L	----	----	----	<1	<1	
Iodomethane	74-88-4	1	µg/L	----	----	----	<1	<1	
Methylene chloride	75-09-2	4	µg/L	----	----	----	<4	<4	
trans-1,2-Dichloroethene	156-60-5	1	µg/L	----	----	----	<1	<1	
1,1-Dichloroethane	75-34-3	1	µg/L	----	----	----	<1	<1	
cis-1,2-Dichloroethene	156-59-2	1	µg/L	----	----	----	<1	<1	
1,1,1-Trichloroethane	71-55-6	1	µg/L	----	----	----	<1	<1	
1,1-Dichloropropylene	563-58-6	1	µg/L	----	----	----	<1	<1	
Carbon Tetrachloride	56-23-5	1	µg/L	----	----	----	<1	<1	
1,2-Dichloroethane	107-06-2	1	µg/L	----	----	----	<1	<1	
Trichloroethene	79-01-6	1	µg/L	----	----	----	<1	<1	
Dibromomethane	74-95-3	1	µg/L	----	----	----	<1	<1	
1,1,2-Trichloroethane	79-00-5	1	µg/L	----	----	----	<1	<1	
1,3-Dichloropropane	142-28-9	1	µg/L	----	----	----	<1	<1	
Tetrachloroethene	127-18-4	1	µg/L	----	----	----	<1	<1	
1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	----	----	----	<1	<1	
trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	----	----	----	<1	<1	
cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	----	----	----	<1	<1	
1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	----	----	----	<1	<1	
1,2,3-Trichloropropane	96-18-4	1	µg/L	----	----	----	<1	<1	
Pentachloroethane	76-01-7	1	µg/L	----	----	----	<1	<1	
1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	----	----	----	<1	<1	
Hexachlorobutadiene	87-68-3	1	µg/L	----	----	----	<1.0	<1.0	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	----	----	----	<1	<1	
Bromobenzene	108-86-1	1	µg/L	----	----	----	<1	<1	
2-Chlorotoluene	95-49-8	1	µg/L	----	----	----	<1	<1	
4-Chlorotoluene	106-43-4	1	µg/L	----	----	----	<1	<1	
1,3-Dichlorobenzene	541-73-1	1	µg/L	----	----	----	<1	<1	
1,4-Dichlorobenzene	106-46-7	1	µg/L	----	----	----	<1.0	<1.0	
1,2-Dichlorobenzene	95-50-1	1	µg/L	----	----	----	<1	<1	
1,2,4-Trichlorobenzene	120-82-1	1	µg/L	----	----	----	<1	<1	
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	----	----	----	<1	<1	
<b>EP074G: Trihalomethanes</b>									



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC212_17/07/17	QC213_17/07/17	QC214_17/07/17	GW10_17/07/17	GW14_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-006	EM1709415-007	EM1709415-008	EM1709415-009	EM1709415-010	
				Result	Result	Result	Result	Result	
<b>EP074G: Trihalomethanes - Continued</b>									
Chloroform	67-66-3	1	µg/L	----	----	----	<1	2	
Bromodichloromethane	75-27-4	1	µg/L	----	----	----	<1	<1	
Dibromochloromethane	124-48-1	1	µg/L	----	----	----	<1	<1	
Bromoform	75-25-2	1	µg/L	----	----	----	<1	<1	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	----	----	----	<5	<5	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	----	----	----	<1.0	<1.0	
Acenaphthylene	208-96-8	1	µg/L	----	----	----	<1.0	<1.0	
Acenaphthene	83-32-9	1	µg/L	----	----	----	<1.0	<1.0	
Fluorene	86-73-7	1	µg/L	----	----	----	<1.0	<1.0	
Phenanthrene	85-01-8	1	µg/L	----	----	----	<1.0	<1.0	
Anthracene	120-12-7	1	µg/L	----	----	----	<1.0	<1.0	
Fluoranthene	206-44-0	1	µg/L	----	----	----	<1.0	<1.0	
Pyrene	129-00-0	1	µg/L	----	----	----	<1.0	<1.0	
Benzo(a)anthracene	56-55-3	1	µg/L	----	----	----	<1.0	<1.0	
Chrysene	218-01-9	1	µg/L	----	----	----	<1.0	<1.0	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	----	----	----	<1.0	<1.0	
Benzo(k)fluoranthene	207-08-9	1	µg/L	----	----	----	<1.0	<1.0	
Benzo(a)pyrene	50-32-8	0.5	µg/L	----	----	----	<0.5	<0.5	
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	----	----	----	<1.0	<1.0	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	----	----	----	<1.0	<1.0	
Benzo(g,h,i)perylene	191-24-2	1	µg/L	----	----	----	<1.0	<1.0	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	----	----	----	<0.5	<0.5	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	----	----	----	<0.5	<0.5	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20	
C10 - C14 Fraction	----	50	µg/L	<50	----	----	<50	<50	
C15 - C28 Fraction	----	100	µg/L	<100	----	----	<100	<100	
C29 - C36 Fraction	----	50	µg/L	<50	----	----	<50	<50	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	<50	<50	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	<20	<20	<20	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC212_17/07/17	QC213_17/07/17	QC214_17/07/17	GW10_17/07/17	GW14_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-006	EM1709415-007	EM1709415-008	EM1709415-009	EM1709415-010	
				Result	Result	Result	Result	Result	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued</b>									
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	<20	<20	<20	<20	
>C10 - C16 Fraction	----	100	µg/L	<100	----	----	<100	<100	
>C16 - C34 Fraction	----	100	µg/L	<100	----	----	<100	<100	
>C34 - C40 Fraction	----	100	µg/L	<100	----	----	<100	<100	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	----	----	<100	<100	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	----	----	<100	<100	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<1	<1	<1	<1	<1	
Toluene	108-88-3	2	µg/L	<2	<2	<2	<2	<2	
Ethylbenzene	100-41-4	2	µg/L	<2	<2	<2	<2	<2	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	<2	<2	<2	
ortho-Xylene	95-47-6	2	µg/L	<2	<2	<2	<2	<2	
^ Total Xylenes	1330-20-7	2	µg/L	<2	<2	<2	<2	<2	
^ Sum of BTEX	----	1	µg/L	<1	<1	<1	<1	<1	
Naphthalene	91-20-3	5	µg/L	<5	<5	<5	<5	<5	
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	----	----	----	0.07	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	----	----	----	<0.02	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	----	----	----	0.04	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	----	----	----	<0.02	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	----	----	----	0.04	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	----	----	----	<0.02	----	
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	----	----	----	<0.1	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	----	----	----	<0.02	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	----	----	----	<0.02	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	----	----	----	<0.02	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC212_17/07/17	QC213_17/07/17	QC214_17/07/17	GW10_17/07/17	GW14_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00
Compound	CAS Number	LOR	Unit	EM1709415-006	EM1709415-007	EM1709415-008	EM1709415-009	EM1709415-010	
				Result	Result	Result	Result	Result	
<b>EP231B: Perfluoroalkyl Carboxylic Acids - Continued</b>									
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	----	----	----	<0.01	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	----	----	----	<0.02	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	----	----	----	<0.02	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	----	----	----	<0.02	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	----	----	----	<0.02	----	
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	----	----	----	<0.02	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	----	----	----	<0.05	----	
<b>EP231C: Perfluoroalkyl Sulfonamides</b>									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	----	----	----	<0.02	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	----	----	----	<0.05	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	----	----	----	<0.05	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	----	----	----	<0.05	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	----	----	----	<0.05	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	----	----	----	<0.02	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	----	----	----	<0.02	----	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	----	----	----	<0.05	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	----	----	----	<0.05	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	----	----	----	<0.05	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC212_17/07/17	QC213_17/07/17	QC214_17/07/17	GW10_17/07/17	GW14_17/07/17
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	
Compound	CAS Number	LOR	Unit	EM1709415-006	EM1709415-007	EM1709415-008	EM1709415-009	EM1709415-010	
				Result	Result	Result	Result	Result	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued</b>									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	----	----	----	<0.05	----	
<b>EP231P: PFAS Sums</b>									
Sum of PFAS	----	0.01	µg/L	----	----	----	0.15	----	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L	----	----	----	0.08	----	
Sum of PFAS (WA DER List)	----	0.01	µg/L	----	----	----	0.15	----	
<b>EP074S: VOC Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	----	----	----	99.7	95.9	
Toluene-D8	2037-26-5	1	%	----	----	----	105	103	
4-Bromofluorobenzene	460-00-4	1	%	----	----	----	99.5	100	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	----	----	----	28.3	33.2	
2-Chlorophenol-D4	93951-73-6	1	%	----	----	----	85.3	88.9	
2,4,6-Tribromophenol	118-79-6	1	%	----	----	----	75.5	75.8	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	----	----	----	79.4	86.6	
Anthracene-d10	1719-06-8	1	%	----	----	----	90.8	96.6	
4-Terphenyl-d14	1718-51-0	1	%	----	----	----	92.2	102	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	102	101	98.4	104	99.7	
Toluene-D8	2037-26-5	2	%	99.9	100	97.6	95.8	94.5	
4-Bromofluorobenzene	460-00-4	2	%	103	98.2	100	98.9	98.9	
<b>EP231S: PFAS Surrogate</b>									
13C4-PFOS	----	0.02	%	----	----	----	93.7	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW32_17/07/17	GW26_17/07/17	QC116_17/07/17	----	----
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	----	----	
Compound	CAS Number	LOR	Unit	EM1709415-011	EM1709415-012	EM1709415-013	-----	-----	
				Result	Result	Result	----	----	
<b>EA005P: pH by PC Titrator</b>									
pH Value	----	0.01	pH Unit	7.34	6.63	----	----	----	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>									
Total Dissolved Solids @180°C	----	10	mg/L	4560	1360	----	----	----	
<b>ED037P: Alkalinity by PC Titrator</b>									
Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	----	----	----	
Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	----	----	----	
Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	868	105	----	----	----	
Total Alkalinity as CaCO3	----	1	mg/L	868	105	----	----	----	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>									
Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	666	761	----	----	----	
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>									
Total Oxidised Sulfur as SO4 2-	----	1	mg/L	1060	818	----	----	----	
<b>ED045G: Chloride by Discrete Analyser</b>									
Chloride	16887-00-6	1	mg/L	1740	15	----	----	----	
<b>ED093F: Dissolved Major Cations</b>									
Calcium	7440-70-2	1	mg/L	613	298	----	----	----	
Magnesium	7439-95-4	1	mg/L	168	24	----	----	----	
Sodium	7440-23-5	1	mg/L	716	26	----	----	----	
Potassium	7440-09-7	1	mg/L	36	7	----	----	----	
<b>EG020F: Dissolved Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	<0.01	0.02	<0.01	----	----	
Arsenic	7440-38-2	0.001	mg/L	<0.001	0.002	<0.001	----	----	
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0007	<0.0001	----	----	
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	----	----	
Copper	7440-50-8	0.001	mg/L	<0.001	0.001	<0.001	----	----	
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----	
Manganese	7439-96-5	0.001	mg/L	1.49	0.340	----	----	----	
Nickel	7440-02-0	0.001	mg/L	<0.001	0.048	<0.001	----	----	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	----	----	
Zinc	7440-66-6	0.005	mg/L	0.006	0.803	<0.005	----	----	
Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	<0.05	----	----	
<b>EG020T: Total Metals by ICP-MS</b>									
Aluminium	7429-90-5	0.01	mg/L	0.15	16.5	<0.01	----	----	
Arsenic	7440-38-2	0.001	mg/L	<0.001	0.265	<0.001	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW32_17/07/17	GW26_17/07/17	QC116_17/07/17	----	----
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	----	----	
Compound	CAS Number	LOR	Unit	EM1709415-011	EM1709415-012	EM1709415-013	-----	-----	
				Result	Result	Result	----	----	
<b>EG020T: Total Metals by ICP-MS - Continued</b>									
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.0021	<0.0001	----	----	
Chromium	7440-47-3	0.001	mg/L	0.002	0.036	<0.001	----	----	
Copper	7440-50-8	0.001	mg/L	0.001	0.017	<0.001	----	----	
Nickel	7440-02-0	0.001	mg/L	0.002	0.078	<0.001	----	----	
Lead	7439-92-1	0.001	mg/L	0.002	0.012	<0.001	----	----	
Zinc	7440-66-6	0.005	mg/L	0.010	1.42	<0.005	----	----	
Manganese	7439-96-5	0.001	mg/L	1.55	1.08	----	----	----	
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	----	----	
Iron	7439-89-6	0.05	mg/L	2.56	49.0	<0.05	----	----	
<b>EG035F: Dissolved Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----	
<b>EG035T: Total Recoverable Mercury by FIMS</b>									
Mercury	7439-97-6	0.0001	mg/L	0.0005	<0.0001	<0.0001	----	----	
<b>EK040P: Fluoride by PC Titrator</b>									
Fluoride	16984-48-8	0.1	mg/L	0.6	0.2	----	----	----	
<b>EK055G: Ammonia as N by Discrete Analyser</b>									
Ammonia as N	7664-41-7	0.01	mg/L	11.6	0.21	----	----	----	
<b>EK057G: Nitrite as N by Discrete Analyser</b>									
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	----	----	----	
<b>EK058G: Nitrate as N by Discrete Analyser</b>									
Nitrate as N	14797-55-8	0.01	mg/L	<0.01	0.12	----	----	----	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>									
Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.12	----	----	----	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.06	0.02	----	----	----	
<b>EN055: Ionic Balance</b>									
Total Anions	----	0.01	meq/L	80.3	18.4	----	----	----	
Total Cations	----	0.01	meq/L	76.5	18.2	----	----	----	
Ionic Balance	----	0.01	%	2.43	0.57	----	----	----	
<b>EP005: Total Organic Carbon (TOC)</b>									
Total Organic Carbon	----	1	mg/L	223	16	----	----	----	
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>									
Benzene	71-43-2	1	µg/L	211	<1	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW32_17/07/17	GW26_17/07/17	QC116_17/07/17	----	----
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	----	----	
Compound	CAS Number	LOR	Unit	EM1709415-011	EM1709415-012	EM1709415-013	-----	-----	
				Result	Result	Result	----	----	
<b>EP074A: Monocyclic Aromatic Hydrocarbons - Continued</b>									
Toluene	108-88-3	1	µg/L	1280	<1	----	----	----	
Ethylbenzene	100-41-4	1	µg/L	547	<1	----	----	----	
meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	1000	<1	----	----	----	
Styrene	100-42-5	1	µg/L	<100	<1	----	----	----	
ortho-Xylene	95-47-6	1	µg/L	516	<1	----	----	----	
Isopropylbenzene	98-82-8	1	µg/L	<100	<1	----	----	----	
n-Propylbenzene	103-65-1	1	µg/L	<100	<1	----	----	----	
1,3,5-Trimethylbenzene	108-67-8	1	µg/L	123	<1	----	----	----	
sec-Butylbenzene	135-98-8	1	µg/L	<100	<1	----	----	----	
1,2,4-Trimethylbenzene	95-63-6	1	µg/L	314	<1	----	----	----	
tert-Butylbenzene	98-06-6	1	µg/L	<100	<1	----	----	----	
p-Isopropyltoluene	99-87-6	1	µg/L	<100	<1	----	----	----	
n-Butylbenzene	104-51-8	1	µg/L	<100	<1	----	----	----	
<b>EP074B: Oxygenated Compounds</b>									
2-Propanone (Acetone)	67-64-1	10	µg/L	<1000	<10	----	----	----	
Vinyl Acetate	108-05-4	10	µg/L	<1000	<10	----	----	----	
2-Butanone (MEK)	78-93-3	10	µg/L	<1000	<10	----	----	----	
4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<1000	<10	----	----	----	
2-Hexanone (MBK)	591-78-6	10	µg/L	<1000	<10	----	----	----	
<b>EP074C: Sulfonated Compounds</b>									
Carbon disulfide	75-15-0	1	µg/L	<100	<1	----	----	----	
<b>EP074D: Fumigants</b>									
2,2-Dichloropropane	594-20-7	1	µg/L	<100	<1	----	----	----	
1,2-Dichloropropane	78-87-5	1	µg/L	<100	<1	----	----	----	
cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<100	<2	----	----	----	
trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<100	<2	----	----	----	
1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<100	<1	----	----	----	
<b>EP074E: Halogenated Aliphatic Compounds</b>									
Dichlorodifluoromethane	75-71-8	10	µg/L	<1000	<10	----	----	----	
Chloromethane	74-87-3	10	µg/L	<1000	<10	----	----	----	
Vinyl chloride	75-01-4	10	µg/L	----	<10.0	----	----	----	
Vinyl chloride	75-01-4	10.0	µg/L	<10.0	----	----	----	----	
Bromomethane	74-83-9	10	µg/L	<1000	<10	----	----	----	
Chloroethane	75-00-3	10	µg/L	<1000	<10	----	----	----	





## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW32_17/07/17	GW26_17/07/17	QC116_17/07/17	----	----
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	----	----	
Compound	CAS Number	LOR	Unit	EM1709415-011	EM1709415-012	EM1709415-013	-----	-----	
				Result	Result	Result	----	----	
<b>EP074E: Halogenated Aliphatic Compounds - Continued</b>									
Trichlorofluoromethane	75-69-4	10	µg/L	<1000	<10	----	----	----	
1.1-Dichloroethene	75-35-4	1	µg/L	<100	<1	----	----	----	
Iodomethane	74-88-4	1	µg/L	<100	<1	----	----	----	
Methylene chloride	75-09-2	4	µg/L	<100	<4	----	----	----	
trans-1.2-Dichloroethene	156-60-5	1	µg/L	<100	<1	----	----	----	
1.1-Dichloroethane	75-34-3	1	µg/L	<100	<1	----	----	----	
cis-1.2-Dichloroethene	156-59-2	1	µg/L	<100	<1	----	----	----	
1.1.1-Trichloroethane	71-55-6	1	µg/L	<100	<1	----	----	----	
1.1-Dichloropropylene	563-58-6	1	µg/L	<100	<1	----	----	----	
Carbon Tetrachloride	56-23-5	1	µg/L	<100	<1	----	----	----	
1.2-Dichloroethane	107-06-2	1	µg/L	<100	<1	----	----	----	
Trichloroethene	79-01-6	1	µg/L	<100	<1	----	----	----	
Dibromomethane	74-95-3	1	µg/L	<100	<1	----	----	----	
1.1.2-Trichloroethane	79-00-5	1	µg/L	<100	<1	----	----	----	
1.3-Dichloropropane	142-28-9	1	µg/L	<100	<1	----	----	----	
Tetrachloroethene	127-18-4	1	µg/L	<100	<1	----	----	----	
1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<100	<1	----	----	----	
trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<100	<1	----	----	----	
cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<100	<1	----	----	----	
1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<100	<1	----	----	----	
1.2.3-Trichloropropane	96-18-4	1	µg/L	<100	<1	----	----	----	
Pentachloroethane	76-01-7	1	µg/L	<100	<1	----	----	----	
1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<100	<1	----	----	----	
Hexachlorobutadiene	87-68-3	1	µg/L	----	<1.0	----	----	----	
Hexachlorobutadiene	87-68-3	1.0	µg/L	<10.0	----	----	----	----	
<b>EP074F: Halogenated Aromatic Compounds</b>									
Chlorobenzene	108-90-7	1	µg/L	<100	<1	----	----	----	
Bromobenzene	108-86-1	1	µg/L	<100	<1	----	----	----	
2-Chlorotoluene	95-49-8	1	µg/L	<100	<1	----	----	----	
4-Chlorotoluene	106-43-4	1	µg/L	<100	<1	----	----	----	
1.3-Dichlorobenzene	541-73-1	1	µg/L	<100	<1	----	----	----	
1.4-Dichlorobenzene	106-46-7	1	µg/L	----	<1.0	----	----	----	
1.4-Dichlorobenzene	106-46-7	1.0	µg/L	<10.0	----	----	----	----	
1.2-Dichlorobenzene	95-50-1	1	µg/L	<100	<1	----	----	----	
1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<100	<1	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW32_17/07/17	GW26_17/07/17	QC116_17/07/17	----	----
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	----	----	
Compound	CAS Number	LOR	Unit	EM1709415-011	EM1709415-012	EM1709415-013	-----	-----	
				Result	Result	Result	----	----	
<b>EP074F: Halogenated Aromatic Compounds - Continued</b>									
1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<100	<1	----	----	----	
<b>EP074G: Trihalomethanes</b>									
Chloroform	67-66-3	1	µg/L	<100	<1	----	----	----	
Bromodichloromethane	75-27-4	1	µg/L	<100	<1	----	----	----	
Dibromochloromethane	124-48-1	1	µg/L	<100	<1	----	----	----	
Bromoform	75-25-2	1	µg/L	<100	<1	----	----	----	
<b>EP074H: Naphthalene</b>									
Naphthalene	91-20-3	5	µg/L	14700	<5	----	----	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>									
Naphthalene	91-20-3	1	µg/L	----	<1.0	----	----	----	
Naphthalene	91-20-3	1.0	µg/L	41100	----	----	----	----	
Acenaphthylene	208-96-8	1	µg/L	----	<1.0	----	----	----	
Acenaphthylene	208-96-8	1.0	µg/L	106	----	----	----	----	
Acenaphthene	83-32-9	1	µg/L	----	<1.0	----	----	----	
Acenaphthene	83-32-9	1.0	µg/L	3150	----	----	----	----	
Fluorene	86-73-7	1	µg/L	----	<1.0	----	----	----	
Fluorene	86-73-7	1.0	µg/L	2660	----	----	----	----	
Phenanthrene	85-01-8	1	µg/L	----	<1.0	----	----	----	
Phenanthrene	85-01-8	1.0	µg/L	3880	----	----	----	----	
Anthracene	120-12-7	1	µg/L	----	<1.0	----	----	----	
Anthracene	120-12-7	1.0	µg/L	1610	----	----	----	----	
Fluoranthene	206-44-0	1	µg/L	----	<1.0	----	----	----	
Fluoranthene	206-44-0	1.0	µg/L	1240	----	----	----	----	
Pyrene	129-00-0	1	µg/L	----	<1.0	----	----	----	
Pyrene	129-00-0	1.0	µg/L	899	----	----	----	----	
Benz(a)anthracene	56-55-3	1	µg/L	----	<1.0	----	----	----	
Benz(a)anthracene	56-55-3	1.0	µg/L	157	----	----	----	----	
Chrysene	218-01-9	1	µg/L	----	<1.0	----	----	----	
Chrysene	218-01-9	1.0	µg/L	127	----	----	----	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	----	<1.0	----	----	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	97.1	----	----	----	----	
Benzo(k)fluoranthene	207-08-9	1	µg/L	----	<1.0	----	----	----	
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	40.6	----	----	----	----	
Benzo(a)pyrene	50-32-8	0.5	µg/L	85.2	<0.5	----	----	----	



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW32_17/07/17	GW26_17/07/17	QC116_17/07/17	----	----
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	----	----	
Compound	CAS Number	LOR	Unit	EM1709415-011	EM1709415-012	EM1709415-013	-----	-----	
				Result	Result	Result	----	----	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued</b>									
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	----	<1.0	----	----	----	
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<b>30.4</b>	----	----	----	----	
Dibenz(a.h)anthracene	53-70-3	1	µg/L	----	<1.0	----	----	----	
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<23.9	----	----	----	----	
Benzo(g.h.i)perylene	191-24-2	1	µg/L	----	<1.0	----	----	----	
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<b>39.3</b>	----	----	----	----	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<b>55200</b>	<0.5	----	----	----	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<b>119</b>	<0.5	----	----	----	
<b>EP080/071: Total Petroleum Hydrocarbons</b>									
C6 - C9 Fraction	----	20	µg/L	<b>4850</b>	<20	<20	----	----	
C10 - C14 Fraction	----	50	µg/L	<b>91200</b>	<50	----	----	----	
C15 - C28 Fraction	----	100	µg/L	<b>60200</b>	<100	----	----	----	
C29 - C36 Fraction	----	50	µg/L	<b>1720</b>	<50	----	----	----	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<b>153000</b>	<50	----	----	----	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>									
C6 - C10 Fraction	C6_C10	20	µg/L	<b>5700</b>	<20	<20	----	----	
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<b>2080</b>	<20	<20	----	----	
>C10 - C16 Fraction	----	100	µg/L	<b>106000</b>	<100	----	----	----	
>C16 - C34 Fraction	----	100	µg/L	<b>40000</b>	<100	----	----	----	
>C34 - C40 Fraction	----	100	µg/L	<b>640</b>	<100	----	----	----	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<b>147000</b>	<100	----	----	----	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<b>90600</b>	<100	----	----	----	
<b>EP080: BTEXN</b>									
Benzene	71-43-2	1	µg/L	<b>216</b>	<1	<1	----	----	
Toluene	108-88-3	2	µg/L	<b>1300</b>	<2	<2	----	----	
Ethylbenzene	100-41-4	2	µg/L	<b>554</b>	<2	<2	----	----	
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<b>1030</b>	<2	<2	----	----	
ortho-Xylene	95-47-6	2	µg/L	<b>523</b>	<2	<2	----	----	
^ Total Xylenes	1330-20-7	2	µg/L	<b>1550</b>	<2	<2	----	----	
^ Sum of BTEX	----	1	µg/L	<b>3620</b>	<1	<1	----	----	
Naphthalene	91-20-3	5	µg/L	<b>15400</b>	<5	<5	----	----	
<b>EP074S: VOC Surrogates</b>									



## Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	GW32_17/07/17	GW26_17/07/17	QC116_17/07/17	----	----
Client sampling date / time				17-Jul-2017 00:00	17-Jul-2017 00:00	17-Jul-2017 00:00	----	----	
Compound	CAS Number	LOR	Unit	EM1709415-011	EM1709415-012	EM1709415-013	-----	-----	
				Result	Result	Result	----	----	
<b>EP074S: VOC Surrogates - Continued</b>									
1,2-Dichloroethane-D4	17060-07-0	1	%	89.1	93.8	----	----	----	
Toluene-D8	2037-26-5	1	%	84.5	98.5	----	----	----	
4-Bromofluorobenzene	460-00-4	1	%	91.4	93.6	----	----	----	
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>									
Phenol-d6	13127-88-3	1	%	----	29.1	----	----	----	
Phenol-d6	13127-88-3	1.0	%	Not Determined	----	----	----	----	
2-Chlorophenol-D4	93951-73-6	1	%	----	80.7	----	----	----	
2-Chlorophenol-D4	93951-73-6	1.0	%	Not Determined	----	----	----	----	
2,4,6-Tribromophenol	118-79-6	1	%	----	57.6	----	----	----	
2,4,6-Tribromophenol	118-79-6	1.0	%	Not Determined	----	----	----	----	
<b>EP075(SIM)T: PAH Surrogates</b>									
2-Fluorobiphenyl	321-60-8	1	%	----	79.1	----	----	----	
2-Fluorobiphenyl	321-60-8	1.0	%	Not Determined	----	----	----	----	
Anthracene-d10	1719-06-8	1	%	----	90.9	----	----	----	
Anthracene-d10	1719-06-8	1.0	%	Not Determined	----	----	----	----	
4-Terphenyl-d14	1718-51-0	1	%	----	93.2	----	----	----	
4-Terphenyl-d14	1718-51-0	1.0	%	Not Determined	----	----	----	----	
<b>EP080S: TPH(V)/BTEX Surrogates</b>									
1,2-Dichloroethane-D4	17060-07-0	2	%	95.8	97.5	99.3	----	----	
Toluene-D8	2037-26-5	2	%	89.1	89.8	90.6	----	----	
4-Bromofluorobenzene	460-00-4	2	%	99.5	92.4	90.9	----	----	



## Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
<b>EP074S: VOC Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	72	120
Toluene-D8	2037-26-5	70	130
4-Bromofluorobenzene	460-00-4	70	128
<b>EP075(SIM)S: Phenolic Compound Surrogates</b>			
Phenol-d6	13127-88-3	10	46
2-Chlorophenol-D4	93951-73-6	23	104
2,4,6-Tribromophenol	118-79-6	28	130
<b>EP075(SIM)T: PAH Surrogates</b>			
2-Fluorobiphenyl	321-60-8	36	114
Anthracene-d10	1719-06-8	51	119
4-Terphenyl-d14	1718-51-0	49	127
<b>EP080S: TPH(V)/BTEX Surrogates</b>			
1,2-Dichloroethane-D4	17060-07-0	73	129
Toluene-D8	2037-26-5	70	125
4-Bromofluorobenzene	460-00-4	71	129
<b>EP231S: PFAS Surrogate</b>			
13C4-PFOS	----	60	130



## QUALITY CONTROL REPORT

<b>Work Order</b>	: <b>EM1709415</b>	<b>Page</b>	: 1 of 37
<b>Amendment</b>	: <b>2</b>		
<b>Client</b>	: <b>AECOM Australia Pty Ltd</b>	<b>Laboratory</b>	: Environmental Division Melbourne
<b>Contact</b>	: MS AVERYLL COYNE	<b>Contact</b>	: Carol Walsh
<b>Address</b>	: COLLINS SQUARE LEVEL 10, TOWER TWO 727 COLLINS STREET MELBOURNE VIC, AUSTRALIA 3004	<b>Address</b>	: 4 Westall Rd Springvale VIC Australia 3171
<b>Telephone</b>	: +61 03 9653 1234	<b>Telephone</b>	: +61-3-8549 9608
<b>Project</b>	: 60537182	<b>Date Samples Received</b>	: 18-Jul-2017
<b>Order number</b>	: Task 3.2	<b>Date Analysis Commenced</b>	: 19-Jul-2017
<b>C-O-C number</b>	: ----	<b>Issue Date</b>	: 11-Aug-2017
<b>Sampler</b>	: BH, BP, JM		
<b>Site</b>	: ----		
<b>Quote number</b>	: ME/199/16		
<b>No. of samples received</b>	: 13		
<b>No. of samples analysed</b>	: 13		



Accreditation No. 825  
Accredited for compliance with  
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

### Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Dilani Fernando	Senior Inorganic Chemist	Melbourne Inorganics, Springvale, VIC
Eric Chau	Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Nancy Wang	Senior Semivolatile Instrument Chemist	Melbourne Organics, Springvale, VIC
Nikki Stepniewski	Senior Inorganic Instrument Chemist	Melbourne Inorganics, Springvale, VIC
Xing Lin	Senior Organic Chemist	Melbourne Organics, Springvale, VIC



## General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

Key :  
 Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot  
 CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.  
 LOR = Limit of reporting  
 RPD = Relative Percentage Difference  
 # = Indicates failed QC

## Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EA005P: pH by PC Titrator (QC Lot: 1004132)</b>									
EM1709373-011	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.62	7.59	0.394	0% - 20%
EM1709395-003	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	8.55	8.64	1.05	0% - 20%
<b>EA005P: pH by PC Titrator (QC Lot: 1004137)</b>									
EM1709425-010	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	8.50	8.53	0.352	0% - 20%
EM1709415-010	GW14_17/07/17	EA005-P: pH Value	----	0.01	pH Unit	6.46	6.41	0.777	0% - 20%
<b>EA005P: pH by PC Titrator (QC Lot: 1027402)</b>									
EM1710070-003	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.40	7.51	1.48	0% - 20%
EM1709371-011	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.30	7.34	0.546	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 1004180)</b>									
EM1709376-011	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	913	851	7.03	0% - 20%
EM1709415-012	GW26_17/07/17	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	1360	1400	2.74	0% - 20%
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QC Lot: 1027297)</b>									
EM1709192-022	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	476	486	1.87	0% - 20%
EM1710018-002	Anonymous	EA015H: Total Dissolved Solids @180°C	----	10	mg/L	580	585	0.858	0% - 20%
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 1004133)</b>									
EM1709376-004	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	12	8	42.9	0% - 50%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	12	8	42.9	0% - 50%
EM1709395-003	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	78	# 104	29.4	0% - 20%
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	316	294	7.22	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	393	398	1.20	0% - 20%
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 1004136)</b>									



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 1004136) - continued</b>									
EM1709425-010	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	39	42	8.58	0% - 20%
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	589	584	0.854	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	628	626	0.242	0% - 20%
EM1709415-010	GW14_17/07/17	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	59	55	6.94	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	59	55	6.94	0% - 20%
<b>ED037P: Alkalinity by PC Titrator (QC Lot: 1027403)</b>									
EM1710018-005	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	2	<1	81.3	No Limit
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	2	<1	81.3	No Limit
EM1709371-011	Anonymous	ED037-P: Hydroxide Alkalinity as CaCO3	DMO-210-001	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Carbonate Alkalinity as CaCO3	3812-32-6	1	mg/L	<1	<1	0.00	No Limit
		ED037-P: Bicarbonate Alkalinity as CaCO3	71-52-3	1	mg/L	610	579	5.31	0% - 20%
		ED037-P: Total Alkalinity as CaCO3	----	1	mg/L	610	579	5.31	0% - 20%
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 1004445)</b>									
EM1709415-010	GW14_17/07/17	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	8	8	0.00	No Limit
EM1709401-001	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	<1	0.00	No Limit
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QC Lot: 1027436)</b>									
EM1710018-003	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	<1	0.00	No Limit
EM1709192-022	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	12	12	0.00	0% - 50%
<b>ED043: Total Oxidised Sulfur as SO4 2- (QC Lot: 1012553)</b>									
EM1709415-001	GW51_17/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	442	476	7.61	0% - 20%
EM1709636-002	Anonymous	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	332	307	7.76	0% - 20%
<b>ED043: Total Oxidised Sulfur as SO4 2- (QC Lot: 1032270)</b>									
EM1709192-022	Anonymous	ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	23	22	8.47	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 1004444)</b>									
EM1709415-009	GW10_17/07/17	ED045G: Chloride	16887-00-6	1	mg/L	24	25	5.16	0% - 20%
EM1709401-001	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	172	171	0.882	0% - 20%
<b>ED045G: Chloride by Discrete Analyser (QC Lot: 1027435)</b>									
EM1709648-002	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	19	19	0.00	0% - 50%
EM1709192-022	Anonymous	ED045G: Chloride	16887-00-6	1	mg/L	23	22	0.00	0% - 20%
<b>ED093F: Dissolved Major Cations (QC Lot: 1004425)</b>									
EM1709415-001	GW51_17/07/17	ED093F: Calcium	7440-70-2	1	mg/L	78	78	0.00	0% - 20%
		ED093F: Magnesium	7439-95-4	1	mg/L	62	62	0.00	0% - 20%
		ED093F: Sodium	7440-23-5	1	mg/L	692	693	0.247	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	25	25	0.00	0% - 20%



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>ED093F: Dissolved Major Cations (QC Lot: 1004425) - continued</b>									
EM1709427-002	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	3	3	0.00	No Limit
		ED093F: Magnesium	7439-95-4	1	mg/L	<1	<1	0.00	No Limit
		ED093F: Sodium	7440-23-5	1	mg/L	2	2	0.00	No Limit
		ED093F: Potassium	7440-09-7	1	mg/L	1	1	0.00	No Limit
<b>ED093F: Dissolved Major Cations (QC Lot: 1026091)</b>									
EM1710025-031	Anonymous	ED093F: Calcium	7440-70-2	1	mg/L	12	10	12.5	0% - 50%
		ED093F: Magnesium	7439-95-4	1	mg/L	16	15	0.00	0% - 50%
		ED093F: Sodium	7440-23-5	1	mg/L	137	133	2.74	0% - 20%
		ED093F: Potassium	7440-09-7	1	mg/L	2	2	0.00	No Limit
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 1004424)</b>									
EM1709401-003	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.062	0.061	0.00	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.010	0.010	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.26	0.25	4.45	0% - 20%
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.21	0.20	0.00	No Limit
EM1709415-012	GW26_17/07/17	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0007	0.0007	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.340	0.335	1.44	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.048	0.049	2.82	0% - 20%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.803	0.810	0.835	0% - 20%
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.02	0.02	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 1026093)</b>									
EM1710010-003	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	0.0017	0.0015	12.8	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.027	0.028	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.038	0.038	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.167	0.177	5.80	0% - 20%
		EG020A-F: Lead	7439-92-1	0.001	mg/L	0.136	0.142	4.17	0% - 20%
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.813	0.860	5.60	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.311	0.333	6.90	0% - 20%



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 1026093) - continued</b>									
EM1710010-003	Anonymous	EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.512	0.557	8.46	0% - 20%
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	262	280	6.37	0% - 20%
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	0.14	0.15	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	0.24	0.14	50.4	No Limit
EM1709415-011	GW32_17/07/17	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	1.49	1.47	1.58	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.006	0.007	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit		
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit		
<b>EG020F: Dissolved Metals by ICP-MS (QC Lot: 1040338)</b>									
EM1710486-003	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	3.12	3.25	4.36	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.052	0.053	0.00	0% - 20%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.008	0.008	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	<0.05	0.00	No Limit		
EM1709371-009	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.003	0.003	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Manganese	7439-96-5	0.001	mg/L	0.396	0.404	2.02	0% - 20%
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.010	0.010	0.00	0% - 50%
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.020	0.021	0.00	No Limit
		EG020A-F: Aluminium	7429-90-5	0.01	mg/L	0.01	0.01	0.00	No Limit
		EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-F: Iron	7439-89-6	0.05	mg/L	7.49	7.26	3.04	0% - 20%
<b>EG020T: Total Metals by ICP-MS (QC Lot: 1004427)</b>									
EM1709376-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0010	0.0006	52.1	No Limit





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020T: Total Metals by ICP-MS (QC Lot: 1004427) - continued</b>									
EM1709376-001	Anonymous	EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.006	0.006	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.004	0.004	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.038	0.040	2.96	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.008	0.008	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.082	0.085	4.18	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.106	0.109	3.19	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.074	0.072	3.23	0% - 50%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	15.3	16.0	4.71	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	0.02	0.02	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	1.47	1.51	2.72	0% - 20%
EM1709376-011	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0002	0.0002	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.007	0.007	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.003	0.003	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.018	0.018	0.00	0% - 50%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.019	0.015	21.3	0% - 50%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.050	0.048	2.53	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.053	0.053	0.00	0% - 50%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	4.74	4.43	6.82	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-T: Iron	7439-89-6	0.05	mg/L	9.94	10.1	1.33	0% - 20%		
<b>EG020T: Total Metals by ICP-MS (QC Lot: 1004428)</b>									
EM1709415-010	GW14_17/07/17	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.015	0.015	0.00	0% - 50%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.022	0.020	9.24	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.013	0.014	0.00	0% - 50%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.013	0.013	0.00	0% - 50%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.014	0.013	0.00	0% - 50%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.015	0.016	0.00	0% - 50%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.066	0.067	0.00	0% - 50%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	17.7	15.8	11.2	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-T: Iron	7439-89-6	0.05	mg/L	7.66	7.06	8.19	0% - 20%		
<b>EG020T: Total Metals by ICP-MS (QC Lot: 1027626)</b>									
EM1709192-022	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.122	0.121	0.00	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.010	0.010	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.012	0.011	0.00	0% - 50%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.006	0.006	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.130	0.130	0.00	0% - 20%



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG020T: Total Metals by ICP-MS (QC Lot: 1027626) - continued</b>									
EM1709192-022	Anonymous	EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.028	0.028	0.00	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.032	0.032	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	1.05	1.02	2.82	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
		EG020A-T: Iron	7439-89-6	0.05	mg/L	15.8	15.7	0.489	0% - 20%
EM1709981-003	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.005	0.005	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.093	0.095	2.23	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.004	0.005	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.02	0.03	35.5	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-T: Iron	7439-89-6	0.05	mg/L	0.08	0.08	0.00	No Limit		
<b>EG020T: Total Metals by ICP-MS (QC Lot: 1040326)</b>									
EM1709371-009	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0002	0.0001	74.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.056	0.056	0.00	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.078	0.080	3.62	0% - 20%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.028	0.028	0.00	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.379	0.376	0.618	0% - 20%
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.599	0.599	0.00	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.077	0.078	2.42	0% - 20%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.123	0.126	1.83	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	24.3	25.1	3.13	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-T: Iron	7439-89-6	0.05	mg/L	61.6	56.8	8.06	0% - 20%		
EM1710441-003	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.217	0.217	0.00	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.04	0.04	0.00	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EG020A-T: Iron	7439-89-6	0.05	mg/L	2.63	2.60	0.898	0% - 20%		
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 1004423)</b>									



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 1004423) - continued</b>									
EM1709401-003	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709415-012	GW26_17/07/17	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 1026092)</b>									
EM1710023-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709415-011	GW32_17/07/17	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035F: Dissolved Mercury by FIMS (QC Lot: 1040339)</b>									
EM1709371-009	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1007149)</b>									
EM1709371-010	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1709376-012	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1027923)</b>									
EM1709192-022	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EM1710066-005	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EG035T: Total Recoverable Mercury by FIMS (QC Lot: 1043332)</b>									
EM1709371-009	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
<b>EK040P: Fluoride by PC Titrator (QC Lot: 1004135)</b>									
EM1709415-010	GW14_17/07/17	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.6	0.6	0.00	No Limit
<b>EK040P: Fluoride by PC Titrator (QC Lot: 1027404)</b>									
EM1709371-011	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.3	0.3	0.00	No Limit
<b>EK055G: Ammonia as N by Discrete Analyser (QC Lot: 1004371)</b>									
EM1709415-001	GW51_17/07/17	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.33	0.35	4.01	0% - 20%
<b>EK055G: Ammonia as N by Discrete Analyser (QC Lot: 1030195)</b>									
EM1709192-022	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	13.2	12.9	2.27	0% - 20%
EM1710025-034	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	553	550	0.430	0% - 20%
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 1004447)</b>									
EM1709415-010	GW14_17/07/17	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EM1709401-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
<b>EK057G: Nitrite as N by Discrete Analyser (QC Lot: 1027437)</b>									
EM1710018-003	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EM1709192-022	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	0.01	<0.01	0.00	No Limit
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 1004370)</b>									
EM1709414-001	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EM1709425-002	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	3.41	3.44	0.777	0% - 20%
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 1030194)</b>									
EM1709192-022	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.04	0.04	0.00	No Limit
EM1710025-034	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 1004446)</b>									



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 1004446) - continued</b>										
EM1709415-010	GW14_17/07/17	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.19	0.19	0.00	0% - 50%	
EM1709401-001	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	7.49	7.67	2.39	0% - 20%	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 1027438)</b>										
EM1709192-022	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.15	0.14	0.00	0% - 50%	
<b>EP005: Total Organic Carbon (TOC) (QC Lot: 1009832)</b>										
EM1709395-001	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	18	19	0.00	0% - 50%	
EM1709415-009	GW10_17/07/17	EP005: Total Organic Carbon	----	1	mg/L	11	11	0.00	0% - 50%	
<b>EP005: Total Organic Carbon (TOC) (QC Lot: 1033529)</b>										
EM1709192-022	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	48	44	7.55	0% - 20%	
EM1710240-002	Anonymous	EP005: Total Organic Carbon	----	1	mg/L	32	38	16.4	0% - 20%	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 1003964)</b>										
EM1709371-001	Anonymous	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit			
EM1709415-001	GW51_17/07/17	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit	



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 1003964) - continued</b>										
EM1709415-001	GW51_17/07/17	EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 1026376)</b>										
EM1709192-022	Anonymous	EP074-WF: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Toluene	108-88-3	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: meta- & para-Xylene	108-38-3	1	µg/L	<1	<1	0.00	No Limit	
			106-42-3							
		EP074-WF: Styrene	100-42-5	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.3.5-Trimethylbenzene	108-67-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: 1.2.4-Trimethylbenzene	95-63-6	1	µg/L	<1	<1	0.00	No Limit	
		EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	<1	0.00	No Limit	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	<1	0.00	No Limit			
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	<1	0.00	No Limit			
<b>EP074B: Oxygenated Compounds (QC Lot: 1003964)</b>										
EM1709371-001	Anonymous	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit	
EM1709415-001	GW51_17/07/17	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit	
<b>EP074B: Oxygenated Compounds (QC Lot: 1026376)</b>										
EM1709192-022	Anonymous	EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	<10	0.00	No Limit	
		EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	<10	0.00	No Limit	
<b>EP074C: Sulfonated Compounds (QC Lot: 1003964)</b>										
EM1709371-001	Anonymous	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit	
EM1709415-001	GW51_17/07/17	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit	
<b>EP074C: Sulfonated Compounds (QC Lot: 1026376)</b>										
EM1709192-022	Anonymous	EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	<1	0.00	No Limit	





Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074D: Fumigants (QC Lot: 1003964)</b>									
EM1709371-001	Anonymous	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
EM1709415-001	GW51_17/07/17	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
<b>EP074D: Fumigants (QC Lot: 1026376)</b>									
EM1709192-022	Anonymous	EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	<2	0.00	No Limit
		EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	<2	0.00	No Limit
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 1003964)</b>									
EM1709371-001	Anonymous	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	2	2	0.00	No Limit
		EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 1003964) - continued</b>									
EM1709371-001	Anonymous	EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit
EM1709415-001	GW51_17/07/17	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.2-Dichloroethene	156-59-2	1	µg/L	8	8	0.00	No Limit
		EP074-WF: 1.1.1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.1.2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1.4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1.4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.1.2.2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit
		<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 1026376)</b>							
EM1709192-022	Anonymous	EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<10.0	<10.0	0.00	No Limit
		EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: 1.1-Dichloroethene	75-35-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074E: Halogenated Aliphatic Compounds (QC Lot: 1026376) - continued</b>									
EM1709192-022	Anonymous	EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	<10	0.00	No Limit
		EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	<10	0.00	No Limit
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	<10	0.00	No Limit		
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	<10	0.00	No Limit		
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<4	<4	0.00	No Limit		
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 1003964)</b>									
EM1709371-001	Anonymous	EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
		EM1709415-001	GW51_17/07/17	EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0
EP074-WF: Chlorobenzene	108-90-7			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: Bromobenzene	108-86-1			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 2-Chlorotoluene	95-49-8			1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 4-Chlorotoluene	106-43-4			1	µg/L	<1	<1	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 1003964) - continued</b>									
EM1709415-001	GW51_17/07/17	EP074-WF: 1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit
<b>EP074F: Halogenated Aromatic Compounds (QC Lot: 1026376)</b>									
EM1709192-022	Anonymous	EP074-WF: 1.4-Dichlorobenzene	106-46-7	0.1	µg/L	<1.0	<1.0	0.00	No Limit
		EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.3-Dichlorobenzene	541-73-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2-Dichlorobenzene	95-50-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: 1.2.4-Trichlorobenzene	120-82-1	1	µg/L	<1	<1	0.00	No Limit
EP074-WF: 1.2.3-Trichlorobenzene	87-61-6	1	µg/L	<1	<1	0.00	No Limit		
<b>EP074G: Trihalomethanes (QC Lot: 1003964)</b>									
EM1709371-001	Anonymous	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
EM1709415-001	GW51_17/07/17	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
<b>EP074G: Trihalomethanes (QC Lot: 1026376)</b>									
EM1709192-022	Anonymous	EP074-WF: Chloroform	67-66-3	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	<1	0.00	No Limit
		EP074-WF: Bromoform	75-25-2	1	µg/L	<1	<1	0.00	No Limit
<b>EP074H: Naphthalene (QC Lot: 1003964)</b>									
EM1709371-001	Anonymous	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EM1709415-001	GW51_17/07/17	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP074H: Naphthalene (QC Lot: 1026376)</b>									
EM1709192-022	Anonymous	EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1004334)</b>									
EM1709390-001	Anonymous	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.00	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 1004334) - continued</b>									
EM1709390-001	Anonymous	EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.00	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.00	No Limit
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.00	No Limit		
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1003965)</b>									
EM1709371-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1709415-001	GW51_17/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1003967)</b>									
EM1709415-005	QC211_17/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1709425-007	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1004335)</b>									
EM1709390-001	Anonymous	EP071: C15 - C28 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	µg/L	<50	<50	0.00	No Limit
		EP071: C29 - C36 Fraction	----	50	µg/L	<50	<50	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1026375)</b>									
EM1710018-028	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EM1709192-022	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Petroleum Hydrocarbons (QC Lot: 1039999)</b>									
EM1709415-013	QC116_17/07/17	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1003965)</b>									
EM1709371-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM1709415-001	GW51_17/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1003967)</b>									
EM1709415-005	QC211_17/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EM1709425-007	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1004335)</b>									
EM1709390-001	Anonymous	EP071: >C10 - C16 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: >C16 - C34 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	µg/L	<100	<100	0.00	No Limit
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1026375)</b>									





Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1026375) - continued</b>										
EM1710018-028	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
EM1709192-022	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 1039999)</b>										
EM1709415-013	QC116_17/07/17	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit	
<b>EP080: BTEXN (QC Lot: 1003965)</b>										
EM1709371-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit	
EM1709415-001	GW51_17/07/17	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit	
			106-42-3							
EM1709415-005	QC211_17/07/17	EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit	
EM1709425-007	Anonymous		106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit	
EM1709425-007	Anonymous	EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit	
<b>EP080: BTEXN (QC Lot: 1026375)</b>										
EM1710018-028	Anonymous	EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit	
			106-42-3							
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)	
<b>EP080: BTEXN (QC Lot: 1026375) - continued</b>										
EM1710018-028	Anonymous	EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
EM1709192-022	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
<b>EP080: BTEXN (QC Lot: 1039999)</b>										
EM1709415-013	QC116_17/07/17	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit	
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit	
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit	
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit	
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit	
	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit		
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 1009431)</b>										
EB1714774-002	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit	
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
EM1709459-014	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit	
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 1009431)</b>										
EB1714774-002	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit	
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit	
		EP231X: Perfluorotridecanoic acid (PFTTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit	



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 1009431) - continued</b>									
EB1714774-002	Anonymous	EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EM1709459-014	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
<b>EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 1009431)</b>									
EB1714774-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EM1709459-014	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 1009431)</b>									



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 1009431) - continued</b>									
EB1714774-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EM1709459-014	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
<b>EP231P: PFAS Sums (QC Lot: 1009431)</b>									
EB1714774-002	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit
EM1709459-014	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit



### Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 1004180)</b>									
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	99.0	95	105	
				<10	293 mg/L	102	95	105	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C (QCLot: 1027297)</b>									
EA015H: Total Dissolved Solids @180°C	----	10	mg/L	<10	2000 mg/L	99.1	95	105	
				<10	293 mg/L	99.0	95	105	
<b>ED037P: Alkalinity by PC Titrator (QCLot: 1004133)</b>									
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	104	88	109	
<b>ED037P: Alkalinity by PC Titrator (QCLot: 1004136)</b>									
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	105	88	109	
<b>ED037P: Alkalinity by PC Titrator (QCLot: 1027403)</b>									
ED037-P: Total Alkalinity as CaCO3	----	----	mg/L	----	200 mg/L	94.9	88	109	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 1004445)</b>									
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	106	92	115	
				<1	100 mg/L	102	92	115	
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 1027436)</b>									
ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	1	mg/L	<1	25 mg/L	110	92	115	
				<1	100 mg/L	105	92	115	
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 1012553)</b>									
ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	<10	500 mg/L	102	82	122	
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 1032270)</b>									
ED043: Total Oxidised Sulfur as SO4 2-	----	1	mg/L	<1	500 mg/L	97.4	82	122	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 1004444)</b>									
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	107	88	118	
				<1	1000 mg/L	103	88	118	
<b>ED045G: Chloride by Discrete Analyser (QCLot: 1027435)</b>									
ED045G: Chloride	16887-00-6	1	mg/L	<1	10 mg/L	105	88	118	
				<1	1000 mg/L	107	88	118	
<b>ED093F: Dissolved Major Cations (QCLot: 1004425)</b>									
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	103	93	110	
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	107	91	110	
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	104	90	109	
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	107	89	109	
<b>ED093F: Dissolved Major Cations (QCLot: 1026091)</b>									





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>ED093F: Dissolved Major Cations (QCLot: 1026091) - continued</b>									
ED093F: Calcium	7440-70-2	1	mg/L	<1	5 mg/L	108	93	110	
ED093F: Magnesium	7439-95-4	1	mg/L	<1	5 mg/L	103	91	110	
ED093F: Sodium	7440-23-5	1	mg/L	<1	50 mg/L	104	90	109	
ED093F: Potassium	7440-09-7	1	mg/L	<1	50 mg/L	102	89	109	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 1004424)</b>									
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	102	93	105	
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	96.2	91	107	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	99.2	84	104	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	91.5	83	103	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	90.7	82	103	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	90.8	83	105	
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	92.7	83	105	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.7	82	106	
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	95.6	82	109	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	92.6	85	109	
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	98.6	94	106	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 1026093)</b>									
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	98.8	93	105	
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	98.6	91	107	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.1	84	104	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	91.6	83	103	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	94.0	82	103	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	94.6	83	105	
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	94.3	83	105	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	98.3	82	106	
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	97.4	82	109	
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	99.2	85	109	
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	101	94	106	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 1040338)</b>									
EG020A-F: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	103	93	105	
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	103	91	107	
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	96.6	84	104	
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	96.8	83	103	
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	98.5	82	103	
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	98.6	83	105	
EG020A-F: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	98.4	83	105	
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	99.9	82	106	
EG020A-F: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	92.6	82	109	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 1040338) - continued</b>									
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	100	85	109	
EG020A-F: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	96.8	94	106	
<b>EG020T: Total Metals by ICP-MS (QCLot: 1004427)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	105	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	96.7	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	101	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	95.2	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	91.2	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	92.0	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	95.9	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	94.8	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	89.4	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	94.1	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	94.9	80	120	
<b>EG020T: Total Metals by ICP-MS (QCLot: 1004428)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	103	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	98.8	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	100	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	94.2	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	91.5	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	93.6	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	96.2	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	93.2	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	90.1	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	93.8	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	96.2	80	120	
<b>EG020T: Total Metals by ICP-MS (QCLot: 1027626)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	107	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	106	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	105	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	96.7	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.4	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	103	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	102	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	98.3	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	111	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	101	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	107	80	120	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
					LCS	Low	High		
<b>EG020T: Total Metals by ICP-MS (QCLot: 1040326)</b>									
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	110	80	120	
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	108	90	110	
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	104	86	111	
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	98.1	87	109	
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	98.8	87	108	
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	105	88	109	
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	103	88	111	
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	102	87	111	
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	104	85	113	
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	101	87	113	
EG020A-T: Iron	7439-89-6	0.05	mg/L	<0.05	0.5 mg/L	100.0	80	120	
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 1004423)</b>									
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	86.4	81	114	
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 1026092)</b>									
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	85.2	81	114	
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 1040339)</b>									
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	81.6	81	114	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1007149)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	86.0	81	114	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1027923)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	91.0	81	114	
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1043332)</b>									
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	94.3	81	114	
<b>EK040P: Fluoride by PC Titrator (QCLot: 1004135)</b>									
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	102	85	112	
<b>EK040P: Fluoride by PC Titrator (QCLot: 1027404)</b>									
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	101	85	112	
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 1004371)</b>									
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	105	80	115	
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 1030195)</b>									
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	102	80	115	
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 1004447)</b>									
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	102	94	107	
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 1027437)</b>									
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	106	94	107	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 1004370)</b>									
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	104	89	114	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 1030194)</b>									
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	107	89	114	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 1004446)</b>									
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	102	94	108	
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 1027438)</b>									
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	102	94	108	
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1009832)</b>									
EP005: Total Organic Carbon	----	1	mg/L	<1	100 mg/L	94.1	81	109	
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1033529)</b>									
EP005: Total Organic Carbon	----	1	mg/L	<1	100 mg/L	101	81	109	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1003964)</b>									
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	100	81	119	
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	104	84	117	
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	95.9	83	114	
EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	40 µg/L	93.6	81	116	
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	96.8	82	118	
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	97.6	85	115	
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	93.6	81	113	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	91.5	76	111	
EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	91.9	79	109	
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	88.8	77	111	
EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	93.2	79	108	
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	90.9	80	110	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	86.6	75	111	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	83.0	68	111	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1026376)</b>									
EP074-WF: Benzene	71-43-2	1	µg/L	<1	20 µg/L	87.5	81	119	
EP074-WF: Toluene	108-88-3	1	µg/L	<1	20 µg/L	91.2	84	117	
EP074-WF: Ethylbenzene	100-41-4	1	µg/L	<1	20 µg/L	90.4	83	114	
EP074-WF: meta- & para-Xylene	108-38-3 106-42-3	1	µg/L	<1	40 µg/L	88.0	81	116	
EP074-WF: Styrene	100-42-5	1	µg/L	<1	20 µg/L	91.2	82	118	
EP074-WF: ortho-Xylene	95-47-6	1	µg/L	<1	20 µg/L	91.4	85	115	
EP074-WF: Isopropylbenzene	98-82-8	1	µg/L	<1	20 µg/L	90.5	81	113	
EP074-WF: n-Propylbenzene	103-65-1	1	µg/L	<1	20 µg/L	92.3	76	111	
EP074-WF: 1,3,5-Trimethylbenzene	108-67-8	1	µg/L	<1	20 µg/L	94.2	79	109	
EP074-WF: sec-Butylbenzene	135-98-8	1	µg/L	<1	20 µg/L	93.6	77	111	
EP074-WF: 1,2,4-Trimethylbenzene	95-63-6	1	µg/L	<1	20 µg/L	93.1	79	108	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1026376) - continued</b>									
EP074-WF: tert-Butylbenzene	98-06-6	1	µg/L	<1	20 µg/L	94.1	80	110	
EP074-WF: p-Isopropyltoluene	99-87-6	1	µg/L	<1	20 µg/L	91.3	75	111	
EP074-WF: n-Butylbenzene	104-51-8	1	µg/L	<1	20 µg/L	87.8	68	111	
<b>EP074B: Oxygenated Compounds (QCLot: 1003964)</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	96.6	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	107	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	102	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	105	73	128	
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	112	75	129	
<b>EP074B: Oxygenated Compounds (QCLot: 1026376)</b>									
EP074-WF: 2-Propanone (Acetone)	67-64-1	10	µg/L	<10	200 µg/L	69.6	69	147	
EP074-WF: Vinyl Acetate	108-05-4	10	µg/L	<10	200 µg/L	85.0	77	124	
EP074-WF: 2-Butanone (MEK)	78-93-3	10	µg/L	<10	200 µg/L	78.4	71	131	
EP074-WF: 4-Methyl-2-pentanone (MIBK)	108-10-1	10	µg/L	<10	200 µg/L	86.9	73	128	
EP074-WF: 2-Hexanone (MBK)	591-78-6	10	µg/L	<10	200 µg/L	83.9	75	129	
<b>EP074C: Sulfonated Compounds (QCLot: 1003964)</b>									
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	95.3	64	119	
<b>EP074C: Sulfonated Compounds (QCLot: 1026376)</b>									
EP074-WF: Carbon disulfide	75-15-0	1	µg/L	<1	20 µg/L	76.0	64	119	
<b>EP074D: Fumigants (QCLot: 1003964)</b>									
EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	96.3	74	117	
EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	102	83	118	
EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	98.2	74	109	
EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	98.4	70	109	
EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	105	81	116	
<b>EP074D: Fumigants (QCLot: 1026376)</b>									
EP074-WF: 2,2-Dichloropropane	594-20-7	1	µg/L	<1	20 µg/L	88.0	74	117	
EP074-WF: 1,2-Dichloropropane	78-87-5	1	µg/L	<1	20 µg/L	92.3	83	118	
EP074-WF: cis-1,3-Dichloropropylene	10061-01-5	2	µg/L	<2	20 µg/L	87.6	74	109	
EP074-WF: trans-1,3-Dichloropropylene	10061-02-6	2	µg/L	<2	20 µg/L	86.1	70	109	
EP074-WF: 1,2-Dibromoethane (EDB)	106-93-4	1	µg/L	<1	20 µg/L	88.1	81	116	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1003964)</b>									
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	91.6	61	137	
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	98.5	66	137	
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	92.9	67	135	
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	87.3	52	128	
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	91.5	76	125	
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	97.7	74	123	





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1003964) - continued</b>									
EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	98.4	75	120	
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	63.9	37	120	
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	20 µg/L	112	72	159	
EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	98.0	78	117	
EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	102	81	118	
EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	100	83	118	
EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	97.0	76	115	
EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	96.7	75	117	
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	92.7	72	111	
EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	105	81	120	
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	87.8	78	116	
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	105	79	116	
EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	107	85	119	
EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	109	85	119	
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	94.6	76	120	
EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	97.4	78	110	
EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	107	64	118	
EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	98.4	51	113	
EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	106	85	121	
EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	106	84	118	
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	95.1	64	109	
EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	99.8	65	115	
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	76.4	70	121	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1026376)</b>									
EP074-WF: Dichlorodifluoromethane	75-71-8	10	µg/L	<10	200 µg/L	62.4	61	137	
EP074-WF: Chloromethane	74-87-3	10	µg/L	<10	200 µg/L	66.3	66	137	
EP074-WF: Vinyl chloride	75-01-4	0.2	µg/L	<0.2	200 µg/L	76.7	67	135	
EP074-WF: Bromomethane	74-83-9	10	µg/L	<10	200 µg/L	68.4	52	128	
EP074-WF: Chloroethane	75-00-3	10	µg/L	<10	200 µg/L	79.8	76	125	
EP074-WF: Trichlorofluoromethane	75-69-4	10	µg/L	<10	200 µg/L	77.8	74	123	
EP074-WF: 1,1-Dichloroethene	75-35-4	1	µg/L	<1	20 µg/L	77.4	75	120	
EP074-WF: Iodomethane	74-88-4	1	µg/L	<1	20 µg/L	63.9	37	120	
EP074-WF: Methylene chloride	75-09-2	2	µg/L	<2	20 µg/L	94.6	72	159	
EP074-WF: trans-1,2-Dichloroethene	156-60-5	1	µg/L	<1	20 µg/L	81.8	78	117	
EP074-WF: 1,1-Dichloroethane	75-34-3	1	µg/L	<1	20 µg/L	89.4	81	118	
EP074-WF: cis-1,2-Dichloroethene	156-59-2	1	µg/L	<1	20 µg/L	90.2	83	118	
EP074-WF: 1,1,1-Trichloroethane	71-55-6	1	µg/L	<1	20 µg/L	88.5	76	115	
EP074-WF: 1,1-Dichloropropylene	563-58-6	1	µg/L	<1	20 µg/L	81.6	75	117	
EP074-WF: Carbon Tetrachloride	56-23-5	1	µg/L	<1	20 µg/L	83.9	72	111	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
				Result	Spike	Spike Recovery (%)		Recovery Limits (%)	
					Concentration	LCS	Low	High	
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1026376) - continued</b>									
EP074-WF: 1,2-Dichloroethane	107-06-2	1	µg/L	<1	20 µg/L	89.8	81	120	
EP074-WF: Trichloroethene	79-01-6	1	µg/L	<1	20 µg/L	80.4	78	116	
EP074-WF: Dibromomethane	74-95-3	1	µg/L	<1	20 µg/L	91.0	79	116	
EP074-WF: 1,1,2-Trichloroethane	79-00-5	1	µg/L	<1	20 µg/L	91.8	85	119	
EP074-WF: 1,3-Dichloropropane	142-28-9	1	µg/L	<1	20 µg/L	93.3	85	119	
EP074-WF: Tetrachloroethene	127-18-4	1	µg/L	<1	20 µg/L	86.4	76	120	
EP074-WF: 1,1,1,2-Tetrachloroethane	630-20-6	1	µg/L	<1	20 µg/L	90.8	78	110	
EP074-WF: trans-1,4-Dichloro-2-butene	110-57-6	1	µg/L	<1	20 µg/L	83.1	64	118	
EP074-WF: cis-1,4-Dichloro-2-butene	1476-11-5	1	µg/L	<1	20 µg/L	79.8	51	113	
EP074-WF: 1,1,2,2-Tetrachloroethane	79-34-5	1	µg/L	<1	20 µg/L	89.3	85	121	
EP074-WF: 1,2,3-Trichloropropane	96-18-4	1	µg/L	<1	20 µg/L	89.6	84	118	
EP074-WF: Pentachloroethane	76-01-7	1	µg/L	<1	20 µg/L	91.8	64	109	
EP074-WF: 1,2-Dibromo-3-chloropropane	96-12-8	1	µg/L	<1	20 µg/L	87.8	65	115	
EP074-WF: Hexachlorobutadiene	87-68-3	0.5	µg/L	<0.5	20 µg/L	92.2	70	121	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 1003964)</b>									
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	99.0	85	115	
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	88.4	82	116	
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	94.5	81	112	
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	93.5	80	110	
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	95.5	80	110	
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	95.3	80	112	
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	96.6	84	111	
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	91.6	70	114	
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	95.6	78	116	
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 1026376)</b>									
EP074-WF: Chlorobenzene	108-90-7	1	µg/L	<1	20 µg/L	90.8	85	115	
EP074-WF: Bromobenzene	108-86-1	1	µg/L	<1	20 µg/L	85.2	82	116	
EP074-WF: 2-Chlorotoluene	95-49-8	1	µg/L	<1	20 µg/L	94.5	81	112	
EP074-WF: 4-Chlorotoluene	106-43-4	1	µg/L	<1	20 µg/L	94.0	80	110	
EP074-WF: 1,3-Dichlorobenzene	541-73-1	1	µg/L	<1	20 µg/L	92.7	80	110	
EP074-WF: 1,4-Dichlorobenzene	106-46-7	0.1	µg/L	<0.1	20 µg/L	92.6	80	112	
EP074-WF: 1,2-Dichlorobenzene	95-50-1	1	µg/L	<1	20 µg/L	93.1	84	111	
EP074-WF: 1,2,4-Trichlorobenzene	120-82-1	1	µg/L	<1	20 µg/L	89.7	70	114	
EP074-WF: 1,2,3-Trichlorobenzene	87-61-6	1	µg/L	<1	20 µg/L	91.6	78	116	
<b>EP074G: Trihalomethanes (QCLot: 1003964)</b>									
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	101	82	118	
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	96.2	75	112	
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	96.1	73	108	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP074G: Trihalomethanes (QCLot: 1003964) - continued</b>									
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	92.4	68	107	
<b>EP074G: Trihalomethanes (QCLot: 1026376)</b>									
EP074-WF: Chloroform	67-66-3	1	µg/L	<1	20 µg/L	92.6	82	118	
EP074-WF: Bromodichloromethane	75-27-4	1	µg/L	<1	20 µg/L	90.6	75	112	
EP074-WF: Dibromochloromethane	124-48-1	1	µg/L	<1	20 µg/L	87.4	73	108	
EP074-WF: Bromoform	75-25-2	1	µg/L	<1	20 µg/L	84.1	68	107	
<b>EP074H: Naphthalene (QCLot: 1003964)</b>									
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	102	80	116	
<b>EP074H: Naphthalene (QCLot: 1026376)</b>									
EP074-WF: Naphthalene	91-20-3	5	µg/L	<5	20 µg/L	92.4	80	116	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1004334)</b>									
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	67.0	39	110	
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	68.9	40	124	
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	72.1	47	117	
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	74.6	51	118	
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	75.6	53	119	
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	51.8	51	113	
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	74.4	59	123	
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	73.3	58	123	
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	65.7	52	126	
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	69.1	55	123	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	70.8	52	131	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	75.3	57	126	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	69.2	56	126	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	71.0	53	123	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	70.8	53	125	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	71.8	53	125	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1026083)</b>									
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	76.4	39	110	
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	80.0	40	124	
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	80.9	47	117	
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	83.7	51	118	
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	85.9	53	119	
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	58.4	51	113	
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	88.3	59	123	
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	87.7	58	123	
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	81.6	52	126	



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)		Recovery Limits (%)	
						LCS	Low	High	
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1026083) - continued</b>									
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	87.6	55	123	
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	85.3	52	131	
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	83.4	57	126	
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	80.2	56	126	
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	87.6	53	123	
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	88.2	53	125	
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	89.4	53	125	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1003965)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	93.3	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1003967)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	103	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1004335)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	75.2	53	123	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	75.4	57	133	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	67.4	55	141	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1026084)</b>									
EP071: C10 - C14 Fraction	----	50	µg/L	<50	3368 µg/L	110	53	123	
EP071: C15 - C28 Fraction	----	100	µg/L	<100	14735 µg/L	112	57	133	
EP071: C29 - C36 Fraction	----	50	µg/L	<50	7856 µg/L	106	55	141	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1026375)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	89.7	67	127	
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1039999)</b>									
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	92.9	67	127	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1003965)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	92.8	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1003967)</b>									
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	101	65	125	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1004335)</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	73.1	54	122	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	70.8	56	132	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	73.6	51	137	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1026084)</b>									
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	5225 µg/L	110	54	122	
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	19994 µg/L	108	56	132	
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1449 µg/L	113	51	137	
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1026375)</b>									



Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1026375) - continued</b>								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	89.9	65	125
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1039999)</b>								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	91.2	65	125
<b>EP080: BTEXN (QCLot: 1003965)</b>								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	105	76	120
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	96.5	76	124
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	97.9	72	124
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	97.4	72	130
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	99.5	78	128
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	104	71	129
<b>EP080: BTEXN (QCLot: 1003967)</b>								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	103	76	120
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	106	76	124
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	101	72	124
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	104	72	130
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	105	78	128
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	100	71	129
<b>EP080: BTEXN (QCLot: 1026375)</b>								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	91.0	76	120
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	94.1	76	124
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	91.8	72	124
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	92.8	72	130
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	94.5	78	128
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	98.4	71	129
<b>EP080: BTEXN (QCLot: 1039999)</b>								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	95.1	76	120
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	97.0	76	124
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	93.4	72	124
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	97.8	72	130
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	101	78	128
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	96.8	71	129
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 1009431)</b>								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.5 µg/L	101	70	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.5 µg/L	100	70	130





Sub-Matrix: WATER

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
				Result	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 1009431) - continued</b>								
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.5 µg/L	95.0	70	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.5 µg/L	99.4	70	130
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.5 µg/L	97.4	70	130
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	105	70	130
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 1009431)</b>								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	2.5 µg/L	95.8	70	130
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	78.6	70	130
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	91.8	70	130
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	106	70	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	99.2	70	130
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	98.2	70	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	101	70	130
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	110	70	130
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	110	70	130
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	117	70	130
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	120	70	150
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 1009431)</b>								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	93.4	70	130
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	112	70	150
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	119	70	150
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	0.05	µg/L	<0.05	1.25 µg/L	109	70	150
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	110	70	150
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	98.0	70	130
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	105	70	130
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 1009431)</b>								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.5 µg/L	101	70	130
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.5 µg/L	103	70	130
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.5 µg/L	98.0	70	130
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.5 µg/L	108	70	130

### Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: WATER

Matrix Spike (MS) Report



Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 1004445)</b>							
EM1709401-003	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	91.0	70	130
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA (QCLot: 1027436)</b>							
EM1709371-011	Anonymous	ED041G: Sulfate as SO4 - Turbidimetric	14808-79-8	10 mg/L	# Not Determined	70	130
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 1012553)</b>							
EM1709415-002	GW53_17/07/17	ED043: Total Oxidised Sulfur as SO4 2-	----	500 mg/L	94.6	70	130
<b>ED043: Total Oxidised Sulfur as SO4 2- (QCLot: 1032270)</b>							
EM1709371-011	Anonymous	ED043: Total Oxidised Sulfur as SO4 2-	----	500 mg/L	106	70	130
<b>ED045G: Chloride by Discrete Analyser (QCLot: 1004444)</b>							
EM1709401-003	Anonymous	ED045G: Chloride	16887-00-6	400 mg/L	88.1	70	130
<b>ED045G: Chloride by Discrete Analyser (QCLot: 1027435)</b>							
EM1709371-011	Anonymous	ED045G: Chloride	16887-00-6	400 mg/L	102	70	130
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 1004424)</b>							
EM1709401-003	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	94.5	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	98.4	81	133
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	90.9	71	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	90.8	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	90.4	75	133
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	89.9	64	134
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	93.7	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	93.5	75	131
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 1026093)</b>							
EM1709415-011	GW32_17/07/17	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	109	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	97.1	81	133
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	96.7	71	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	87.9	76	130
		EG020A-F: Lead	7439-92-1	0.2 mg/L	96.4	75	133
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	# Not Determined	64	134
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	105	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	102	75	131
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 1040338)</b>							
EM1709371-009	Anonymous	EG020A-F: Arsenic	7440-38-2	0.2 mg/L	109	85	131
		EG020A-F: Cadmium	7440-43-9	0.05 mg/L	100	81	133
		EG020A-F: Chromium	7440-47-3	0.2 mg/L	99.9	71	135
		EG020A-F: Copper	7440-50-8	0.2 mg/L	101	76	130



Sub-Matrix: WATER

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report			
				Spike Concentration	SpikeRecovery(%) MS	Recovery Limits (%)	
				Low	High		
<b>EG020F: Dissolved Metals by ICP-MS (QCLot: 1040338) - continued</b>							
EM1709371-009	Anonymous	EG020A-F: Lead	7439-92-1	0.2 mg/L	101	75	133
		EG020A-F: Manganese	7439-96-5	0.2 mg/L	89.1	64	134
		EG020A-F: Nickel	7440-02-0	0.2 mg/L	102	73	131
		EG020A-F: Zinc	7440-66-6	0.2 mg/L	96.8	75	131
<b>EG020T: Total Metals by ICP-MS (QCLot: 1004427)</b>							
EM1709376-001	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	97.9	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	99.2	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	91.6	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	90.6	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	93.9	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	89.5	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	91.3	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	91.2	74	116
<b>EG020T: Total Metals by ICP-MS (QCLot: 1004428)</b>							
EM1709415-010	GW14_17/07/17	EG020A-T: Arsenic	7440-38-2	1 mg/L	93.8	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	101	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	93.8	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	92.5	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	99.0	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	92.2	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	93.1	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	95.1	74	116
<b>EG020T: Total Metals by ICP-MS (QCLot: 1027626)</b>							
EM1709192-022	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	98.2	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	98.2	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	87.9	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	86.6	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	93.9	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	94.6	73	123
		EG020A-T: Nickel	7440-02-0	1 mg/L	92.1	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	93.9	74	116
<b>EG020T: Total Metals by ICP-MS (QCLot: 1040326)</b>							
EM1709106-028	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	112	82	118
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	109	75	129
		EG020A-T: Chromium	7440-47-3	1 mg/L	98.4	80	118
		EG020A-T: Copper	7440-50-8	1 mg/L	97.7	81	115
		EG020A-T: Lead	7439-92-1	1 mg/L	109	83	121
		EG020A-T: Manganese	7439-96-5	1 mg/L	106	73	123



Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
Laboratory sample ID		Client sample ID	Method: Compound	CAS Number	Spike Concentration	SpikeRecovery(%) MS	Recovery Limits (%) Low High
<b>EG020T: Total Metals by ICP-MS (QCLot: 1040326) - continued</b>							
EM1709106-028	Anonymous	EG020A-T: Nickel	7440-02-0	1 mg/L	106	80	118
		EG020A-T: Zinc	7440-66-6	1 mg/L	107	74	116
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 1004423)</b>							
EM1709405-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	89.8	70	120
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 1026092)</b>							
EM1709934-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	75.0	70	120
<b>EG035F: Dissolved Mercury by FIMS (QCLot: 1040339)</b>							
EM1709415-013	QC116_17/07/17	EG035F: Mercury	7439-97-6	0.01 mg/L	74.1	70	120
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1007149)</b>							
EM1709371-017	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	87.2	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1027923)</b>							
EM1709371-011	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	80.5	70	130
<b>EG035T: Total Recoverable Mercury by FIMS (QCLot: 1043332)</b>							
EM1709415-013	QC116_17/07/17	EG035T: Mercury	7439-97-6	0.01 mg/L	75.0	70	130
<b>EK040P: Fluoride by PC Titrator (QCLot: 1004135)</b>							
EM1709415-003	GW62_17/07/17	EK040P: Fluoride	16984-48-8	5 mg/L	94.8	70	130
<b>EK040P: Fluoride by PC Titrator (QCLot: 1027404)</b>							
EM1709371-012	Anonymous	EK040P: Fluoride	16984-48-8	5 mg/L	107	70	130
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 1004371)</b>							
EM1709415-002	GW53_17/07/17	EK055G: Ammonia as N	7664-41-7	1 mg/L	107	70	130
<b>EK055G: Ammonia as N by Discrete Analyser (QCLot: 1030195)</b>							
EM1709371-011	Anonymous	EK055G: Ammonia as N	7664-41-7	1 mg/L	# Not Determined	70	130
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 1004447)</b>							
EM1709401-003	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	89.5	80	114
<b>EK057G: Nitrite as N by Discrete Analyser (QCLot: 1027437)</b>							
EM1709371-011	Anonymous	EK057G: Nitrite as N	14797-65-0	0.5 mg/L	90.7	80	114
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 1004370)</b>							
EM1709415-001	GW51_17/07/17	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	101	70	130
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 1030194)</b>							
EM1709371-011	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.5 mg/L	89.3	70	130
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 1004446)</b>							
EM1709401-003	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	# Not Determined	79	123



Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 1027438)</b>							
EM1709371-011	Anonymous	EK071G: Reactive Phosphorus as P	14265-44-2	0.5 mg/L	102	79	123
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1009832)</b>							
EM1709395-003	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	85.9	80	114
<b>EP005: Total Organic Carbon (TOC) (QCLot: 1033529)</b>							
EM1709371-011	Anonymous	EP005: Total Organic Carbon	----	100 mg/L	110	80	114
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1003964)</b>							
EM1709371-002	Anonymous	EP074-WF: Benzene	71-43-2	20 µg/L	113	76	128
		EP074-WF: Toluene	108-88-3	20 µg/L	95.4	72	132
<b>EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 1026376)</b>							
EM1709371-011	Anonymous	EP074-WF: Benzene	71-43-2	20 µg/L	89.7	76	128
		EP074-WF: Toluene	108-88-3	20 µg/L	84.3	72	132
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1003964)</b>							
EM1709371-002	Anonymous	EP074-WF: 1,1-Dichloroethene	75-35-4	20 µg/L	102	63	129
		EP074-WF: Trichloroethene	79-01-6	20 µg/L	84.2	64	126
<b>EP074E: Halogenated Aliphatic Compounds (QCLot: 1026376)</b>							
EM1709371-011	Anonymous	EP074-WF: 1,1-Dichloroethene	75-35-4	20 µg/L	86.7	63	129
		EP074-WF: Trichloroethene	79-01-6	20 µg/L	77.7	64	126
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 1003964)</b>							
EM1709371-002	Anonymous	EP074-WF: Chlorobenzene	108-90-7	20 µg/L	95.2	81	119
<b>EP074F: Halogenated Aromatic Compounds (QCLot: 1026376)</b>							
EM1709371-011	Anonymous	EP074-WF: Chlorobenzene	108-90-7	20 µg/L	86.6	81	119
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 1004334)</b>							
EM1709390-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	5 µg/L	84.9	42	122
		EP075(SIM): Pyrene	129-00-0	5 µg/L	88.9	40	136
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1003965)</b>							
EM1709371-002	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	75.4	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1003967)</b>							
EM1709415-006	QC212_17/07/17	EP080: C6 - C9 Fraction	----	280 µg/L	86.5	43	125
<b>EP080/071: Total Petroleum Hydrocarbons (QCLot: 1026375)</b>							
EM1709371-011	Anonymous	EP080: C6 - C9 Fraction	----	280 µg/L	62.5	43	125
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1003965)</b>							
EM1709371-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	74.0	44	122
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1003967)</b>							
EM1709415-006	QC212_17/07/17	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	84.4	44	122





Sub-Matrix: WATER

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 1026375)</b>							
EM1709371-011	Anonymous	EP080: C6 - C10 Fraction	C6_C10	330 µg/L	62.2	44	122
<b>EP080: BTEXN (QCLot: 1003965)</b>							
EM1709371-002	Anonymous	EP080: Benzene	71-43-2	20 µg/L	111	68	130
		EP080: Toluene	108-88-3	20 µg/L	89.1	72	132
<b>EP080: BTEXN (QCLot: 1003967)</b>							
EM1709415-006	QC212_17/07/17	EP080: Benzene	71-43-2	20 µg/L	97.2	68	130
		EP080: Toluene	108-88-3	20 µg/L	100	72	132
<b>EP080: BTEXN (QCLot: 1026375)</b>							
EM1709371-011	Anonymous	EP080: Benzene	71-43-2	20 µg/L	85.3	68	130
		EP080: Toluene	108-88-3	20 µg/L	85.8	72	132
<b>EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 1009431)</b>							
EB1714774-002	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.5 µg/L	108	50	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.5 µg/L	105	50	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.5 µg/L	106	50	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.5 µg/L	111	50	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	114	50	130
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.5 µg/L	118	50	130
<b>EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 1009431)</b>							
EB1714774-002	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	107	50	130
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	74.6	50	130
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	104	50	130
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	112	50	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	108	50	130
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	115	50	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	107	50	130
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	119	50	130
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	112	50	130
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	116	50	130
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	128	50	150
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 1009431)</b>							
EB1714774-002	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	102	50	130
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	122	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	128	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	2448-09-7	1.25 µg/L	122	50	150



Sub-Matrix: **WATER**

				<i>Matrix Spike (MS) Report</i>			
				<i>Spike</i>	<i>SpikeRecovery(%)</i>	<i>Recovery Limits (%)</i>	
<i>Laboratory sample ID</i>	<i>Client sample ID</i>	<i>Method: Compound</i>	<i>CAS Number</i>	<i>Concentration</i>	<i>MS</i>	<i>Low</i>	<i>High</i>
<b>EP231C: Perfluoroalkyl Sulfonamides (QCLot: 1009431) - continued</b>							
EB1714774-002	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	116	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	123	50	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	120	50	130
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 1009431)</b>							
EB1714774-002	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.5 µg/L	110	50	130
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.5 µg/L	117	50	130
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.5 µg/L	115	50	130
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.5 µg/L	119	50	130

## QA/QC Compliance Assessment to assist with Quality Review

Work Order	: EM1709415	Page	: 1 of 18
Amendment	: 2		
Client	: AECOM Australia Pty Ltd	Laboratory	: Environmental Division Melbourne
Contact	: MS AVERYLL COYNE	Telephone	: +61-3-8549 9608
Project	: 60537182	Date Samples Received	: 18-Jul-2017
Site	: ----	Issue Date	: 11-Aug-2017
Sampler	: BH, BP, JM	No. of samples received	: 13
Order number	: Task 3.2	No. of samples analysed	: 13

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

### Summary of Outliers

#### Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Laboratory Control outliers occur.
- Duplicate outliers exist - please see following pages for full details.
- Matrix Spike outliers exist - please see following pages for full details.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

#### Outliers : Analysis Holding Time Compliance

- Analysis Holding Time Outliers exist - please see following pages for full details.

#### Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



### Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
<b>Duplicate (DUP) RPDs</b>							
ED037P: Alkalinity by PC Titrator	EM1709395--003	Anonymous	Carbonate Alkalinity as CaCO3	3812-32-6	29.4 %	0% - 20%	RPD exceeds LOR based limits
<b>Matrix Spike (MS) Recoveries</b>							
ED041G: Sulfate (Turbidimetric) as SO4 2- by DA	EM1709371--011	Anonymous	Sulfate as SO4 - Turbidimetric	14808-79-8	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EG020F: Dissolved Metals by ICP-MS	EM1709415--011	GW32_17/07/17	Manganese	7439-96-5	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EK055G: Ammonia as N by Discrete Analyser	EM1709371--011	Anonymous	Ammonia as N	7664-41-7	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EK071G: Reactive Phosphorus as P by discrete analyser	EM1709401--003	Anonymous	Reactive Phosphorus as P	14265-44-2	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.

### Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EA005P: pH by PC Titrator</b>						
Clear Plastic Bottle - Natural GW32_17/07/17	----	----	----	01-Aug-2017	17-Jul-2017	15
Clear Plastic Bottle - Natural GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	----	----	19-Jul-2017	17-Jul-2017	2
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>						
Clear Plastic Bottle - Natural GW32_17/07/17	----	----	----	01-Aug-2017	24-Jul-2017	8
<b>ED037P: Alkalinity by PC Titrator</b>						
Clear Plastic Bottle - Natural GW32_17/07/17	----	----	----	01-Aug-2017	31-Jul-2017	1
<b>EK057G: Nitrite as N by Discrete Analyser</b>						
Clear Plastic Bottle - Natural GW32_17/07/17	----	----	----	01-Aug-2017	19-Jul-2017	13
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>						



Matrix: **WATER**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EK071G: Reactive Phosphorus as P by discrete analyser - Analysis Holding Time Compliance</b>						
<b>Clear Plastic Bottle - Natural</b> GW32_17/07/17	----	----	----	01-Aug-2017	19-Jul-2017	13
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>						
<b>Amber VOC Vial - Sulfuric Acid</b> GW32_17/07/17	----	----	----	01-Aug-2017	31-Jul-2017	1
<b>EP074B: Oxygenated Compounds</b>						
<b>Amber VOC Vial - Sulfuric Acid</b> GW32_17/07/17	----	----	----	01-Aug-2017	31-Jul-2017	1
<b>EP074C: Sulfonated Compounds</b>						
<b>Amber VOC Vial - Sulfuric Acid</b> GW32_17/07/17	----	----	----	01-Aug-2017	31-Jul-2017	1
<b>EP074D: Fumigants</b>						
<b>Amber VOC Vial - Sulfuric Acid</b> GW32_17/07/17	----	----	----	01-Aug-2017	31-Jul-2017	1
<b>EP074E: Halogenated Aliphatic Compounds</b>						
<b>Amber VOC Vial - Sulfuric Acid</b> GW32_17/07/17	----	----	----	01-Aug-2017	31-Jul-2017	1
<b>EP074F: Halogenated Aromatic Compounds</b>						
<b>Amber VOC Vial - Sulfuric Acid</b> GW32_17/07/17	----	----	----	01-Aug-2017	31-Jul-2017	1
<b>EP074G: Trihalomethanes</b>						
<b>Amber VOC Vial - Sulfuric Acid</b> GW32_17/07/17	----	----	----	01-Aug-2017	31-Jul-2017	1
<b>EP074H: Naphthalene</b>						
<b>Amber VOC Vial - Sulfuric Acid</b> GW32_17/07/17	----	----	----	01-Aug-2017	31-Jul-2017	1
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>						
<b>Amber Glass Bottle - Unpreserved</b> GW32_17/07/17	01-Aug-2017	24-Jul-2017	8	----	----	----
<b>EP080/071: Total Petroleum Hydrocarbons</b>						
<b>Amber Glass Bottle - Unpreserved</b> GW32_17/07/17	01-Aug-2017	24-Jul-2017	8	----	----	----
<b>Amber VOC Vial - Sulfuric Acid</b> QC116_17/07/17	08-Aug-2017	31-Jul-2017	8	08-Aug-2017	31-Jul-2017	8
<b>Amber VOC Vial - Sulfuric Acid</b> GW32_17/07/17	----	----	----	01-Aug-2017	31-Jul-2017	1
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>						
<b>Amber Glass Bottle - Unpreserved</b> GW32_17/07/17	01-Aug-2017	24-Jul-2017	8	----	----	----





Matrix: **WATER**

Method Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Analysis Holding Time</b>						
Amber VOC Vial - Sulfuric Acid QC116_17/07/17	08-Aug-2017	31-Jul-2017	8	08-Aug-2017	31-Jul-2017	8
Amber VOC Vial - Sulfuric Acid GW32_17/07/17	----	----	----	01-Aug-2017	31-Jul-2017	1
<b>EP080: BTEXN</b>						
Amber VOC Vial - Sulfuric Acid QC116_17/07/17	08-Aug-2017	31-Jul-2017	8	08-Aug-2017	31-Jul-2017	8
Amber VOC Vial - Sulfuric Acid GW32_17/07/17	----	----	----	01-Aug-2017	31-Jul-2017	1

**Outliers : Frequency of Quality Control Samples**

Matrix: **WATER**

Quality Control Sample Type Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
<b>Laboratory Duplicates (DUP)</b>					
PAH/Phenols (GC/MS - SIM)	1	18	5.56	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatle Fraction	1	23	4.35	10.00	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>					
TRH - Semivolatle Fraction	0	23	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

**Analysis Holding Time Compliance**

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EA005P: pH by PC Titrator</b>							
Clear Plastic Bottle - Natural (EA005-P) GW32_17/07/17	17-Jul-2017	----	----	----	01-Aug-2017	17-Jul-2017	*
Clear Plastic Bottle - Natural (EA005-P) GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	19-Jul-2017	17-Jul-2017	*



Matrix: **WATER**

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EA015: Total Dissolved Solids dried at 180 ± 5 °C</b>								
<b>Clear Plastic Bottle - Natural (EA015H)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	24-Jul-2017	✓
<b>Clear Plastic Bottle - Natural (EA015H)</b> GW32_17/07/17		17-Jul-2017	----	----	----	01-Aug-2017	24-Jul-2017	*
<b>ED037P: Alkalinity by PC Titrator</b>								
<b>Clear Plastic Bottle - Natural (ED037-P)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	31-Jul-2017	✓
<b>Clear Plastic Bottle - Natural (ED037-P)</b> GW32_17/07/17		17-Jul-2017	----	----	----	01-Aug-2017	31-Jul-2017	*
<b>ED041G: Sulfate (Turbidimetric) as SO4 2- by DA</b>								
<b>Clear Plastic Bottle - Natural (ED041G)</b> GW32_17/07/17		17-Jul-2017	----	----	----	01-Aug-2017	14-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (ED041G)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	14-Aug-2017	✓
<b>ED043: Total Oxidised Sulfur as SO4 2-</b>								
<b>Clear Plastic Bottle - Natural (ED043)</b> GW32_17/07/17		17-Jul-2017	03-Aug-2017	14-Aug-2017	✓	04-Aug-2017	14-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (ED043)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	24-Jul-2017	14-Aug-2017	✓	24-Jul-2017	14-Aug-2017	✓
<b>ED045G: Chloride by Discrete Analyser</b>								
<b>Clear Plastic Bottle - Natural (ED045G)</b> GW32_17/07/17		17-Jul-2017	----	----	----	01-Aug-2017	14-Aug-2017	✓
<b>Clear Plastic Bottle - Natural (ED045G)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	14-Aug-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>ED093F: Dissolved Major Cations</b>							
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F) GW32_17/07/17	17-Jul-2017	----	----	----	02-Aug-2017	14-Aug-2017	✓
Clear Plastic Bottle - Nitric Acid; Filtered (ED093F) GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17 GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	20-Jul-2017	14-Aug-2017	✓
<b>EG020F: Dissolved Metals by ICP-MS</b>							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) GW32_17/07/17	17-Jul-2017	----	----	----	01-Aug-2017	13-Jan-2018	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) QC116_17/07/17	17-Jul-2017	----	----	----	08-Aug-2017	13-Jan-2018	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17 GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	13-Jan-2018	✓
<b>EG020T: Total Metals by ICP-MS</b>							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) GW32_17/07/17	17-Jul-2017	01-Aug-2017	13-Jan-2018	✓	02-Aug-2017	13-Jan-2018	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) QC116_17/07/17	17-Jul-2017	08-Aug-2017	13-Jan-2018	✓	09-Aug-2017	13-Jan-2018	✓
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) GW51_17/07/17, GW62_17/07/17, QC211_17/07/17, GW10_17/07/17, GW26_17/07/17 GW53_17/07/17, GW48_17/07/17, QC212_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	13-Jan-2018	✓	19-Jul-2017	13-Jan-2018	✓
<b>EG035F: Dissolved Mercury by FIMS</b>							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) GW32_17/07/17	17-Jul-2017	----	----	----	02-Aug-2017	14-Aug-2017	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) QC116_17/07/17	17-Jul-2017	----	----	----	09-Aug-2017	14-Aug-2017	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17 GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	14-Aug-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EG035T: Total Recoverable Mercury by FIMS</b>								
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) GW32_17/07/17	17-Jul-2017	----	----	----	03-Aug-2017	14-Aug-2017	✓	
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) QC116_17/07/17	17-Jul-2017	----	----	----	09-Aug-2017	14-Aug-2017	✓	
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) GW51_17/07/17, GW62_17/07/17, QC211_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, QC212_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	20-Jul-2017	14-Aug-2017	✓
<b>EK040P: Fluoride by PC Titrator</b>								
Clear Plastic Bottle - Natural (EK040P) GW32_17/07/17	17-Jul-2017	----	----	----	01-Aug-2017	14-Aug-2017	✓	
Clear Plastic Bottle - Natural (EK040P) GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	14-Aug-2017	✓
<b>EK055G: Ammonia as N by Discrete Analyser</b>								
Clear Plastic Bottle - Sulfuric Acid (EK055G) GW32_17/07/17	17-Jul-2017	----	----	----	03-Aug-2017	14-Aug-2017	✓	
Clear Plastic Bottle - Sulfuric Acid (EK055G) GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	14-Aug-2017	✓
<b>EK057G: Nitrite as N by Discrete Analyser</b>								
Clear Plastic Bottle - Natural (EK057G) GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	19-Jul-2017	✓
Clear Plastic Bottle - Natural (EK057G) GW32_17/07/17		17-Jul-2017	----	----	----	01-Aug-2017	19-Jul-2017	*
<b>EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser</b>								
Clear Plastic Bottle - Sulfuric Acid (EK059G) GW32_17/07/17		17-Jul-2017	----	----	----	03-Aug-2017	14-Aug-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK059G) GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	14-Aug-2017	✓



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EK071G: Reactive Phosphorus as P by discrete analyser</b>								
<b>Clear Plastic Bottle - Natural (EK071G)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	19-Jul-2017	19-Jul-2017	✓
<b>Clear Plastic Bottle - Natural (EK071G)</b> GW32_17/07/17		17-Jul-2017	----	----	----	01-Aug-2017	19-Jul-2017	*
<b>EP005: Total Organic Carbon (TOC)</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP005)</b> GW32_17/07/17		17-Jul-2017	----	----	----	03-Aug-2017	14-Aug-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP005)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	----	----	----	21-Jul-2017	14-Aug-2017	✓
<b>EP074A: Monocyclic Aromatic Hydrocarbons</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW32_17/07/17		17-Jul-2017	31-Jul-2017	31-Jul-2017	✓	01-Aug-2017	31-Jul-2017	*
<b>EP074B: Oxygenated Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW32_17/07/17		17-Jul-2017	31-Jul-2017	31-Jul-2017	✓	01-Aug-2017	31-Jul-2017	*
<b>EP074C: Sulfonated Compounds</b>								
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
<b>Amber VOC Vial - Sulfuric Acid (EP074-WF)</b> GW32_17/07/17		17-Jul-2017	31-Jul-2017	31-Jul-2017	✓	01-Aug-2017	31-Jul-2017	*





Matrix: WATER

Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP074D: Fumigants</b>								
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW32_17/07/17		17-Jul-2017	31-Jul-2017	31-Jul-2017	✓	01-Aug-2017	31-Jul-2017	*
<b>EP074E: Halogenated Aliphatic Compounds</b>								
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW32_17/07/17		17-Jul-2017	31-Jul-2017	31-Jul-2017	✓	01-Aug-2017	31-Jul-2017	*
<b>EP074F: Halogenated Aromatic Compounds</b>								
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW32_17/07/17		17-Jul-2017	31-Jul-2017	31-Jul-2017	✓	01-Aug-2017	31-Jul-2017	*
<b>EP074G: Trihalomethanes</b>								
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW32_17/07/17		17-Jul-2017	31-Jul-2017	31-Jul-2017	✓	01-Aug-2017	31-Jul-2017	*
<b>EP074H: Naphthalene</b>								
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW51_17/07/17, GW62_17/07/17, GW10_17/07/17, GW26_17/07/17	GW53_17/07/17, GW48_17/07/17, GW14_17/07/17,	17-Jul-2017	19-Jul-2017	31-Jul-2017	✓	19-Jul-2017	31-Jul-2017	✓
Amber VOC Vial - Sulfuric Acid (EP074-WF) GW32_17/07/17		17-Jul-2017	31-Jul-2017	31-Jul-2017	✓	01-Aug-2017	31-Jul-2017	*



Matrix: **WATER** Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP075(SIM)B: Polynuclear Aromatic Hydrocarbons</b>							
<b>Amber Glass Bottle - Unpreserved (EP075(SIM))</b> GW32_17/07/17	17-Jul-2017	01-Aug-2017	24-Jul-2017	✘	01-Aug-2017	10-Sep-2017	✔
<b>Amber Glass Bottle - Unpreserved (EP075(SIM))</b> GW51_17/07/17, GW53_17/07/17, GW62_17/07/17, GW48_17/07/17, GW10_17/07/17, GW14_17/07/17, GW26_17/07/17	17-Jul-2017	20-Jul-2017	24-Jul-2017	✔	20-Jul-2017	29-Aug-2017	✔
<b>EP080/071: Total Petroleum Hydrocarbons</b>							
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW32_17/07/17	17-Jul-2017	01-Aug-2017	24-Jul-2017	✘	01-Aug-2017	10-Sep-2017	✔
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW51_17/07/17, GW53_17/07/17, GW62_17/07/17, GW48_17/07/17, QC211_17/07/17, QC212_17/07/17, GW10_17/07/17, GW14_17/07/17, GW26_17/07/17	17-Jul-2017	20-Jul-2017	24-Jul-2017	✔	20-Jul-2017	29-Aug-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> QC116_17/07/17	17-Jul-2017	08-Aug-2017	31-Jul-2017	✘	08-Aug-2017	31-Jul-2017	✘
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW51_17/07/17, GW53_17/07/17, GW62_17/07/17, GW48_17/07/17, QC211_17/07/17, QC212_17/07/17, QC213_17/07/17, QC214_17/07/17, GW10_17/07/17, GW14_17/07/17, GW26_17/07/17	17-Jul-2017	19-Jul-2017	31-Jul-2017	✔	19-Jul-2017	31-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW32_17/07/17	17-Jul-2017	31-Jul-2017	31-Jul-2017	✔	01-Aug-2017	31-Jul-2017	✘



Matrix: **WATER**

Evaluation: ✘ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
<b>EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions</b>							
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW32_17/07/17	17-Jul-2017	01-Aug-2017	24-Jul-2017	✘	01-Aug-2017	10-Sep-2017	✔
<b>Amber Glass Bottle - Unpreserved (EP071)</b> GW51_17/07/17, GW62_17/07/17, QC211_17/07/17, GW10_17/07/17, GW26_17/07/17 GW53_17/07/17, GW48_17/07/17, QC212_17/07/17, GW14_17/07/17	17-Jul-2017	20-Jul-2017	24-Jul-2017	✔	20-Jul-2017	29-Aug-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> QC116_17/07/17	17-Jul-2017	08-Aug-2017	31-Jul-2017	✘	08-Aug-2017	31-Jul-2017	✘
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW51_17/07/17, GW62_17/07/17, QC211_17/07/17, QC213_17/07/17, GW10_17/07/17, GW26_17/07/17 GW53_17/07/17, GW48_17/07/17, QC212_17/07/17, QC214_17/07/17, GW14_17/07/17	17-Jul-2017	19-Jul-2017	31-Jul-2017	✔	19-Jul-2017	31-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW32_17/07/17	17-Jul-2017	31-Jul-2017	31-Jul-2017	✔	01-Aug-2017	31-Jul-2017	✘
<b>EP080: BTEXN</b>							
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> QC116_17/07/17	17-Jul-2017	08-Aug-2017	31-Jul-2017	✘	08-Aug-2017	31-Jul-2017	✘
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW51_17/07/17, GW62_17/07/17, QC211_17/07/17, QC213_17/07/17, GW10_17/07/17, GW26_17/07/17 GW53_17/07/17, GW48_17/07/17, QC212_17/07/17, QC214_17/07/17, GW14_17/07/17	17-Jul-2017	19-Jul-2017	31-Jul-2017	✔	19-Jul-2017	31-Jul-2017	✔
<b>Amber VOC Vial - Sulfuric Acid (EP080)</b> GW32_17/07/17	17-Jul-2017	31-Jul-2017	31-Jul-2017	✔	01-Aug-2017	31-Jul-2017	✘
<b>EP231A: Perfluoroalkyl Sulfonic Acids</b>							
<b>HDPE (no PTFE) (EP231X)</b> GW51_17/07/17, GW10_17/07/17	17-Jul-2017	----	----	----	23-Jul-2017	13-Jan-2018	✔
<b>EP231B: Perfluoroalkyl Carboxylic Acids</b>							
<b>HDPE (no PTFE) (EP231X)</b> GW51_17/07/17, GW10_17/07/17	17-Jul-2017	----	----	----	23-Jul-2017	13-Jan-2018	✔
<b>EP231C: Perfluoroalkyl Sulfonamides</b>							
<b>HDPE (no PTFE) (EP231X)</b> GW51_17/07/17, GW10_17/07/17	17-Jul-2017	----	----	----	23-Jul-2017	13-Jan-2018	✔

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 Work Order : EM1709415 Amendment 2  
 Client : AECOM Australia Pty Ltd  
 Project : 60537182



Matrix: **WATER** Evaluation: \* = Holding time breach ; ✓ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis			
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
<b>EP231D: (n:2) Fluorotelomer Sulfonic Acids</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW51_17/07/17,	GW10_17/07/17	17-Jul-2017	----	----	----	23-Jul-2017	13-Jan-2018	✓
<b>EP231P: PFAS Sums</b>								
<b>HDPE (no PTFE) (EP231X)</b> GW51_17/07/17,	GW10_17/07/17	17-Jul-2017	----	----	----	23-Jul-2017	13-Jan-2018	✓



## Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **WATER** Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Laboratory Duplicates (DUP)</b>							
Alkalinity by PC Titrator	ED037-P	6	60	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	3	27	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	4	31	12.90	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	5	31	16.13	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	6	40	15.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	2	18	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	3	14	21.43	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	18	5.56	10.00	✖	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	17	11.76	10.00	✔	NEPM 2013 B3 & ALS QC Standard
pH by PC Titrator	EA005-P	6	52	11.54	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	3	27	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	4	32	12.50	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	5	37	13.51	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	7	61	11.48	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	4	36	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	3	17	17.65	10.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	23	4.35	10.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	7	56	12.50	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	3	26	11.54	10.00	✔	NEPM 2013 B3 & ALS QC Standard
<b>Laboratory Control Samples (LCS)</b>							
Alkalinity by PC Titrator	ED037-P	3	60	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Ammonia as N by Discrete analyser	EK055G	2	27	7.41	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	4	31	12.90	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	3	31	9.68	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	3	40	7.50	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	2	18	11.11	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	14	14.29	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	2	18	11.11	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	5.88	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	27	7.41	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	4	40	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard





Matrix: **WATER** Evaluation: \* = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Laboratory Control Samples (LCS) - Continued</b>							
Total Dissolved Solids (High Level)	EA015H	4	32	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	37	8.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	4	61	6.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	36	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	2	17	11.76	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	56	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
<b>Method Blanks (MB)</b>							
Ammonia as N by Discrete analyser	EK055G	2	27	7.41	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	31	6.45	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	3	31	9.68	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	3	40	7.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	2	18	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Major Cations - Dissolved	ED093F	2	14	14.29	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	2	18	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	27	7.41	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Dissolved Solids (High Level)	EA015H	2	32	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	37	8.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	4	61	6.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	36	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	2	17	11.76	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	56	7.14	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
<b>Matrix Spikes (MS)</b>							
Ammonia as N by Discrete analyser	EK055G	2	27	7.41	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Chloride by Discrete Analyser	ED045G	2	31	6.45	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	3	31	9.68	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	3	40	7.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Fluoride by PC Titrator	EK040P	2	18	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	18	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	2	27	7.41	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Matrix: **WATER**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type	Method	Count		Rate (%)			Quality Control Specification
		QC	Reaular	Actual	Expected	Evaluation	
<b>Analytical Methods</b>							
<b>Matrix Spikes (MS) - Continued</b>							
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	2	40	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	37	8.11	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	4	61	6.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Organic Carbon	EP005	2	36	5.56	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Total Oxidised Sulfur as SO4 2-	ED043	2	17	11.76	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	23	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	56	5.36	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds WF Detection Limits	EP074-WF	2	26	7.69	5.00	✔	NEPM 2013 B3 & ALS QC Standard



## Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
pH by PC Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM (2013) Schedule B(3)
Total Dissolved Solids (High Level)	EA015H	WATER	In house: Referenced to APHA 2540C. A gravimetric procedure that determines the amount of 'filterable' residue in an aqueous sample. A well-mixed sample is filtered through a glass fibre filter (1.2um). The filtrate is evaporated to dryness and dried to constant weight at 180+/-5C. This method is compliant with NEPM (2013) Schedule B(3)
Alkalinity by PC Titrator	ED037-P	WATER	In house: Referenced to APHA 2320 B This procedure determines alkalinity by automated measurement (e.g. PC Titrate) using pH 4.5 for indicating the total alkalinity end-point. This method is compliant with NEPM (2013) Schedule B(3)
Sulfate (Turbidimetric) as SO4 2- by Discrete Analyser	ED041G	WATER	In house: Referenced to APHA 4500-SO4. Dissolved sulfate is determined in a 0.45um filtered sample. Sulfate ions are converted to a barium sulfate suspension in an acetic acid medium with barium chloride. Light absorbance of the BaSO4 suspension is measured by a photometer and the SO4-2 concentration is determined by comparison of the reading with a standard curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Oxidised Sulfur as SO4 2-	ED043	WATER	In house: The sample is treated with Peroxide to convert all Sulfur species to Sulfate. Sulfate in the sample can then be determined by ICPAES and reported as TOS as SO4 2-.
Chloride by Discrete Analyser	ED045G	WATER	In house: Referenced to APHA 4500 Cl - G. The thiocyanate ion is liberated from mercuric thiocyanate through sequestration of mercury by the chloride ion to form non-ionised mercuric chloride. In the presence of ferric ions the liberated thiocyanate forms highly-coloured ferric thiocyanate which is measured at 480 nm APHA 21st edition seal method 2 017-1-L april 2003
Major Cations - Dissolved	ED093F	WATER	In house: Referenced to APHA 3120 and 3125; USEPA SW 846 - 6010 and 6020; Cations are determined by either ICP-AES or ICP-MS techniques. This method is compliant with NEPM (2013) Schedule B(3)  Sodium Adsorption Ratio is calculated from Ca, Mg and Na which determined by ALS in house method QWI-EN/ED093F. This method is compliant with NEPM (2013) Schedule B(3)  Hardness parameters are calculated based on APHA 2340 B. This method is compliant with NEPM (2013) Schedule B(3)
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.



Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl <sub>2</sub> )(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl <sub>2</sub> which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Fluoride by PC Titrator	EK040P	WATER	In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM (2013) Schedule B(3)
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH3 G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO <sub>2</sub> - B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO <sub>3</sub> - F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined separately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite and Nitrate as N (NO <sub>x</sub> ) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO <sub>3</sub> - F. Combined oxidised Nitrogen (NO <sub>2</sub> +NO <sub>3</sub> ) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Reactive Phosphorus as P-By Discrete Analyser	EK071G	WATER	In house: Referenced to APHA 4500-P F Ammonium molybdate and potassium antimonyl tartrate reacts in acid medium with orthophosphate to form a heteropoly acid -phosphomolybdic acid - which is reduced to intensely coloured molybdenum blue by ascorbic acid. Quantification is by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Ionic Balance by PCT DA and Turbi SO4 DA	EN055 - PG	WATER	In house: Referenced to APHA 1030F. This method is compliant with NEPM (2013) Schedule B(3)
Total Organic Carbon	EP005	WATER	In house: Referenced to APHA 5310 B, The automated TOC analyzer determines Total and Inorganic Carbon by IR cell. TOC is calculated as the difference. This method is compliant with NEPM (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Volatile Organic Compounds WF Detection Limits	EP074-WF	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)



<i>Analytical Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with methanol. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers.
<i>Preparation Methods</i>	<i>Method</i>	<i>Matrix</i>	<i>Method Descriptions</i>
Total Oxidisable Sulfur as SO4 2- Prep	ED043-PR	WATER	In house
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (2013) Schedule B(3)
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.



ANZ  
**FGM - Generic Chain of Custody Form**

CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: JM BP BH		Destination Laboratory		
PROJECT MANAGER (PM): Averyll Coyne		SITE:		MOBILE: 0409536240		PHONE:		
PROJECT NUMBER & TASK CO 60537182		P.O. NO.:		EMAIL REPORT TO: Averyll Coyne				
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)				
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL: [Redacted]								Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.
SAMPLE INFORMATION (note: S = Soil, W=Water)				CONTAINER INFORMATION				
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles		
1	GW51	W	17/07/17			12	pH, TDS, TOC TRH (CS-40) PAH Nitrogen oxides/sulphur oxides VOC (ALSEP074-WF) includes BTEXN Ionic chemistry (Na), (Ca), (Mg), (K), (Cl), (HCO3), (NO3), (NH2), (NH4) (PO4), (SO4), (F) (Mn) PFAS - 28 analytes Dissolved metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg) Total Metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)	
2	GW53					10		
3	GW62					10		
4	GW88					10		
5	QC211					4		
6	QC212					4		
7	QC213					1		
8	QC214					1		
9	GW10							
10	GW14							
11	GW32							
12	GW26						X HOLD	
13	QC116					6		
RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:		METHOD OF SHIPMENT:		
Name: <i>[Signature]</i>	Date: 17/07/17	Name:	Date:	Name: <i>[Signature]</i>	Date: 18/7	Cont' Note No:		
Of: <i>[Signature]</i>	Time:	Of:	Time:	Of: <i>[Signature]</i>	Time: 14:00	Transport Co:		
Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airflight Unpreserved Plastic V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airflight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.								

Environmental Division  
 Melbourne  
 Work Order Reference  
**EM1709415**



Telephone : + 61-3-8549 9600

ANZ  
**FQM - Generic Chain of Custody Form**

**AECOM**

Q4AN(EV)-007-FM1

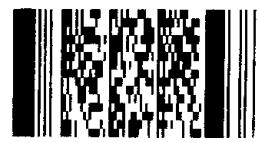
CONSULTANT: AECOM		ADDRESS / OFFICE:		SAMPLER: JM BP BH		Destination Laboratory											
PROJECT MANAGER (PM): Averyll Coyne		SITE:		MOBILE: 0409536240		PHONE:											
PROJECT NUMBER & TASK GO 80537182		P.O. NO.:		EMAIL REPORT TO: Averyll Coyne													
RESULTS REQUIRED (Date):		QUOTE NO.:		ANALYSIS REQUIRED including SUTES (note - suite codes must be listed to attract suite prices)													
[REDACTED]		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:		PH, TDS, TOC TRH (CS-40) PAH Nitrogen oxides/sulphur oxides VOC (ALSERV74-NF) includes BTEXN Ionic chemistry (Ni, Cr, Mn, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg) (fml) PFAS - 28 analytes Dissolved metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg) Total Metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)				Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.									
								SAMPLE INFORMATION (note: S = Soil, W = Water)		CONTAINER INFORMATION							
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	PH, TDS, TOC	TRH (CS-40)	PAH	Nitrogen oxides/sulphur oxides	VOC (ALSERV74-NF) includes BTEXN	Ionic chemistry (Ni, Cr, Mn, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg) (fml)	PFAS - 28 analytes	Dissolved metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)	Total Metals (As, Cd, Cr, Cu, Pb, Ni, Zn, Al, Fe, Se, Hg)	HOLD	
1	GW51-17/07/17	W	17/07/17			12	/	/	/	/	/	/	/	/	/	/	
2	GW53-17/07/17					10	/	/	/	/	/	/	/	/	/	/	
3	GW62-17/07/17					10	/	/	/	/	/	/	/	/	/	/	
4	GW48-17/07/17					10	/	/	/	/	/	/	/	/	/	/	
5	QC211-17/07/17					4	/	/	/	/	/	/	/	/	/	/	
6	QC212-17/07/17					4	/	/	/	/	/	/	/	/	/	/	
7	QC213-17/07/17					1	/	/	/	/	/	/	/	/	/	/	
8	QC214-17/07/17					1	/	/	/	/	/	/	/	/	/	/	
9	GW10-17/07/17						/	/	/	/	/	/	/	/	/	/	
10	GW14-17/07/17						/	/	/	/	/	/	/	/	/	/	
11	GW32-17/07/17						/	/	/	/	/	/	/	/	/	/	
12	GW26-17/07/17						/	/	/	/	/	/	/	/	/	/	X HOLD
13	QC116-17/07/17					6	/	/	/	/	/	/	/	/	/	/	

AKC  
 18/7/2017

SCANNED

Environmental Division  
 Melbourne  
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**EM1709415**

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RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:		METHOD OF SHIPMENT	
Name: [Signature]	Date: 17/07/17	Name:	Date:	Name: [Signature]	Date: 18/7/17	Date:	Con' Note No:
Of:	Time:	Of:	Time:	Of:	Time: 14:00	Time:	Transport Co:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic  
 V = VDA Vial HCl Preserved; VB = VDA Vial Sodium Bisulphate Preserved; VS = VDA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic;  
 F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.  
 Soil Container Codes: Jar = Unpreserved glass jar

COC Page of

ANZ  
FGM - Generic Chain of Custody Form

CONSULTANT: AECOM			ADDRESS / OFFICE:			SAMPLER: JM BP BH			Destination Laboratory											
PROJECT MANAGER (PM): Averyll Coyne			SITE:			MOBILE: 0409536240			PHONE:											
PROJECT NUMBER & TASK CO 80537182			P.O. NO.:			EMAIL REPORT TO: Averyll Coyne														
RESULTS REQUIRED (Date):			QUOTE NO.:			ANALYSIS REQUIRED (including BUTES (role - suite codes must be listed to attract suite prices))														
[REDACTED]			COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:			pH, TOB, TOC	TRH (CSL-01)	PAH	Nitrogen oxides/sulphur oxides	VOC (ALSEP774-WF) includes BTEX	Basic chemistry (Al, Ca, (Mg), (K), (Cl), (NO3), (NO2), (NH4), (NH3) proc, (SO4), (F), (Mn))	PFAS - 28 analytes	Dioxin/Furans (MS, OC, Ch, Cu, Pb, Al, Zn, Fe, Ni, Sn, Se)	Total Metals (Cd, Cr, Pb, Ni, Zn, Al, Fe, Mn, Cu)	BTEX	TKH (Co-C9)	HOLD	Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LODs etc.		
SAMPLE INFORMATION (mat: S = Soil, W=Water)					CONTAINER INFORMATION															
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles														
1	GW51-17/07/17	W	17/07/17			12	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
2	GW53-17/07/17					10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
3	GW62-17/07/17					10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
4	GWAS-17/07/17					10	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
5	QC211-17/07/17					1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
6	QC212-17/07/17					1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
7	QC213-17/07/17					1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
8	QC214-17/07/17	✓	✓			1	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
9	GW10-17/07/17						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
10	GW14-17/07/17						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
11	GW32-17/07/17						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			
12	GW26-17/07/17						✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	X HOLD		
13	QC116-17/07/17	✓	✓			6	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓			

RELINQUISHED BY:				RECEIVED BY:				RECEIVED BY:				METHOD OF SHIPMENT:			
Name: [Signature]		Date: 17/07/17		Name: [Signature]		Date: 18/7		Name: [Signature]		Date: 18/0		Name: [Signature]		Date: [Signature]	
Of: [Signature]		Time:		Of: [Signature]		Time:		Of: [Signature]		Time:		Of: [Signature]		Time:	

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; B = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airtight Unpreserved Plastic  
 V = VOA Vial HCl Preserved; VS = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airtight Unpreserved Vial; SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation bottle; SP = Sulfuric Preserved Plastic;  
 F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Buffer; ST = Sterile Bottle; ABS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag  
 Soil Container Codes: Jar = Unpreserved glass jar

Environmental Division  
Melbourne  
Work Order Reference  
**EM1709415**

Telephone: + 61-3-8549 9800



9415

**Ryan O'Donnell**

---

**From:** Shirley LeCornu  
**Sent:** Monday, 31 July 2017 9:44 AM  
**To:** Ryan O'Donnell  
**Subject:** FW: Fishermens Bend EM1709371 & EM1709192

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

Hi Ryan

Can you please organise for EM1709371 and EN1709192 to be amended and for the samples below to be analysed.

Thanks

Shirley

**Shirley LeCornu**  
Client Services Officer – Springvale  
Environmental



**T** +61 3 8549 9600 **D** +61 3 8549 9630  
**F** +61 3 8549 9626  
[Shirley.lecornu@alsglobal.com](mailto:Shirley.lecornu@alsglobal.com)  
2-4 Westall Rd  
Springvale Vic 3171  
Australia

**We are keen for your feedback!** [Please click here for your 1 question survey](#)

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- EnviroMail™ 112 – Algal Capabilities
- EnviroMail™ 111 – Analysis of VOCs by Thermal Desorption Analysis
- EnviroMail™ 110 – Identifying Hidden PFAS Chemicals in Environmental Samples and Firefighting Foams
- EnviroMail™ 00 – Summary of all EnviroMails™ by Category

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**From:** Muller, Jacob [mailto:Jacob.Muller@aecom.com]  
**Sent:** Monday, 31 July 2017 8:59 AM  
**To:** Melbourne Enviro Services <MelbourneEnviroSer@alsglobal.com>  
**Subject:** FW: Fishermens Bend EM1709371 & EM1709192

Hi ALS

I as after sending the below email to Peter but he appears to be out of the office, it possible to get someone else to give me a hand with this?

Regards

**Jacob Muller**

Graduate Environmental Scientist  
D +61 3 9653 2616  
[Jacob.Muller@aecom.com](mailto:Jacob.Muller@aecom.com)

**AECOM**

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[aecom.com](http://aecom.com)

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**From:** Muller, Jacob

**Sent:** Monday, 31 July 2017 8:55 AM

**To:** 'Peter Ravlic'

**Subject:** Fishermens Bend EM1709371 & EM1709192

Hi Peter

The follow samples were accidently left blank on the COC 1709371

GW69  
GW61 (PFAS)  
GW65  
GW30  
GW74

And on EM1709192

GMW03

Would it be possible to get these tested? Hopefully you still have the samples, also is GW32 still on hold.

Regards,

**Jacob Muller**

Graduate Environmental Scientist  
D +61 3 9653 2616  
[Jacob.Muller@aecom.com](mailto:Jacob.Muller@aecom.com)

**AECOM**

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ALS Group: Click [here](#) to report this email as spam.



## Shirley LeCornu

---

**From:** Muller, Jacob <Jacob.Muller@aecom.com>  
**Sent:** Monday, 31 July 2017 10:03 AM  
**To:** Shirley LeCornu  
**Subject:** RE: Fishermens Bend EM1709371 & EM1709192  
**Attachments:** updated COCs.pdf

Hi Shirley

Thanks for that, I have attached a updated COC for your records, Also please also proceed to test GW32

Regards

**Jacob Muller**  
Graduate Environmental Scientist  
D +61 3 9653 2616  
[Jacob.Muller@aecom.com](mailto:Jacob.Muller@aecom.com)

**AECOM**  
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[aecom.com](http://aecom.com)

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---

**From:** Shirley LeCornu [mailto:[shirley.lecornu@alsglobal.com](mailto:shirley.lecornu@alsglobal.com)]  
**Sent:** Monday, 31 July 2017 9:43 AM  
**To:** Muller, Jacob; Melbourne Enviro Services  
**Subject:** RE: Fishermens Bend EM1709371 & EM1709192

Hi Jacob

I will organise for the work orders to be amended and analysis added.

Analysis added will be appropriate to the bottles received. There will be some holding time breaches. Please scrutinise your SRN carefully and let me know if any changes are required.

Thanks

Shirley

**Shirley LeCornu**  
Client Services Officer – Springvale  
Environmental



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# Summary of Groundwater Results

## APPENDIX D





						Organic Matter					b-Chemical Parar							Total Recoverable Hydrocarbons											Monocyclic Aromatic Hydrocarbons												
						Total Organic Carbon	Total Dissolved Solids	pH (Lab)	C6-C10 fraction	C6-C10 fraction (minus BTEX(F))	>C10-C16 fraction	>C10-C16 (minus Naphthalene)(F2)	>C16-C3.4 fraction	>C3.4-C4.0 fraction	>C10-C40 fraction (sum)	Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene	Total Xylenes	Styrene	Isopropylbenzene	n-Butylbenzene	n-Propylbenzene	p-Isopropyltoluene	sec-Butylbenzene	tert-Butylbenzene	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Total BTEX	Naphthalene (VOC)	Naphthalene	Acenaphthylene	Acenaphthene	Anthracene	Fluorene				
						mg/L	mg/L	pH Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
EQL						1	10	0.01	20	20	100	100	100	100	100																										
60537182 Agriculture, Parks and Gardens																																									
60537182 Buildings and Structures																																									
60537182 Maintenance of Ecosystems								<5.5 <sup>#3</sup>																																	
60537182 Potable Water Supply									1500 <sup>#23</sup>																																
60537182 Primary Contact Recreation										100 <sup>#23</sup>																															
60537182 Stock Watering																																									
60537182 Vapour Intrusion																																									

Location	Field ID	Sampled Date Time	Lab Report	SampleCode	Sample Type	52	2,960	7.33	<20	<20	190	190	400	<100	590	2	4	<1	2	<1	-	<1	1	<1	<1	<1	<1	2	<1	-	-	<1	<1	<1	<1	<1	<1	<1		
GW01	GW01	20/11/2015	EM1517387	EM1517387001	Normal	-	2,960	7.33	<20	<20	190	190	400	<100	590	2	4	<1	2	<1	-	<1	1	<1	<1	<1	<1	2	<1	-	-	<1	<1	<1	<1	<1	<1	<1		
GW01	GW01	17/05/2016	EM1605749	EM1605749001	Normal	-	2,780	7.16	30	30	270	270	640	<100	910	<1	3	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
GW01	GW01_10/07/17	10/07/2017	EM1709029	EM1709029001	Normal	40	2,910	7.68	<20	<20	120	120	240	<100	360	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
GW02	GW02	20/11/2015	EM1517387	EM1517387002	Normal	40	1,910	6.85	30	30	270	270	420	<100	690	<1	<1	<1	<1	<1	<1	3	<1	3	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
GW02	GW02	18/05/2016	EM1605749	EM1605749004	Normal	-	1,770	7.16	20	20	180	180	220	<100	400	<1	<2	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW02	GW02_14/07/17	14/07/2017	EM1709371	EM1709371020	Normal	37	1,820	7.36	30	30	240	240	440	<100	680	<1	<1	<1	<1	<1	<1	3	<1	2	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
GW03	GW03	19/11/2015	EM1517384	EM1517384004	Normal	-	1,390	7.1	<20	<20	<100	<100	<100	<100	<100	2	<2	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
GW03	GW03	17/05/2016	EM1605749	EM1605749002	Normal	-	1,400	7.58	<20	<20	<100	<100	110	<100	110	<1	<1	<1	<1	<1	<1	3	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
GW03	GW03_11/07/17	11/07/2017	EM1709106	EM1709106012	Normal	11	1,410	7.76	<20	<20	<100	<100	<100	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
GW04	GW04	19/11/2015	EM1517384	EM1517384001	Normal	-	787	6.38	<20	<20	<100	<100	<100	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW04	GW04	17/05/2016	EM1605749	EM1605749003	Normal	-	1,120	6.96	<20	<20	<100	<100	<100	<100	<100	<1	<2	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW04	GW04_11/07/17	11/07/2017	EM1709106	EM1709106013	Normal	4	814	7.8	<20	<20	<100	<100	<100	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW05	GW05	18/11/2015	EM1517312 / EM1517387	EM1517312016 / EM1517387004	Normal	17	1,330	7.8	<20	<20	<100	-	440	<100	440	<1	<2	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW05	GW05	17/05/2016	EM1605749	EM1605749004	Normal	-	1,250	6.98	<20	<20	<100	<100	380	<100	380	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW05	GW05_11/07/17	11/07/2017	EM1709106	EM1709106010	Normal	17	1,290	7.89	<20	<20	<100	<100	<100	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW06	GW06	20/11/2015	EM1517387	EM1517387003	Normal	35	1,550	6.63	<20	<20	<100	<100	<100	<100	<100	<1	<2	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW06	GW06	16/05/2016	EM1605749	EM1605749005	Normal	-	3,360	6.8	<20	<20	<100	<100	140	<100	140	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW06	GW06_11/07/17	11/07/2017	EM1709106	EM1709106016	Normal	46	2,350	7.68	<20	<20	<100	<100	<100	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW07	GW07	19/11/2015	EM1517384	EM1517384003	Normal	-	1,250	7.25	<20	<20	<100	<100	<100	<100	<100	<1	<2	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW07	GW07	17/05/2016	EM1605749	EM1605749006	Normal	-	1,370	7.3	<20	<20	<100	<100	110	<100	110	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW07	GW07_10/07/17	10/07/2017	EM1709029	EM1709029002	Normal	21	1,380	7.28	<20	<20	<100	<100	<100	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW08	GW08	19/11/2015	EM1517384	EM1517384006	Normal	-	996	7.03	<20	<20	<100	<100	<100	<100	<100	<1	<2	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW08	GW08	17/05/2016	EM1605749	EM1605749007	Normal	-	1,020	7.44	<20	<20	<100	<100	<100	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW08	GW08_14/07/17	14/07/2017	EM1709371	EM1709371001	Normal	10	956	7.43	<20	<20	<100	<100	<100	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW09	GW09	19/11/2015	EM1517384	EM1517384002	Normal	-	1,240	7.1	<20	<20	<100	<100	<100	<100	<100	<1	<2	<2	<2	<2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
GW09	GW09	17/05/2016	EM1605749	EM1605749008	Normal	-	1,160	7.53	<20	<20	<100	<100	<100	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW09	GW09_11/07/17	11/07/2017	EM1709106	EM1709106011	Normal	12	985	7.71	<20	<20	<100	<100	<100	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW10	GW10	18/11/2015	EM1517312	EM1517312017	Normal	10	642	6.64	<20	<20	<100	<100	<100	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW10	GW10	18/05/2016	EM1605749	EM1605749047	Normal	-	557	6.38	<20	<20	<100	<																												





Appendix D  
Groundwater Results  
Fishermans Bend  
60537182

EQL	Organic Matter		p-Chemical Parar		Total Recoverable Hydrocarbons								Monocyclic Aromatic Hydrocarbons																						
	Total Organic Carbon	Total Dissolved Solids	pH (Lab)		C6-C10 fraction	C6-C10 fraction (minus BTEX(F1))	>C10-C16 fraction	>C10-C16 (minus Naphthalene)(F2)	>C16-C34 fraction	>C34-C40 fraction	>C10-C40 fraction (sum)	Benzene	Toluene	Ethylbenzene	m,p-Xylene	o-Xylene	Total Xylenes	Styrene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	tert-butylbenzene	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Total BTEX	Naphthalene (VOC)	Naphthalene	Acenaphthylene	Acenaphthene	Anthracene	Fluorene		
	mg/L	mg/L	pH Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
EQ1	1	10	0.01		20	20	100	100	100	100	100	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	1	5	1	1	1	1	1	
60537182 Agriculture, Parks and Gardens																																			
60537182 Buildings and Structures			<5.5 <sup>#3</sup>								600 <sup>#5</sup>	900 <sup>#6</sup>	180 <sup>#7</sup>	5 <sup>#7</sup>		350 <sup>#7</sup>																			
60537182 Maintenance of Ecosystems					1500 <sup>#23</sup>		100 <sup>#23</sup>		900 <sup>#24</sup>			1 <sup>#11</sup>	25 <sup>#12</sup>	3 <sup>#12</sup>			20 <sup>#12</sup>	4 <sup>#12</sup>	450 <sup>#13</sup>	1000 <sup>#13</sup>	660 <sup>#13</sup>	2000 <sup>#13</sup>	690 <sup>#13</sup>	15 <sup>#13</sup>	120 <sup>#13</sup>					90 <sup>#6</sup>	90 <sup>#6</sup>			1.5 <sup>#7</sup>	1 <sup>#7</sup>
60537182 Potable Water Supply												1 <sup>#11</sup>	800 <sup>#11</sup>	300 <sup>#11</sup>			600 <sup>#11</sup>	30 <sup>#11</sup>	450 <sup>#11</sup>	1000 <sup>#11</sup>	660 <sup>#11</sup>	2000 <sup>#11</sup>	690 <sup>#11</sup>	15 <sup>#11</sup>	120 <sup>#11</sup>					6.1 <sup>#13</sup>	6.1 <sup>#13</sup>	530 <sup>#13</sup>	1800 <sup>#13</sup>	290 <sup>#13</sup>	
60537182 Primary Contact Recreation												1 <sup>#18</sup>	800 <sup>#18</sup>	300 <sup>#18</sup>			600 <sup>#18</sup>	30 <sup>#18</sup>	450 <sup>#18</sup>	1000 <sup>#18</sup>	660 <sup>#18</sup>	2000 <sup>#18</sup>	690 <sup>#18</sup>	15 <sup>#18</sup>	120 <sup>#18</sup>					6.1 <sup>#13</sup>	6.1 <sup>#13</sup>	530 <sup>#13</sup>	1800 <sup>#13</sup>	290 <sup>#13</sup>	
60537182 Stock Watering												800 <sup>#22</sup>	800 <sup>#22</sup>	300 <sup>#22</sup>			600 <sup>#22</sup>	30 <sup>#22</sup>	450 <sup>#22</sup>	1000 <sup>#22</sup>	660 <sup>#22</sup>	2000 <sup>#22</sup>	690 <sup>#22</sup>	15 <sup>#22</sup>	120 <sup>#22</sup>					6.1 <sup>#13</sup>	6.1 <sup>#13</sup>	530 <sup>#13</sup>	1800 <sup>#13</sup>	290 <sup>#13</sup>	
60537182 Vapour Intrusion																																			

Location	Field ID	Sampled Date Time	Lab Report	SampleCode	Sample Type																																
GW70	GW70_160517	16/05/2017	EM1706246	EM1706246001	Normal	8	416	7.11	<20	<20	<100	<100	<100	<100	<100	<100	<1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
GW70	GW70_13/7/17	13/07/2017	EM1709231	EM1709231010	Normal	9	474	6.66	<20	<20	<100	<100	<100	<100	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW72	GW72_120517	12/05/2017	EM1706071	EM1706071003	Normal	8	580	6.48	<20	<20	<100	<100	100	<100	100	<100	<1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
GW72	GW72_14/07/17	14/07/2017	EM1709371	EM1709371004	Normal	8	562	6.52	<20	<20	<100	<100	<100	<100	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW73	GW73_11/05/17	11/05/2017	EM1705994	EM1705994008	Normal	9	614	7.49	<20	<20	<100	<100	<100	<100	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW73	GW73_13/7/17	13/07/2017	EM1709231	EM1709231011	Normal	13	881	7.58	<20	<20	<100	<100	<100	<100	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW74	GW74_10/05/17	10/05/2017	EM1705994	EM1705994002	Normal	10	1,030	7.35	<20	<20	<100	<100	<100	<100	<100	<100	<1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
GW74	GW74_14/07/17	14/07/2017	EM1709371	EM1709371011	Normal	11	1,090	7.3	<20	<20	<100	<100	<100	<100	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW75	GW75_120517	12/05/2017	EM1706071	EM1706071004	Normal	4	616	6.27	<20	<20	<100	<100	<100	<100	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW75	GW75_14/07/17	14/07/2017	EM1709371	EM1709371005	Normal	4	570	7.06	<20	<20	<100	<100	120	<100	120	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW76	GW76_10/05/17	10/05/2017	EM1705994	EM1705994003	Normal	12	1,200	7.53	<20	<20	<100	<100	140	<100	140	<100	<1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
GW76	GW76_13/7/17	13/07/2017	EM1709231	EM1709231006	Normal	13	1,330	7.54	<20	<20	<100	<100	270	<100	270	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW77	GW77_10/05/17	10/05/2017	EM1705994	EM1705994001	Normal	5	409	7.77	<20	<20	<100	<100	140	<100	140	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW77	GW77_13/7/17	13/07/2017	EM1709231	EM1709231007	Normal	4	440	7.54	<20	<20	<100	<100	<100	<100	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW80	GW80_8/5/17	8/05/2017	EM1705809 / EM1707203	EM1705809002 / EM1707203004	Normal	17	754	6.56	<20	<20	<100	<100	<100	<100	<100	<100	<1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
GW80	GW80_14/07/17	14/07/2017	EM1709371	EM1709371002	Normal	17	769	7.19	<20	<20	<100	<100	<100	<100	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW81	GW81_8/5/17	8/05/2017	EM1705809 / EM1707203	EM1705809001 / EM1707203005	Normal	29	1,140	7.28	<20	<20	<100	<100	1,920	150	2,070	<100	<1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
GW81	GW81_14/07/17	14/07/2017	EM1709371	EM1709371003	Normal	28	1,200	7.08	<20	<20	<100	<100	<100	<100	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GW82	GW82_9/5/17	9/05/2017	EM1705809 / EM1707203	EM1705809005 / EM1707203006	Normal	7	1,740	6.46	<20	<20	<100	<100	<100	<100	<100	<100	<1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
GW82	GW82_13/7/17	13/07/2017	EM1709231	EM1709231008	Normal	6	2,080	7.56	<20	<20	<100	<100	<100	<100	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
GMW83	GMW83_11/05/17	11/05/2017	EM1705994	EM1705994014	Normal	4	851	6.17	<20	<20	<100	<100	<100	<100	<100	<100	<1	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
MW1333_02	MW1333_02_120517	12/05/2017	EM1706071	EM1706071006	Normal	27	1,140	7.04	<20	<20	<100	<100	110	340	<100	<100	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
MW1333_02	MW1333_02_12/07/17	12/07/2017	EM1709192	EM1709192019	Normal	25	857	7.48	<20	<20	<100	<100	<																								







Appendix D  
Groundwater Results  
Fishermans Bend  
60537182

	Polynuclear Aromatic Hydrocarbons													Metals																		
	Phenanthrene	Fluoranthene	Benz(a)anthracene	Benzo(k)fluoranthene	Benzo(b)fluoranthene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (zero)	Chrysene	Pyrene	Benzo(g,h,i)perylene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Sum of PAHs	Aluminium	Aluminium (Filtered)	Arsenic	Arsenic (Filtered)	Cadmium	Cadmium (Filtered)	Chromium	Chromium (Filtered)	Copper	Copper (Filtered)	Iron	Iron (Filtered)	Lead	Lead (Filtered)	Manganese	Manganese (Filtered)	Mercury	Mercury (Filtered)	
EQL	1	1	1	1	1	0.5	0.5	1	1	1	1	1	0.5	0.01	0.01	0.001	0.001	0.0001	0.0001	0.001	0.001	0.001	0.001	0.05	0.05	0.001	0.001	0.001	0.001	0.001	0.001	
60537182_Agriculture, Parks and Gardens														5 <sup>#1</sup>	5 <sup>#1</sup>	0.1 <sup>#1</sup>	0.1 <sup>#1</sup>	0.01 <sup>#1</sup>	0.01 <sup>#1</sup>	0.1 <sup>#1</sup>	0.1 <sup>#1</sup>	0.1 <sup>#1</sup>	0.1 <sup>#1</sup>	0.2 <sup>#1</sup>	0.2 <sup>#1</sup>	0.2 <sup>#1</sup>	0.2 <sup>#1</sup>	0.2 <sup>#1</sup>	0.2 <sup>#1</sup>	0.2 <sup>#1</sup>	0.2 <sup>#1</sup>	
60537182_Buildings and Structures																																
60537182_Maintenance of Ecosystems	4 <sup>#7</sup>													0.0005 <sup>#7</sup>	0.0005 <sup>#7</sup>	0.0045 <sup>#7</sup>	0.0045 <sup>#7</sup>	0.0014 <sup>#8</sup>	0.0014 <sup>#8</sup>	0.0044 <sup>#8</sup>	0.0044 <sup>#8</sup>	0.003 <sup>#8</sup>	0.003 <sup>#8</sup>	0.3 <sup>#7</sup>	0.3 <sup>#7</sup>	0.0066 <sup>#8</sup>	0.0066 <sup>#8</sup>	0.08 <sup>#7</sup>	0.08 <sup>#7</sup>	0.0007 <sup>#8</sup>	0.0007 <sup>#8</sup>	
60537182_Potable Water Supply		800 <sup>#13</sup>	0.12 <sup>#13</sup>	3.4 <sup>#13</sup>	340 <sup>#13</sup>	0.01 <sup>#11</sup>		34 <sup>#13</sup>	120 <sup>#13</sup>		0.034 <sup>#13</sup>	0.34 <sup>#13</sup>		0.2 <sup>#12</sup>	0.2 <sup>#12</sup>	0.01 <sup>#11</sup>	0.01 <sup>#11</sup>	0.002 <sup>#11</sup>	0.002 <sup>#11</sup>	0.05 <sup>#11</sup>	0.05 <sup>#11</sup>	1 <sup>#12</sup>	1 <sup>#12</sup>	0.3 <sup>#12</sup>	0.3 <sup>#12</sup>	0.01 <sup>#11</sup>	0.01 <sup>#11</sup>	0.1 <sup>#12</sup>	0.1 <sup>#12</sup>	0.001 <sup>#11</sup>	0.001 <sup>#11</sup>	
60537182_Primary Contact Recreation		8000 <sup>#15</sup>	1.2 <sup>#15</sup>	34 <sup>#15</sup>	3400 <sup>#15</sup>	0.1 <sup>#16</sup>		340 <sup>#15</sup>	1200 <sup>#15</sup>		0.34 <sup>#15</sup>	3.4 <sup>#15</sup>		0.2 <sup>#12</sup>	0.2 <sup>#12</sup>	0.1 <sup>#16</sup>	0.1 <sup>#16</sup>	0.02 <sup>#16</sup>	0.02 <sup>#16</sup>	0.5 <sup>#16</sup>	0.5 <sup>#16</sup>	20 <sup>#16</sup>	20 <sup>#16</sup>	0.3 <sup>#12</sup>	0.3 <sup>#12</sup>	0.1 <sup>#16</sup>	0.1 <sup>#16</sup>	0.5 <sup>#16</sup>	0.5 <sup>#16</sup>	0.01 <sup>#16</sup>	0.01 <sup>#16</sup>	
60537182_Stock Watering		800 <sup>#13</sup>	0.12 <sup>#13</sup>	3.4 <sup>#13</sup>	340 <sup>#13</sup>	0.01 <sup>#16</sup>		34 <sup>#13</sup>	120 <sup>#13</sup>		0.034 <sup>#13</sup>	0.34 <sup>#13</sup>		5 <sup>#19</sup>	5 <sup>#19</sup>	0.5 <sup>#19</sup>	0.5 <sup>#19</sup>	0.01 <sup>#19</sup>	0.01 <sup>#19</sup>	0.5 <sup>#19</sup>	0.5 <sup>#19</sup>	0.5 <sup>#20</sup>	0.5 <sup>#20</sup>			0.1 <sup>#19</sup>	0.1 <sup>#19</sup>	0.5 <sup>#19</sup>	0.5 <sup>#19</sup>	0.002 <sup>#19</sup>	0.002 <sup>#19</sup>	
60537182_Vapour Intrusion																																

Location	Field ID	Sampled Date Time	Lab Report	SampleCode	Sample Type	Phenanthrene	Fluoranthene	Benz(a)anthracene	Benzo(k)fluoranthene	Benzo(b)fluoranthene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (zero)	Chrysene	Pyrene	Benzo(g,h,i)perylene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Sum of PAHs	Aluminium	Aluminium (Filtered)	Arsenic	Arsenic (Filtered)	Cadmium	Cadmium (Filtered)	Chromium	Chromium (Filtered)	Copper	Copper (Filtered)	Iron	Iron (Filtered)	Lead	Lead (Filtered)	Manganese	Manganese (Filtered)	Mercury	Mercury (Filtered)	
GW70	GW70_160517	16/05/2017	EM1706246	EM1706246001	Normal	<1	<1	<1	<1	<1	<0.5	<0.5	<1	<1	<1	<1	<1	<0.5	14.7	0.07	0.03	0.01	<0.0001	<0.0001	0.04	0.002	0.007	<0.001	19.3	1.51	0.02	<0.001	0.073	0.022	<0.001	<0.001	
GW70	GW70_13/7/17	13/07/2017	EM1709231	EM1709231010	Normal	<1	<1	<1	<1	<1	<0.5	<0.5	<1	<1	<1	<1	<1	<0.5	61.4	0.07	0.1	0.007	<0.0001	<0.0001	0.151	0.001	0.03	<0.001	80	1.93	0.076	<0.001	0.22	0.016	<0.001	<0.001	
GW72	GW72_120517	12/05/2017	EM1706071	EM1706071003	Normal	<1	<1	<1	<1	<1	<0.5	<0.5	<1	<1	<1	<1	<1	<0.5	3.28	0.05	0.024	0.015	<0.0003	<0.0001	0.015	<0.001	0.016	<0.001	18.6	10.8	0.009	<0.001	-	0.337	<0.001	<0.001	
GW72	GW72_14/07/17	14/07/2017	EM1709371	EM1709371004	Normal	<1	<1	<1	<1	<1	<0.5	<0.5	<1	<1	<1	<1	<1	<0.5	0.3	<0.01	0.005	<0.001	<0.0001	<0.0001	0.002	<0.001	0.002	<0.001	4.87	0.81	0.001	<0.001	0.063	0.012	<0.001	<0.001	
GW73	GW73_11/5/17	11/05/2017	EM1705994	EM1705994008	Normal	<1	<1	<1	<1	<1	<0.5	<0.5	<1	<1	<1	<1	<1	<0.5	5.04	0.05	0.009	0.002	<0.0002	<0.0001	0.015	0.001	0.026	<0.001	11.7	2.09	0.036	<0.001	0.207	0.172	<0.001	<0.001	
GW73	GW73_13/7/17	13/07/2017	EM1709231	EM1709231011	Normal	<1	<1	<1	<1	<1	<0.5	<0.5	<1	<1	<1	<1	<1	<0.5	6.1	0.02	0.014	0.005	0.0002	<0.0001	0.015	0.001	0.02	<0.001	13	2.58	0.024	<0.001	0.197	0.147	<0.001	<0.001	
GW74	GW74_10/5/17	10/05/2017	EM1705994	EM1705994002	Normal	<1	<1	<1	<1	<1	<0.5	<0.6	<1	<1	<1	<1	<1	<0.6	17.2	0.04	0.039	0.007	0.0002	<0.0001	0.056	0.001	0.018	<0.001	40.2	6.45	0.21	<0.001	0.544	0.408	<0.001	<0.001	
GW74	GW74_14/07/17	14/07/2017	EM1709371	EM1709371011	Normal	<1	<1	<1	<1	<1	<0.5	<0.5	<1	<1	<1	<1	<1	<0.5	22.5	0.01	0.061	0.003	0.0003	<0.0001	0.079	0.001	0.031	0.003	64.8	7.57	0.404	0.001	0.61	0.39	0.001	<0.001	
GW75	GW75_120517	12/05/2017	EM1706071	EM1706071004	Normal	1.4	1.9	<1	<1	1.2	1.1	1.2	<1	1.8	<1	<1	<1	<1	10.9	1.48	0.04	0.011	0.006	<0.0001	<0.0001	0.004	<0.001	0.017	<0.001	3.57	0.72	0.068	0.002	0.135	<0.001	<0.001	
GW75	GW75_14/07/17	14/07/2017	EM1709371	EM1709371005	Normal	1.6	3.1	1.4	<1	1.9	1.8	2.2	1.1	2.9	1.3	<1	<1	<1	16.3	1.85	<0.01	0.012	<0.001	0.0002	<0.0001	0.006	<0.001	0.024	<0.001	4.57	0.07	0.114	<0.001	0.108	0.102	0.005	<0.001
GW76	GW76_10/5/17	10/05/2017	EM1705994	EM1705994003	Normal	<1	<1	<1	<1	<1	<0.5	<0.5	<1	<1	<1	<1	<1	<0.5	13.8	0.04	0.026	0.002	0.0012	<0.0001	0.05	<0.001	0.017	<0.001	24.1	1.06	0.024	<0.001	0.321	0.21	<0.001	<0.001	
GW76	GW76_13/7/17	13/07/2017	EM1709231	EM1709231006	Normal	<1	<1	<1	<1	<1	<0.5	<0.5	<1	<1	<1	<1	<1	<0.5	25.4	0.01	0.033	0.002	0.0012	<0.0001	0.071	<0.001	0.026	<0.001	40.3	1.43	0.028	<0.001	0.266	0.141	<0.001	<0.001	
GW77	GW77_10/5/17	10/05/2017	EM1705994	EM1705994001	Normal	<1	<1	<1	<1	<1	<0.5	<0.5	<1	<1	<1	<1	<1	<0.5	4.78	0.04	0.012	0.002	0.0013	<0.0001	0.018	<0.001	0.01	<0.001	13.6	0.95	0.039	<0.001	0.21	0.134	<0.001	<0.001	
GW77	GW77_13/7/17	13/07/2017	EM1709231	EM1709231007	Normal	<1	<1	<1	<1	<1	<0.5	<0.5	<1	<1	<1	<1	<1	<0.5	2.21	<0.01	0.005	0.001	0.0002	<0.0001	0.006	<0.001	0.004	<0.001	6.73	1.23	0.007	<0.001	0.154	0.109	<0.001	<0.001	
GW80	GW80_8/5/17	8/05/2017	EM1705809 / EM1707203	EM1705809002 / EM1707203004	Normal	<1	<1	<1	<1	<1	<0.5	<0.5	<1	<1	<1	<1	<1	<0.5	2.02	0.03	0.009	0.006	<0.0001	<0.0001	0.008	0.002	0.006	<0.001	12.5	8.48	0.004	<0.001	0.34	0.334	<0.001	<0.001	
GW80	GW80_14/07/17	14/07/2017	EM1709371	EM1709371002	Normal	<1	<1	<1	<1	<1	<0.5	<0.5	<1	<1	<1	<1	<1	<0.5	1.27	0.02	0.006	<0.001	<0.0001	0.0003	0.005	0.002	0.003	<0.001	11.9	2.9	0.003	<0.001	0.274	0.235	<0.001	<0.001	
GW81	GW81_8/5/17	8/05/2017	EM1705809 / EM1707203	EM1705809001 / EM1707203005	Normal	19.9	169	64.4	22.7	67.2	34.1	55.9	44.5	106	12.3	4.2	16.1	578	2.41	0.02	0.013	0.009	<0.0001	<0.0001	0.01	0.004	0.006	<0.001	20.5	16.7	0.007	<0.001	0.472	0.504	<0.001	<0.001	
GW81	GW81_14/07/17	14/07/2017	EM1709371	EM1709371003	Normal	<1	<1	<1	<1	<1	<0.5	<0.5	<1	<1	<1	<1	<1	<0.5	2.91	0.01	0.01	0.001	<0.0001	<0.0001	0.012	0.002	0.007	<0.001	19.4	5.49	0.011	<0.001	0.331	0.182	<0.001	<0.001	
GW82	GW82_9/5/17	9/05/2017	EM1705809 / EM1707203	EM1705809005 / EM1707203006	Normal	<1	<1	<1	<1	<1	<0.5	<0.5	<1	<1	<1	<1	<1	<0.5	3.16	0.11	0.008	0.004	<0.0001	<0.0001	0.011	0.001	0.008	<0.001	11.3	5.65	0.005	<0.001	0.33	0.336	<0.001	<0.001	
GW82	GW82_13/7/17	13/07/2017	EM1709231	EM1709231008	Normal	<1	<1	<1	<1	<1	<0.5	<0.5	<1	<1	<1	<1	<1	<0.5	1.21	<0.01	0.005	0.002	<0.0001	<0.0001	0.003	<0.001	0.003	<0.001	6.31	2.25	0.001	<0.001	0.238	0.207	<0.001	<0.001	
GMW83	GMW83_11/5/17	11/05/2017	EM1705994	EM1705994014	Normal	<1	<1	<1	<1	<1	<0.5	<0.5	<1	<1	<1	<1	<1	<0.5	2.78	0.1	0.011	<0.001	<0.0001	<0.0001	0.01	0.002	0.005	0.001	3.6	0.07	0.006	<0.001	0.013	0.007	<0.001	<0.001	
MW1333_02	MW1333_02_120517	12/05/2017	EM1706071	EM1706071006	Normal	<1	<1	<1	<1	<1	<0.5	<0.5	<1	<1	<1	<1	<1	<0.5	6.19	0.03	0.012	0.004	<0.0001	<0.0001	0.022	0.003	0.008	<0.001	14.9	1.86	0.01	<0.001	-	0.243	<0.001	<0.001	
MW1333_02	MW1333_02_12/07/17	12/07/2017	EM1709192	EM1709192019	Normal	<1	<1	<1	<1	<1	<0.5	<0.5	<1	<1	<1	<1	<1	<0.5	10.6	0.04	0.02	0.003</															

						Halogenated Aromatic Compounds																																													
						Nickel	Nickel (Filtered)	Selenium	Selenium (Filtered)	Zinc	Zinc (Filtered)	Bromobenzene	Chlorobenzene	2-Chlorotoluene	4-Chlorotoluene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	Dichlorodifluoromethane (Freon 12)	Chloromethane	Vinyl chloride	Bromomethane	Chloroethane	Trichlorofluoromethane (Freon 11)	1,1-Dichloroethene	Iodomethane	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1,1-Trichloroethane	1,1-Dichloropropene	Carbon Tetrachloride	1,2-Dichloroethane	Trichloroethene	Dibromomethane	1,1,2-Trichloroethane	1,3-Dichloropropane	Tetrachloroethene	1,1,1,2-Tetrachloroethane										
						mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L					
EQL						0.001	0.001	0.01	0.01	0.005	0.005	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
60537182 Agriculture, Parks and Gardens						0.2 <sup>#1</sup>	0.2 <sup>#1</sup>	0.02 <sup>#1</sup>	0.02 <sup>#1</sup>	2 <sup>#1</sup>	2 <sup>#1</sup>																																								
60537182 Buildings and Structures																																																			
60537182 Maintenance of Ecosystems						0.2 <sup>#6</sup>	0.2 <sup>#6</sup>	0.003 <sup>#7</sup>	0.003 <sup>#7</sup>	0.023 <sup>#6</sup>	0.023 <sup>#6</sup>																																								
60537182 Potable Water Supply						0.02 <sup>#11</sup>	0.02 <sup>#11</sup>	0.01 <sup>#11</sup>	0.01 <sup>#11</sup>	3 <sup>#12</sup>	3 <sup>#12</sup>	62 <sup>#13</sup>	10 <sup>#12</sup>	240 <sup>#13</sup>	250 <sup>#13</sup>	250 <sup>#13</sup>	1500 <sup>#15</sup>	20 <sup>#12</sup>	40 <sup>#12</sup>	30 <sup>#11</sup>	30 <sup>#11</sup>	200 <sup>#13</sup>	190 <sup>#13</sup>	0.3 <sup>#11</sup>	1 <sup>#11</sup>	2100 <sup>#13</sup>	5200 <sup>#13</sup>	30 <sup>#11</sup>	28 <sup>#13</sup>	60 <sup>#11</sup>	60 <sup>#11</sup>	8000 <sup>#13</sup>	3 <sup>#11</sup>	3 <sup>#11</sup>	20 <sup>#14</sup>	8.3 <sup>#13</sup>	0.41 <sup>#13</sup>	370 <sup>#13</sup>	50 <sup>#11</sup>	5.7 <sup>#13</sup>											
60537182 Primary Contact Recreation						0.2 <sup>#16</sup>	0.2 <sup>#16</sup>	0.1 <sup>#16</sup>	0.1 <sup>#16</sup>	3 <sup>#11</sup>	3 <sup>#11</sup>	62 <sup>#13</sup>	300 <sup>#11</sup>	240 <sup>#13</sup>	250 <sup>#13</sup>	1500 <sup>#15</sup>	20 <sup>#12</sup>	40 <sup>#12</sup>	30 <sup>#11</sup>	30 <sup>#11</sup>	200 <sup>#13</sup>	190 <sup>#13</sup>	0.3 <sup>#11</sup>	1 <sup>#11</sup>	2100 <sup>#13</sup>	5200 <sup>#13</sup>	30 <sup>#11</sup>	28 <sup>#13</sup>	60 <sup>#11</sup>	60 <sup>#11</sup>	8000 <sup>#13</sup>	3 <sup>#11</sup>	3 <sup>#11</sup>	20 <sup>#14</sup>	8.3 <sup>#13</sup>	0.41 <sup>#13</sup>	370 <sup>#13</sup>	50 <sup>#11</sup>	5.7 <sup>#13</sup>												
60537182 Stock Watering						1 <sup>#15</sup>	1 <sup>#15</sup>	0.02 <sup>#19</sup>	0.02 <sup>#19</sup>	20 <sup>#19</sup>	20 <sup>#19</sup>	62 <sup>#13</sup>	300 <sup>#11</sup>	240 <sup>#13</sup>	250 <sup>#13</sup>	1500 <sup>#15</sup>	20 <sup>#12</sup>	40 <sup>#12</sup>	30 <sup>#11</sup>	30 <sup>#11</sup>	200 <sup>#13</sup>	190 <sup>#13</sup>	0.3 <sup>#11</sup>	1 <sup>#11</sup>	2100 <sup>#13</sup>	5200 <sup>#13</sup>	30 <sup>#11</sup>	28 <sup>#13</sup>	60 <sup>#11</sup>	60 <sup>#11</sup>	8000 <sup>#13</sup>	3 <sup>#11</sup>	3 <sup>#11</sup>	20 <sup>#14</sup>	8.3 <sup>#13</sup>	0.41 <sup>#13</sup>	370 <sup>#13</sup>	50 <sup>#11</sup>	5.7 <sup>#13</sup>												
60537182 Vapour Intrusion																																																			



						Halogenated Aromatic Compounds																																																	
						Nickel	Nickel (Filtered)	Selenium	Selenium (Filtered)	Zinc	Zinc (Filtered)	Bromobenzene	Chlorobenzene	2-Chlorotoluene	4-Chlorotoluene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	Dichlorodifluoromethane (Freon 12)	Chloromethane	Vinyl chloride	Bromomethane	Chloroethane	Trichlorofluoromethane (Freon 11)	1,1-Dichloroethene	Iodomethane	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1,1-Trichloroethane	1,1-Dichloropropene	Carbon Tetrachloride	1,2-Dichloroethane	Trichloroethene	Dibromomethane	1,1,2-Trichloroethane	1,3-Dichloropropane	Tetrachloroethene	1,1,1,2-Tetrachloroethane														
						mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L									
EQL						0.001	0.001	0.01	0.01	0.005	0.005	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1					
60537182 Agriculture, Parks and Gardens						0.2 <sup>#1</sup>	0.2 <sup>#1</sup>	0.02 <sup>#1</sup>	0.02 <sup>#1</sup>	2 <sup>#1</sup>	0.023 <sup>#6</sup>																																												
60537182 Buildings and Structures																																																							
60537182 Maintenance of Ecosystems						0.2 <sup>#6</sup>	0.2 <sup>#6</sup>	0.003 <sup>#7</sup>	0.003 <sup>#7</sup>	0.023 <sup>#6</sup>	0.023 <sup>#6</sup>																																												
60537182 Potable Water Supply						0.02 <sup>#11</sup>	0.02 <sup>#11</sup>	0.01 <sup>#11</sup>	0.01 <sup>#11</sup>	3 <sup>#12</sup>	3 <sup>#12</sup>	62 <sup>#13</sup>	10 <sup>#12</sup>	240 <sup>#13</sup>	250 <sup>#13</sup>	250 <sup>#13</sup>	1500 <sup>#15</sup>	20 <sup>#12</sup>	40 <sup>#11</sup>	30 <sup>#11</sup>	30 <sup>#11</sup>	200 <sup>#13</sup>	190 <sup>#13</sup>	140 <sup>#7</sup>	1 <sup>#11</sup>	2100 <sup>#13</sup>	5200 <sup>#13</sup>	30 <sup>#11</sup>	900 <sup>#7</sup>	250 <sup>#7</sup>	28 <sup>#13</sup>	60 <sup>#11</sup>	60 <sup>#11</sup>	8000 <sup>#13</sup>	3 <sup>#11</sup>	3 <sup>#11</sup>	20 <sup>#14</sup>	8.3 <sup>#13</sup>	0.41 <sup>#13</sup>	370 <sup>#13</sup>	50 <sup>#11</sup>	5.7 <sup>#13</sup>													
60537182 Primary Contact Recreation						0.2 <sup>#16</sup>	0.2 <sup>#16</sup>	0.1 <sup>#16</sup>	0.1 <sup>#16</sup>	3 <sup>#11</sup>	3 <sup>#11</sup>	62 <sup>#13</sup>	300 <sup>#11</sup>	240 <sup>#13</sup>	250 <sup>#13</sup>	1500 <sup>#15</sup>	20 <sup>#12</sup>	40 <sup>#11</sup>	30 <sup>#11</sup>	30 <sup>#11</sup>	200 <sup>#13</sup>	190 <sup>#13</sup>	140 <sup>#7</sup>	1 <sup>#11</sup>	2100 <sup>#13</sup>	5200 <sup>#13</sup>	30 <sup>#11</sup>	900 <sup>#7</sup>	250 <sup>#7</sup>	28 <sup>#13</sup>	60 <sup>#11</sup>	60 <sup>#11</sup>	8000 <sup>#13</sup>	3 <sup>#11</sup>	3 <sup>#11</sup>	20 <sup>#14</sup>	8.3 <sup>#13</sup>	0.41 <sup>#13</sup>	370 <sup>#13</sup>	50 <sup>#11</sup>	5.7 <sup>#13</sup>														
60537182 Stock Watering						1 <sup>#15</sup>	1 <sup>#15</sup>	0.02 <sup>#19</sup>	0.02 <sup>#19</sup>	20 <sup>#19</sup>	20 <sup>#19</sup>	62 <sup>#13</sup>	300 <sup>#11</sup>	240 <sup>#13</sup>	250 <sup>#13</sup>	1500 <sup>#15</sup>	20 <sup>#12</sup>	40 <sup>#11</sup>	30 <sup>#11</sup>	30 <sup>#11</sup>	200 <sup>#13</sup>	190 <sup>#13</sup>	140 <sup>#7</sup>	1 <sup>#15</sup>	2100 <sup>#13</sup>	5200 <sup>#13</sup>	30 <sup>#11</sup>	900 <sup>#7</sup>	250 <sup>#7</sup>	28 <sup>#13</sup>	60 <sup>#11</sup>	60 <sup>#11</sup>	8000 <sup>#13</sup>	3 <sup>#15</sup>	3 <sup>#15</sup>	20 <sup>#14</sup>	8.3 <sup>#13</sup>	0.41 <sup>#13</sup>	370 <sup>#13</sup>	50 <sup>#11</sup>	5.7 <sup>#13</sup>														
60537182 Vapour Intrusion																																																							

Appendix D  
Groundwater Results  
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60537182

EQL	Halogenated Aromatic Compounds																																							
	Nickel	Nickel (Filtered)	Selenium	Selenium (Filtered)	Zinc	Zinc (Filtered)	Bromobenzene	Chlorobenzene	2-Chlorotoluene	4-Chlorotoluene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	Dichlorodifluoromethane (Freon 12)	Chloromethane	Vinyl chloride	Bromomethane	Chloroethane	Trichlorofluoromethane (Freon 11)	1,1-Dichloroethene	Iodomethane	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1,1-Trichloroethane	1,1-Dichloropropene	Carbon Tetrachloride	1,2-Dichloroethane	Trichloroethene	Dibromomethane	1,1,2-Trichloroethane	1,3-Dichloropropane	Tetrachloroethene	1,1,1,2-Tetrachloroethane				
mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L			
0.001	0.001	0.01	0.01	0.005	0.005	1	1	1	1	1	1	1	1	1	1	10	10	10	10	10	10	10	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
0.2 <sup>#1</sup>	0.2 <sup>#1</sup>	0.02 <sup>#1</sup>	0.02 <sup>#1</sup>	2 <sup>#1</sup>	2 <sup>#1</sup>																																			
	0.2 <sup>#6</sup>	0.2 <sup>#6</sup>	0.003 <sup>#7</sup>	0.003 <sup>#7</sup>	0.023 <sup>#6</sup>	0.023 <sup>#6</sup>																																		
0.02 <sup>#11</sup>	0.02 <sup>#11</sup>	0.01 <sup>#11</sup>	0.01 <sup>#11</sup>	3 <sup>#12</sup>	3 <sup>#12</sup>	62 <sup>#13</sup>	10 <sup>#12</sup>	240 <sup>#13</sup>	250 <sup>#13</sup>	1500 <sup>#11</sup>	20 <sup>#12</sup>	40 <sup>#11</sup>	30 <sup>#11</sup>	30 <sup>#11</sup>	200 <sup>#13</sup>	190 <sup>#13</sup>	0.3 <sup>#11</sup>	1 <sup>#11</sup>	2100 <sup>#13</sup>	5200 <sup>#13</sup>	30 <sup>#11</sup>	900 <sup>#7</sup>	250 <sup>#7</sup>	60 <sup>#11</sup>	60 <sup>#11</sup>	8000 <sup>#13</sup>	3 <sup>#11</sup>	3 <sup>#11</sup>	20 <sup>#14</sup>	8.3 <sup>#13</sup>	0.41 <sup>#13</sup>	370 <sup>#13</sup>	50 <sup>#11</sup>	5.7 <sup>#13</sup>						
	0.2 <sup>#16</sup>	0.2 <sup>#16</sup>	0.1 <sup>#16</sup>	0.1 <sup>#16</sup>	3 <sup>#11</sup>	62 <sup>#13</sup>	300 <sup>#11</sup>	240 <sup>#13</sup>	250 <sup>#13</sup>	1500 <sup>#11</sup>	20 <sup>#12</sup>	40 <sup>#11</sup>	30 <sup>#11</sup>	30 <sup>#11</sup>	200 <sup>#13</sup>	190 <sup>#13</sup>	0.3 <sup>#11</sup>	1 <sup>#11</sup>	2100 <sup>#13</sup>	5200 <sup>#13</sup>	30 <sup>#11</sup>	900 <sup>#7</sup>	250 <sup>#7</sup>	60 <sup>#11</sup>	60 <sup>#11</sup>	8000 <sup>#13</sup>	3 <sup>#11</sup>	3 <sup>#11</sup>	20 <sup>#14</sup>	8.3 <sup>#13</sup>	0.41 <sup>#13</sup>	370 <sup>#13</sup>	50 <sup>#11</sup>	5.7 <sup>#13</sup>						
	1 <sup>#15</sup>	1 <sup>#15</sup>	0.02 <sup>#19</sup>	0.02 <sup>#19</sup>	20 <sup>#19</sup>	20 <sup>#19</sup>	62 <sup>#13</sup>	300 <sup>#18</sup>	240 <sup>#13</sup>	250 <sup>#13</sup>	1500 <sup>#18</sup>	20 <sup>#19</sup>	40 <sup>#18</sup>	30 <sup>#18</sup>	30 <sup>#18</sup>	200 <sup>#13</sup>	190 <sup>#13</sup>	0.3 <sup>#18</sup>	1 <sup>#18</sup>	2100 <sup>#13</sup>	5200 <sup>#13</sup>	30 <sup>#18</sup>	900 <sup>#7</sup>	250 <sup>#7</sup>	60 <sup>#18</sup>	60 <sup>#18</sup>	8000 <sup>#13</sup>	3 <sup>#18</sup>	3 <sup>#18</sup>	20 <sup>#14</sup>	8.3 <sup>#13</sup>	0.41 <sup>#13</sup>	370 <sup>#13</sup>	50 <sup>#18</sup>	5.7 <sup>#13</sup>					

Location	Field ID	Sampled Date Time	Lab Report	SampleCode	Sample Type	Nickel	Nickel (Filtered)	Selenium	Selenium (Filtered)	Zinc	Zinc (Filtered)	Bromobenzene	Chlorobenzene	2-Chlorotoluene	4-Chlorotoluene	1,2-Dichlorobenzene	1,3-Dichlorobenzene	1,4-Dichlorobenzene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	Dichlorodifluoromethane (Freon 12)	Chloromethane	Vinyl chloride	Bromomethane	Chloroethane	Trichlorofluoromethane (Freon 11)	1,1-Dichloroethene	Iodomethane	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1,1-Trichloroethane	1,1-Dichloropropene	Carbon Tetrachloride	1,2-Dichloroethane	Trichloroethene	Dibromomethane	1,1,2-Trichloroethane	1,3-Dichloropropane	Tetrachloroethene	1,1,1,2-Tetrachloroethane					
GW70	GW70_160517	16/05/2017	EM1706246	EM1706246001	Normal	0.023	0.004	<0.01	<0.01	0.082	0.015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
GW70	GW70_13/7/17	13/07/2017	EM1709231	EM1709231010	Normal	0.097	0.01	0.01	<0.01	0.165	0.013	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
GW72	GW72_120517	12/05/2017	EM1706071	EM1706071003	Normal	0.018	0.012	<0.01	<0.01	0.138	0.013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
GW72	GW72_14/07/17	14/07/2017	EM1709371	EM1709371004	Normal	0.018	0.004	<0.01	<0.01	0.019	<0.005	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
GW73	GW73_11/05/17	11/05/2017	EM1705994	EM1705994008	Normal	0.029	0.022	<0.01	<0.01	0.092	0.009	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
GW73	GW73_13/7/17	13/07/2017	EM1709231	EM1709231011	Normal	0.04	0.025	<0.01	<0.01	0.076	0.013	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
GW74	GW74_10/5/17	10/05/2017	EM1705994	EM1705994002	Normal	0.065	0.032	<0.01	<0.01	0.073	0.013	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
GW74	GW74_14/07/17	14/07/2017	EM1709371	EM1709371011	Normal	0.08	0.01	<0.01	<0.01	0.134	0.019	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
GW75	GW75_12/05/17	12/05/2017	EM1706071	EM1706071004	Normal	0.01	0.007	<0.01	<0.01	0.363	0.026	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
GW75	GW75_14/07/17	14/07/2017	EM1709371	EM1709371005	Normal	0.018	0.001	<0.01	<0.01	0.171	<0.005	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
GW76	GW76_10/5/17	10/05/2017	EM1705994	EM1705994003	Normal	0.074	0.051	<0.01	<0.01	0.228	0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
GW76	GW76_13/7/17	13/07/2017	EM1709231	EM1709231006	Normal	0.027	0.004	<0.01	<0.01	0.427	0.057	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
GW77	GW77_10/5/17	10/05/2017	EM1705994	EM1705994001	Normal	0.023	0.018	<0.01	<0.01	0.06	0.01	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
GW77	GW77_13/7/17	13/07/2017	EM1709231	EM1709231007	Normal	0.002	0.001	<0.01	<0.01	0.069	0.045	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	
GW80	GW80_8/5/17	8/05/2017	EM1705809 / EM1707203	EM1705809002 / EM1707203004	Normal	0.027	0.021	<0.01	<0.01	0.047	0.028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
GW80	GW80_14/07/17	14/07/2017	EM1709371	EM1709371002	Normal	0.011	0.009	<0.01	<0.01	0.028	0.006	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		
GW81	GW81_8/5/17	8/05/2017	EM1705809 / EM1707203	EM1705809001 / EM1707203005	Normal	0.016	0.012	<0.01	<0.01	0.049	0.024	<5	<5	<5	<5	<5	<5	<5	<5	<5	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50		
GW81	GW81_14/07/17	14/07/2017	EM1709371	EM1709371003	Normal	0.02	0.007	<0.01	<0.01	0.053	<0.005	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10		
GW82	GW82_9/5/17	9/05/2017	EM1705809 / EM1707203	EM1705809005 / EM1707203006	Normal	0.051	0.051	<0.01	<0.01	0.07	0.04	-</																																		







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	Fumigants										Trihalomethanes				Alkalinity				Nutrients																	
	trans-1,4-Dichloro-2-butene	cis-1,4-Dichloro-2-butene	1,1,2,2-Tetrachloroethane	1,2,3-Trichloropropane	Dichloromethane	Pentachloroethane	1,2-Dibromo-3-chloropropane	Hexachlorobutadiene	1,2-Dibromoethane (EDB)	1,2-Dichloropropane	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Bromodichloromethane	Bromoform	Chloroform	Dibromochloromethane	Total Trihalomethanes	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Total Alkalinity as CaCO3	Ammonia (as N)	Nitrate (as N)	Nitrite (as N)	Nitrate & Nitrite (as N)	Ammonium (as N)	Reactive Phosphorus (as P)	Chloride	Calcium	Calcium (Filtered)	Fluoride	Magnesium	Magnesium (Filtered)	Potassium	
µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	
EQL	1	1	1	1	4	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	1	0.01	0.01	0.01	0.01	0.01	0.01	1	1	1	1	1	1	1	
60537182 Agriculture, Parks and Gardens																							5 <sup>#2</sup>	5 <sup>#2</sup>	5 <sup>#2</sup>	5 <sup>#2</sup>			40 <sup>#1</sup>							
60537182 Buildings and Structures																							4.7 <sup>#9</sup>	3.8 <sup>#10</sup>					6000 <sup>#3</sup>							
60537182 Maintenance of Ecosystems																																				
60537182 Potable Water Supply																							0.5 <sup>#12</sup>	11.3 <sup>#11</sup>	0.91 <sup>#11</sup>				250 <sup>#12</sup>						1.5 <sup>#11</sup>	
60537182 Primary Contact Recreation																							1.25 <sup>#17</sup>	113 <sup>#16</sup>	9.1 <sup>#16</sup>				250 <sup>#12</sup>						15 <sup>#16</sup>	
60537182 Stock Watering																							1.25 <sup>#21</sup>	90.3 <sup>#19</sup>	9 <sup>#19</sup>											
60537182 Vapour Intrusion																																				

Location	Field ID	Sampled Date Time	Lab Report	SampleCode	Sample Type	trans-1,4-Dichloro-2-butene	cis-1,4-Dichloro-2-butene	1,1,2,2-Tetrachloroethane	1,2,3-Trichloropropane	Dichloromethane	Pentachloroethane	1,2-Dibromo-3-chloropropane	Hexachlorobutadiene	1,2-Dibromoethane (EDB)	1,2-Dichloropropane	1,2-Dichloropropane	cis-1,3-Dichloropropene	trans-1,3-Dichloropropene	Bromodichloromethane	Bromoform	Chloroform	Dibromochloromethane	Total Trihalomethanes	Bicarbonate Alkalinity as CaCO3	Carbonate Alkalinity as CaCO3	Hydroxide Alkalinity as CaCO3	Total Alkalinity as CaCO3	Ammonia (as N)	Nitrate (as N)	Nitrite (as N)	Nitrate & Nitrite (as N)	Ammonium (as N)	Reactive Phosphorus (as P)	Chloride	Calcium	Calcium (Filtered)	Fluoride	Magnesium	Magnesium (Filtered)	Potassium				
GW70	GW70_160517	16/05/2017	EM1706246	EM1706246001	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	168	<1	<1	168	0.34	0.02	<0.01	0.02	0.34	<0.01	32	43	-	0.7	9	-	4
GW70	GW70_13/7/17	13/07/2017	EM1709231	EM1709231010	Normal	<1	<1	<1	<1	<4	<1	<1	<1	<1	<1	<1	<2	<2	<1	<1	<1	<1	-	156	<1	<1	156	0.31	<0.01	<0.01	<0.01	-	<0.01	33	-	46	0.2	-	10	-				
GW72	GW72_120517	12/05/2017	EM1706071	EM1706071003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	352	<1	<1	352	2.89	4.91	<0.01	4.91	2.89	<0.01	25	128	-	0.3	13	-	6			
GW72	GW72_14/07/17	14/07/2017	EM1709371	EM1709371004	Normal	<1	<1	<1	<1	<4	<1	<1	<1	<1	<1	<1	<2	<2	<1	<1	<1	<1	-	376	<1	<1	376	2.43	0.01	0.01	0.02	-	<0.01	22	-	128	0.3	-	13	-				
GW73	GW73_11/5/17	11/05/2017	EM1705994	EM1705994008	Normal	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<2	<2	<1	<1	<1	<1	-	400	<1	<1	400	2.47	<0.01	<0.01	<0.01	2.46	<0.01	30	87	-	0.5	32	-	12				
GW73	GW73_13/7/17	13/07/2017	EM1709231	EM1709231011	Normal	<1	<1	<1	<1	<4	<1	<1	<1	<1	<1	<1	<2	<2	<1	<1	<1	<1	-	633	<1	<1	633	2.82	<0.01	<0.01	<0.01	-	<0.01	43	-	141	0.1	-	58	-				
GW74	GW74_10/5/17	10/05/2017	EM1705994	EM1705994002	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	694	<1	<1	694	11.5	<0.01	<0.01	<0.01	11.4	<0.01	56	129	-	0.2	59	-	20			
GW74	GW74_14/07/17	14/07/2017	EM1709371	EM1709371011	Normal	<1	<1	<1	<1	<4	<1	<1	<1	<1	<1	<1	<2	<2	<1	<1	<1	<1	-	610	<1	<1	610	9.98	0.01	0.02	0.03	-	<0.01	47	-	160	0.3	-	73	-				
GW75	GW75_120517	12/05/2017	EM1706071	EM1706071004	Normal	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<2	<2	<1	<1	<1	<1	-	338	<1	<1	338	1.03	6.51	0.07	6.56	1.03	<0.01	18	122	-	0.2	25	-	12				
GW75	GW75_14/07/17	14/07/2017	EM1709371	EM1709371005	Normal	<1	<1	<1	<1	<4	<1	<1	<1	<1	<1	<1	<2	<2	<1	<1	<1	<1	-	328	<1	<1	328	0.6	2.01	0.08	2.09	-	<0.01	16	-	115	0.2	-	23	-				
GW76	GW76_10/5/17	10/05/2017	EM1705994	EM1705994003	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	439	<1	<1	439	3.3	1.03	0.07	1.1	3.27	0.06	346	97	-	0.5	27	-	20			
GW76	GW76_13/7/17	13/07/2017	EM1709231	EM1709231006	Normal	<1	<1	<1	<1	<4	<1	<1	<1	<1	<1	<1	<2	<2	<1	<1	<1	<1	-	442	<1	<1	442	2.51	1.9	0.01	1.91	-	0.05	321	-	105	0.2	-	32	-				
GW77	GW77_10/5/17	10/05/2017	EM1705994	EM1705994001	Normal	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<2	<2	<1	<1	<1	<1	-	224	<1	<1	224	0.18	<0.01	<0.01	<0.01	0.18	<0.01	24	81	-	0.9	15	-	5				
GW77	GW77_13/7/17	13/07/2017	EM1709231	EM1709231007	Normal	<1	<1	<1	<1	<4	<1	<1	<1	<1	<1	<1	<2	<2	<1	<1	<1	<1	-	243	<1	<1	243	0.14	0.02	<0.01	0.02	-	<0.01	21	-	87	<0.1	-	18	-				
GW80	GW80_8/5/17	8/05/2017	EM1705809 / EM1707203	EM1705809002 / EM1707203004	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	441	<1	<1	441	2.78	2.94	<0.01	2.94	-	0.01	40	97	97	0.9	40	40	22			
GW80	GW80_14/07/17	14/07/2017	EM1709371	EM1709371002	Normal	<1	<1	<1	<1	<4	<1	<1	<1	<1	<1	<1	<2	<2	<1	<1	<1	<1	-	454	<1	<1	454	2.51	0.11	0.15	0.26	-	<0.01	40	-	109	0.8	-	48	-				
GW81	GW81_8/5/17	8/05/2017	EM1705809 / EM1707203	EM1705809001 / EM1707203005	Normal	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	472	<1	<1	472	1.37	<0.01	<0.01	<0.01	-	<0.01	52	167	167	0.9	54	54	22				
GW81	GW81_14/07/17	14/07/2017	EM1709371	EM1709371003	Normal	<1	<1	<1	<1	<4	<1	<1	<1	<1	<1	<1	<2	<2	<1	<1	<1	<1	-	478	<1	<1	478	1.46	<0.01	<0.01	0.01	-	<0.01	56	-	174	0.8	-	60	-				
GW82	GW82_9/5/17	9/05/2017	EM1705809 / EM1707203	EM1705809005 / EM1707203006	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	254	<1	<1	254	0.44	<0.01	<0.01	<0.01	-	<0.01	564	206	206	0.4	54	54	21			
GW82	GW82_13/7/17	13/07/2017	EM1709231	EM1709231008	Normal	<1	<1	<1	<1	<4	<1	<1	<1	<1	<1	<1	<2	<2	<1	<1	<1	<1	-	267	<1	<1	267	0.49	0.02	0.02	0.04	-	<0.01	720	-	243	0.2	-	79	-				
GMW83	GMW83_11/5/17	11/05/2017	EM1705994	EM1705994014	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	91	<1	<1	91	0.06	1.56	0.01	1.57	0.06	<0.01	11	26	-	0.3	6	-	5				
MW1333_02	MW1333_02_120517	12/05/2017	EM1706071	EM1706071006	Normal	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<2	<2	<1	<1	<1	<1	-	459	<1	<1	459	5.4	0.18	<0.01	0.18	5.38	0.02	482	100	-	0.5	43	-	13				
MW1333_02	MW1333_02_12/07/17	12/07/2017	EM1709192	EM1709192019	Normal	<1	<1	<1	<1	<4	<1	<1	<1	<1	<1	<1	<2	<2	<1	<1	<1	<1	-	727	<1	<1	727	8.44	<0.01	<0.01	<0.01	-	0.03	151	-	92	0.4	-	96	-				
MW1371	MW1371_02_11/5/17	11/05/2017	EM1705994	EM1705994016	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	648	<1	<1	648	7.82	<0.01	<0.01	<0.01	7.82	0.44	46	55	-	0.8	40	-	12				
MW1371	MW1371_02_12/07/17	12/07/2017	EM1709192	EM1709192020	Normal	<1	<1	<1	<1	<4	<1	<1	<1	<1	<1	<1	<2	<2	<1	<1	<1	<1	-	611	<1	<1	611	6.69	5.89	<0.01	5.89	-	0.48	46	-	58	0.6	-	46	-				
DAMW5	DAMW5_02_11/5/17	11/05/2017	EM1705994	EM1705994010	Normal	<1	<1	<1	<1	<5	<1	<1	<1	<1	<1	<1	<2	<2	<1	<1	<1	<1	-	503	<1	<1	503	3.33	<0.01	<0.01	<0.01	3.32	0.17	24	74	-	1.8	16	-	23				
DAMW5	DAMW5_02_12/07/17	12/07/2017	EM170919																																									





Location	Field ID	Sampled Date Time	Lab Report	SampleCode	Sample Type	Major Ions														Oxygenated Compounds							Sulfonated Compounds		Surfactants			Organic				Perfluorinated Compounds (PFCs)						
						Potassium (Filtered)	Sodium	Sodium (Filtered)	Total Anions	Total Cations	Sulphur (Total Oxidised as SO4)	Sulfate as SO4 (Filtered)	Ionic Balance	2-Propanone (Acetone)	Vinyl acetate	2-Butanone (MEK)	2-hexanone (MBK)	4-Methyl-2-pentanone (MIBK)	Carbon disulfide	6:2 FTS	PFOA	PFOS	4:2 FTS	PFBA	PFPeA	8:2 FTS	N-Me-FOSA	N-Me-FOSE	FOSA	PFBS	PFDS	PFTaDA	PFTDA	N-Et-FOSA	PFDA	PFHpA	PFHxA	N-Et-FOSE				
						mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	%	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L			
EQL						1	1	1	0.01	0.01	1	1	0.01																													
60537182 Agriculture, Parks and Gardens																																										
60537182 Buildings and Structures																																										
60537182 Maintenance of Ecosystems																																										
60537182 Potable Water Supply																																										
60537182 Primary Contact Recreation																																										
60537182 Stock Watering																																										
60537182 Vapour Intrusion																																										
GW28	GW28	17/11/2015	EM1517153	EM1517153004	Normal	28	-	233	21.4	18.4	11	9	7.57	10	<10	<10	<10	<10																								
GW28	GW28	18/05/2016	EM1605749	EM1605749023	Normal	29	-	674	38.2	37.6	447	419	0.91																													
GW28	GW28_11/07/17	11/07/2017	EM1709106	EM1709106005	Normal	33	-	444	25.6	27	415	225	2.71	<10	<10	<10	<10																									
GW29	GW29	18/11/2015	EM1517312 / EM1517502	EM1517312009 / EM1517502004	Normal	10	-	105	15.2	15.9	238	233	2.15																													
GW29	GW29	18/05/2016	EM1605749	EM1605749051	Normal	12	-	92	16.4	15.5	217	238	2.73	<10	<10	<10	<10																									
GW29	GW29_11/07/17	11/07/2017	EM1709106	EM1709106009	Normal	8	-	96	16	14.8	306	227	3.85																													
GW30	GW30	18/11/2015	EM1517312 / EM1517502	EM1517312015 / EM1517502005	Normal	9	-	64	13.9	12.5	701	593	5.06																													
GW30	GW30	18/05/2016	EM1605749	EM1605749024	Normal	9	-	59	21.4	21.8	1,110	989	0.96	<10	<10	<10	<10																									
GW30	GW30_14/07/17	14/07/2017	EM1709371	EM1709371015	Normal	5	-	32	4.65	4.74	170	167	0.92	<10	<10	<10	<10																									
GW31	GW31	17/11/2015	EM1517153 / EM1517384	EM1517153005 / EM1517384011	Normal	81	-	1,620	131	119	1,380	1,340	4.98																													
GW31	GW31	18/05/2016	EM1605749	EM1605749025	Normal	99	-	1,110	121	122	1,540	1,420	0.36	<10	<10	<10	<10																									
GW31	GW31_10/07/17	10/07/2017	EM1709029	EM1709029005	Normal	53	-	1,480	124	122	1,930	1,340	0.58	<10	<10	<10	<10	<10																								
GW32	GW32	19/11/2015	EM1517384	EM1517384008	Normal	54	-	2,230	169	163	1,020	1,000	1.74																													
GW32	GW32	18/05/2016	EM1605749	EM1605749026	Normal	51	-	2,090	164	160	1,490	1,280	1.44	<10	<10	<10	<10																									
GW32	GW32_17/07/17	17/07/2017	EM1709415	EM1709415011	Normal	36	-	716	80.3	76.5	1060	666	2.43	<1000	<1000	<1000	<1000																									
GW33	GW33	16/11/2015	EM1517153 / EM1517384	EM1517153017 / EM1517384012	Normal	23	-	55	18.2	15.5	<10	2	7.76																													
GW33	GW33	17/05/2016	EM1605749	EM1605749027	Normal	24	-	63	18.4	16	8	7	6.72	<10	<10	<10	<10																									
GW33	GW33_11/07/17	11/07/2017	EM1709106	EM1709106002	Normal	29	-	224	31.7	28.8	12	<5	4.9	<10	<10	<10	<10																									
GW34	GW34	16/11/2015	EM1517153 / EM1517384	EM1517153018 / EM1517384013	Normal	44	-	627	43.6	40.6	238	196	3.62																													
GW34	GW34	17/05/2016	EM1605749	EM1605749028	Normal	44	-	551	37.5	36.8	223	162	0.93	<10	<10	<10	<10																									
GW34	GW34_10/07/17	10/07/2017	EM1709029	EM1709029006	Normal	46	-	548	38.1	37.2	277	187	1.21	<10	<10	<10	<10																									
GW35	GW35	17/11/2015	EM1517153 / EM1517387	EM1517153001 / EM1517387007	Normal	41	-	401	58.2	59.7	2,200	2,110	1.31																													
GW35	GW35	17/05/2016	EM1605749	EM1605749029	Normal	41	-	332	52.3	56.7	2,200	1,890	4.07	<10	<10	<10	<10																									
GW35	GW35_12/07/17	12/07/2017	EM1709192	EM1709192011	Normal	40	-	279	56.6	56.6	3,220	2,510	<0.01	<10	<10	<10	<10																									
GW36	GW36	16/11/2015	EM1517153	EM1517153016	Normal	22	-	108	12.1	11	63	30	4.87	<10	<10	<10	<10																									
GW36	GW36	17/05/2016	EM1605749	EM1605749030	Normal	24	-	172	17.8	16.5	151	129	3.92																													
GW36	GW36_11/07/17	11/07/2017	EM1709106	EM1709106003	Normal	20	-	128	13	12	57	38	3.98	<10	<10	<10	<10																									
GW37	GW37	16/11/2015	EM1517153 / EM1517384	EM1517153019 / EM1517384014	Normal	24	-	248	15.8	13.9	-	141	6.42																													
GW37	GW37	17/05/2016	EM1605749	EM1605749031	Normal	30	-	202	15.1	14.1	113	112	3.39	<10	<10	<10	<10																									
GW37	GW37_11/07/17	11/07/2017	EM1709106	EM1709106004	Normal	31	-	204	14.3	14	132	95	1.13	<10	<10	<10	<10																									
GW38	GW38	17/11/2015	EM1517153	EM1517153002	Normal	25	-	1,250	60.8	57.4	1,030	931	2.91	<10	<10	<10	<10																									
GW38	GW38	17/05/2016	EM1605749	EM1605749032	Normal	26	-	1,300	59.6	59.9	1,060	889	0.21																													
GW38	GW38_11/07/17	11/07/2017	EM1709106	EM1709106001	Normal	25	-	1,260	62.4	58.5	1,690	971	3.25	<10	<10	<10	&lt																									



						Per- and Polyfluoroalkyl Subst											
						PFDoA	PFNA	PFUnA	Sum of PFAS	Sum of PFAS (WA DER List)	Sum of PFHS and PFOs	10:2 FTS	N-Methyl perfluorooctane sulfonamide acid (M)	PFPeS	PFHpS	PFHxS	N-Ethyl perfluorooctane sulfonamide acid (E)
						µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL						0.02	0.02	0.02	0.01	0.01	0.01	0.05	0.02	0.02	0.02	0.02	0.02
60537182_Agriculture, Parks and Gardens																	
60537182_Buildings and Structures																	
60537182_Maintenance of Ecosystems																	
60537182_Potable Water Supply											0.07#25						
60537182_Primary Contact Recreation											0.7#26						
60537182_Stock Watering																	
60537182_Vapour Intrusion																	
Location	Field ID	Sampled Date Time	Lab Report	SampleCode	Sample Type												
GW01	GW01	20/11/2015	EM1517387	EM1517387001	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW01	GW01	17/05/2016	EM1605749	EM1605749001	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW01	GW01_10/07/17	10/07/2017	EM1709029	EM1709029001	Normal	<0.02	<0.02	<0.02	0.3	0.3	0.07	<0.05	<0.02	<0.02	<0.02	0.03	<0.02
GW02	GW02	20/11/2015	EM1517387	EM1517387002	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW02	GW02	18/05/2016	EM1605749	EM1605749046	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW02	GW02_14/07/17	14/07/2017	EM1709371	EM1709371020	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW03	GW03	19/11/2015	EM1517384	EM1517384004	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW03	GW03	17/05/2016	EM1605749	EM1605749002	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW03	GW03_11/07/17	11/07/2017	EM1709106	EM1709106012	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW04	GW04	19/11/2015	EM1517384	EM1517384001	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW04	GW04	17/05/2016	EM1605749	EM1605749003	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW04	GW04_11/07/17	11/07/2017	EM1709106	EM1709106013	Normal	<0.02	<0.02	<0.02	<0.01	<0.01	<0.01	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02
GW05	GW05	18/11/2015	EM1517312 / EM1517387	EM1517312016 / EM1517387004	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW05	GW05	17/05/2016	EM1605749	EM1605749004	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW05	GW05_11/07/17	11/07/2017	EM1709106	EM1709106010	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW06	GW06	20/11/2015	EM1517387	EM1517387003	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW06	GW06	16/05/2016	EM1605749	EM1605749005	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW06	GW06_11/07/17	11/07/2017	EM1709106	EM1709106016	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW07	GW07	19/11/2015	EM1517384	EM1517384003	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW07	GW07	17/05/2016	EM1605749	EM1605749006	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW07	GW07_10/07/17	10/07/2017	EM1709029	EM1709029002	Normal	<0.02	<0.02	<0.02	2.2	2.2	0.08	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02
GW08	GW08	19/11/2015	EM1517384	EM1517384006	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW08	GW08	17/05/2016	EM1605749	EM1605749007	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW08	GW08_14/07/17	14/07/2017	EM1709371	EM1709371001	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW09	GW09	19/11/2015	EM1517384	EM1517384002	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW09	GW09	17/05/2016	EM1605749	EM1605749008	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW09	GW09_11/07/17	11/07/2017	EM1709106	EM1709106011	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW10	GW10	18/11/2015	EM1517312	EM1517312017	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW10	GW10	18/05/2016	EM1605749	EM1605749047	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW10	GW10_17/07/17	17/07/2017	EM1709415	EM1709415009	Normal	<0.02	<0.02	<0.02	0.15	0.15	0.08	<0.05	<0.02	<0.02	<0.02	0.04	<0.02
GW11	GW11	19/11/2015	EM1517384	EM1517384005	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW11	GW11	16/05/2016	EM1605749	EM1605749009	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW11	GW11_11/07/17	11/07/2017	EM1709106	EM1709106015	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW12	GW12	19/11/2015	EM1517384	EM1517384007	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW12	GW12	16/05/2016	EM1605749	EM1605749010	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW12	GW12_12/07/17	12/07/2017	EM1709192	EM1709192003	Normal	<0.02	<0.02	<0.02	<0.01	<0.01	<0.01	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02
GW13	GW13	18/11/2015	EM1517312 / EM1517387	EM1517312010 / EM1517387005	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW13	GW13	18/05/2016	EM1605749	EM1605749048	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW13	GW13_12/07/17	12/07/2017	EM1709192	EM1709192005	Normal	<0.02	<0.02	<0.02	<0.01	<0.01	<0.01	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02
GW14	GW14	17/11/2015	EM1517312	EM1517312001	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW14	GW14	17/05/2016	EM1605749	EM1605749011	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW14	GW14_17/07/17	17/07/2017	EM1709415	EM1709415010	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW15	GW15	17/11/2015	EM1517312	EM1517312003	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW15	GW15	18/05/2016	EM1605749	EM1605749012	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW15	GW15_12/07/17	12/07/2017	EM1709192	EM1709192014	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW16	GW16	17/11/2015	EM1517312	EM1517312002	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW16	GW16	17/05/2016	EM1605749	EM1605749013	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW16	GW16_12/07/17	12/07/2017	EM1709192	EM1709192004	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW17	GW17	18/11/2015	EM1517312 / EM1517502	EM1517312005 / EM1517502001	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW17	GW17	17/05/2016	EM1605749	EM1605749014	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW17	GW17_12/07/17	12/07/2017	EM1709192	EM1709192013	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW18	GW18	17/11/2015	EM1517153	EM1517153006	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW18	GW18	18/05/2016	EM1605749	EM1605749015	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW19	GW19	17/11/2015	EM1517153 / EM1517387	EM1517153007 / EM1517387006	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW19	GW19	18/05/2016	EM1605749	EM1605749016	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW19	GW19_12/07/17	12/07/2017	EM1709192	EM1709192010	Normal	<0.02	<0.02	<0.02	<0.01	<0.01	<0.01	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02
GW20	GW20	18/11/2015	EM1517312 / EM1517384	EM1517312011 / EM1517384009	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW20	GW20	17/05/2016	EM1605749	EM1605749017	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW20	GW20_12/07/17	12/07/2017	EM1709192	EM1709192001	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW21	GW21	18/11/2015	EM1517312	EM1517312006	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW21	GW21	17/05/2016	EM1605749	EM1605749018	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW21	GW21_12/07/17	12/07/2017	EM1709192	EM1709192002	Normal	<0.02	<0.02	<0.02	0.63	0.63	0.39	<0.05	<0.02	<0.02	<0.02	0.11	<0.02
GW22	GW22	18/11/2015	EM1517312 / EM1517502	EM1517312013 / EM1517502002	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW22	GW22	18/05/2016	EM1605749	EM1605749019	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW22	GW22_11/07/17	11/07/2017	EM1709106	EM1709106007	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW23	GW23	17/11/2015	EM1517312	EM1517312004	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW23	GW23	18/05/2016	EM1605749	EM1605749049	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW23	GW23_11/07/17	11/07/2017	EM1709106	EM1709106006	Normal	-	-										







	Per- and Polyfluoroalkyl Subst											
	PFDoA	PFNA	PFUnA	Sum of PFAS	Sum of PFAS (WA DER List)	Sum of PFHxS and PFOS	10:2 FTS	N-Methyl perfluorooctane sulfonamide acid (M)	PFPeS	PFHpS	PFHxS	N-Ethyl perfluorooctane sulfonamide acid (E)
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.02	0.02	0.02	0.01	0.01	0.01	0.05	0.02	0.02	0.02	0.02	0.02
60537182_Agriculture, Parks and Gardens												
60537182_Buildings and Structures												
60537182_Maintenance of Ecosystems												
60537182_Potable Water Supply							0.07 <sup>#25</sup>					
60537182_Primary Contact Recreation							0.7 <sup>#26</sup>					
60537182_Stock Watering												
60537182_Vapour Intrusion												

Location	Field ID	Sampled Date Time	Lab Report	SampleCode	Sample Type	PFDoA	PFNA	PFUnA	Sum of PFAS	Sum of PFAS (WA DER List)	Sum of PFHxS and PFOS	10:2 FTS	N-Methyl perfluorooctane sulfonamide acid (M)	PFPeS	PFHpS	PFHxS	N-Ethyl perfluorooctane sulfonamide acid (E)
GW70	GW70_160517	16/05/2017	EM1706246	EM1706246001	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW70	GW70_13/7/17	13/07/2017	EM1709231	EM1709231010	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW72	GW72_120517	12/05/2017	EM1706071	EM1706071003	Normal	<0.02	<0.02	<0.02	<0.01	<0.01	<0.01	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02
GW72	GW72_14/07/17	14/07/2017	EM1709371	EM1709371004	Normal	<0.02	<0.02	<0.02	<0.01	<0.01	<0.01	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02
GW73	GW73_11/5/17	11/05/2017	EM1705994	EM1705994008	Normal	<0.02	<0.02	<0.02	0.12	0.12	0.11	<0.05	<0.02	<0.02	<0.02	0.04	<0.02
GW73	GW73_13/7/17	13/07/2017	EM1709231	EM1709231011	Normal	<0.02	<0.02	<0.02	<0.01	<0.01	<0.01	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02
GW74	GW74_10/5/17	10/05/2017	EM1705994	EM1705994002	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW74	GW74_14/07/17	14/07/2017	EM1709371	EM1709371011	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW75	GW75_120517	12/05/2017	EM1706071	EM1706071004	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW75	GW75_14/07/17	14/07/2017	EM1709371	EM1709371005	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW76	GW76_10/5/17	10/05/2017	EM1705994	EM1705994003	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW76	GW76_13/7/17	13/07/2017	EM1709231	EM1709231006	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW77	GW77_10/5/17	10/05/2017	EM1705994	EM1705994001	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW77	GW77_13/7/17	13/07/2017	EM1709231	EM1709231007	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW80	GW80_8/5/17	8/05/2017	EM1705809 / EM1707203	EM1705809002 / EM1707203004	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW80	GW80_14/07/17	14/07/2017	EM1709371	EM1709371002	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW81	GW81_8/5/17	8/05/2017	EM1705809 / EM1707203	EM1705809001 / EM1707203005	Normal	<0.02	<0.02	<0.02	2.34	2.31	0.62	<0.05	<0.02	0.03	<0.02	0.36	<0.02
GW81	GW81_14/07/17	14/07/2017	EM1709371	EM1709371003	Normal	<0.02	<0.02	<0.02	3.53	3.51	0.59	<0.05	<0.02	0.02	<0.02	0.32	<0.02
GW82	GW82_9/5/17	9/05/2017	EM1705809 / EM1707203	EM1705809005 / EM1707203006	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GW82	GW82_13/7/17	13/07/2017	EM1709231	EM1709231008	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GMW83	GMW83_11/5/17	11/05/2017	EM1705994	EM1705994014	Normal	-	-	-	-	-	-	-	-	-	-	-	-
MW1333_02	MW1333_02_120517	12/05/2017	EM1706071	EM1706071006	Normal	<0.02	<0.02	<0.02	<0.01	<0.01	<0.01	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02
MW1333_02	MW1333_02_12/07/17	12/07/2017	EM1709192	EM1709192019	Normal	<0.02	<0.02	<0.02	<0.01	<0.01	<0.01	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02
MW1371	MW1371_02_11/5/17	11/05/2017	EM1705994	EM1705994016	Normal	-	-	-	-	-	-	-	-	-	-	-	-
MW1371	MW1371_02_12/07/17	12/07/2017	EM1709192	EM1709192020	Normal	-	-	-	-	-	-	-	-	-	-	-	-
DAMW5	DAMW5_02_11/5/17	11/05/2017	EM1705994	EM1705994010	Normal	<0.02	<0.02	<0.02	<0.01	<0.01	<0.01	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02
DAMW5	DAMW5_02_12/07/17	12/07/2017	EM1709192	EM1709192017	Normal	<0.02	<0.02	<0.02	0.03	0.03	0.03	<0.05	<0.02	<0.02	<0.02	0.02	<0.02
F3	F3_170517	16/05/2017	EM1706246	EM1706246021	Normal	-	-	-	-	-	-	-	-	-	-	-	-
F3	F3_12/07/17	12/07/2017	EM1709192	EM1709192018	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GMW02	GMW02_120517	12/05/2017	EM1706071	EM1706071005	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GMW02	GMW02_13/7/17	13/07/2017	EM1709231	EM1709231012	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GMW03	GMW03_11/5/17	11/05/2017	EM1705994	EM1705994009	Normal	-	-	-	-	-	-	-	-	-	-	-	-
GMW03	GMW03_12/07/17	12/07/2017	EM1709192	EM1709192022	Normal	-	-	-	-	-	-	-	-	-	-	-	-
MW9AI	MW9AI_11/5/17	11/05/2017	EM1705994	EM1705994015	Normal	-	-	-	-	-	-	-	-	-	-	-	-
MW9AI	MW9AI_12/07/17	12/07/2017	EM1709192	EM1709192027	Normal	-	-	-	-	-	-	-	-	-	-	-	-

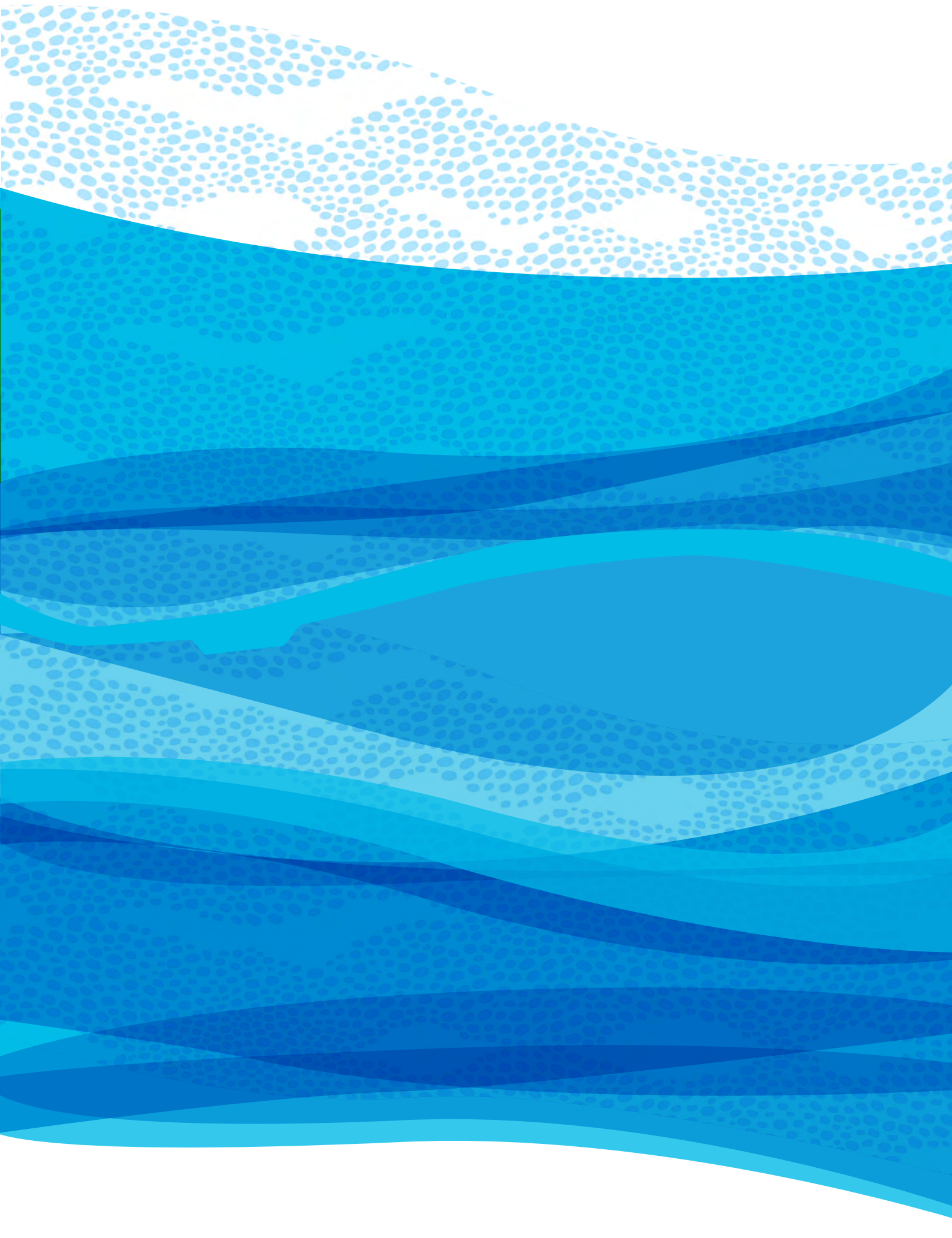
Statistical Summary																	
Number of Results	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34
Number of Detects	0	0	0	20	20	19	0	0	2	0	14	0					
Minimum Concentration	<0.02	<0.02	<0.02	<0.01	<0.01	<0.01	<0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Minimum Detect	ND	ND	ND	0.03	0.03	0.02	ND	ND	0.02	ND	0.02	ND	0.02	ND	0.02	ND	ND
Maximum Concentration	<0.02	<0.02	<0.02	4.9	4.9	4.89	<0.05	<0.02	0.03	<0.02	0.36	<0.02					
Maximum Detect	ND	ND	ND	4.9	4.9	4.89	ND	ND	0.03	ND	0.36	ND					
Average Concentration	0.01	0.01	0.01	0.48	0.48	0.24	0.025	0.01	0.011	0.01	0.051	0.01					
Median Concentration	0.01	0.01	0.01	0.055	0.055	0.03	0.025	0.01	0.01	0.01	0.01	0.01					
Standard Deviation	0	0	0	1.1	1.1	0.84	0	0	0.0038	0	0.089	0					
Number of Guideline Exceedances	0	0	0	0	0	13	0	0	0	0	0	0					
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	13	0	0	0	0	0	0					

- Env Stds Comments**
- #1:ANZECC 2000 LTV
  - #2:ANZECC 2000 LTV - Long term trigger value for total nitrogen
  - #3:AS2159
  - #4:Dutch 1989f
  - #5:Dutch 2009 Intervention Value
  - #6:ANZECC 2000 Marine 90%
  - #7:ANZECC 2000 Low Reliability Value
  - #8:ANZECC 2000 Low Reliability Value - Cr(VI) low reliability value
  - #9:ANZECC 2000 Marine 90% - Adjusted for average laboratory pH of 7.1
  - #10:ANZECC 2000 Marine 90% - 90% grading value from Hickey (2013)
  - #11:ADWG 2016 Health
  - #12:ADWG 2016 Aesthetic
  - #13:USEPA RSLs November 2015
  - #14:WHO 2011
  - #15:USEPA RSLs November 2015 x10
  - #16:ADWG 2016 Health x10
  - #17:ADWG 2016 Health - Odour threshold conservatively adopted (converted from 1.5 mg/L ammonia as NH3)
  - #18:ADWG 2011 Health
  - #19:ANZECC 2000 Stock water
  - #20:ANZECC 2000 Stock water - (sheep)
  - #21:ADWG 2011 Health - Odour threshold conservatively adopted (converted from 1.5 mg/L ammonia as NH3)
  - #22:NEPM 2013 >2-4m, Sand
  - #23:WHO 2008 - Drinking-water Quality
  - #24:WHO 2008 - Drinking-water Quality x 10
  - #25:Department of Health (April 2017), Health Based Guidance Values for PFAS for use in site investigations in Australia - Drinking water quality value
  - #26:Department of Health (April 2017), Health Based Guidance Values for PFAS for use in site investigations in Australia - Recreational water quality value
  - #27:ANZECC 2000 Freshwater Aquatic Ecosystems 99% Protection

# Data Validation

## APPENDIX E





Sample	Date Sampled	Parent Sample ID (AECOM ID)	QA/QC Sample Type	Matrix	Laboratory	Collected By	Contaminant of Interest
QC101_10/07/17	10/07/2017	ST3-11_0.5	Rinsate	WATER	ALS	JM   BP   BH	
QC102_11/07/17	11/07/2017		Rinsate	WATER	ALS	JM   BP   BH	
QC_103_12/07/17	12/07/2017		Rinsate	WATER	ALS	JM   BP   BH	
QC104_12/07/17	12/07/2017		Field_B	WATER	ALS	JM   BP   BH	
QC105_12/07/17	12/07/2017		Trip Blank	WATER	ALS	JM   BP   BH	
QC106_12/07/17	12/07/2017		Trip Blank	WATER	ALS	JM   BP   BH	
QC106_13/7/17	13/07/2017		Trip Blank	WATER	ALS	JM   BP   BH	
QC107_13/7/17	13/07/2017		Rinsate	WATER	ALS	JM   BP   BH	
QC108_13/7/17	13/07/2017		Trip Blank	WATER	ALS	JM   BP   BH	
QC108_14/07/17	14/07/2017		Field Blank	WATER	ALS	JM   BP   BH	
QC109_14/07/17	14/07/2017	GW47_14/07/17	Duplicate	WATER	ALS	JM   BP   BH	
QC110_14/7/17	14 Jul 2017	GW47_14/07/17	Triplicattee	WATER	MGT	JM   BP   BH	
QC111_14/07/17	14/07/2017		Rinsate	WATER	ALS	JM   BP   BH	
QC112_14/07/17	14/07/2017		Field Blank	WATER	ALS	JM   BP   BH	
QC113_14/07/17	14/07/2017		Trip Blank	WATER	ALS	JM   BP   BH	
QC114_17/07/17	17/07/2017		Trip Blank	WATER	ALS	JM   BP   BH	
QC115_17/7/17	17 Jul 2017		Trip Blank	WATER	MGT	JM   BP   BH	
QC116/170717	17/07/2017		Rinsate	WATER		JM   BP   BH	
QC200_10/07/17	10/07/2017		Rinsate	WATER	ALS	JM   BP   BH	
QC201_10/07/17	10/07/2017		Field Blank	WATER	ALS	JM   BP   BH	
QC202_11/07/17	11/07/2017		Rinsate	WATER	ALS	JM   BP   BH	
QC203_11/07/17	11/07/2017	GW04_11/07/17	Duplicate	WATER	ALS	JM   BP   BH	
QC204_11/07/17	11/07/2017	GW04_11/07/17	Triplicattee	WATER	MGT	JM   BP   BH	
QC205_11/07/17	11/07/2017		Trip Blank	WATER	ALS	JM   BP   BH	
QC206_11/07/17	11/07/2017		Rinsate	WATER	ALS	JM   BP   BH	
QC206_12/07/17	12/07/2017		Rinsate	WATER	ALS	JM   BP   BH	

QC207_12/07/17	12/07/2017		Trip Blank	WATER	ALS	JM   BP   BH	
QC208_14/07/17	14/07/2017		Rinsate	WATER	ALS	JM   BP   BH	
QC209_14/07/17	14/07/2017		Trip Blank	WATER	ALS	JM   BP   BH	
QC210_14/07/17	14/07/2017		Trip Blank	WATER	ALS	JM   BP   BH	
QC211_17/07/17	17/07/2017		Rinsate	WATER	ALS	JM   BP   BH	
QC212_17/07/17	17/07/2017		Field Blank	WATER	ALS	JM   BP   BH	
QC213_17/07/17	17/07/2017		Trip Blank	WATER	ALS	JM   BP   BH	
QC214_17/07/17	17/07/2017		Trip Blank	WATER	ALS	JM   BP   BH	
QC301_10/07/17	10/07/2017		Rinsate	WATER	ALS	BP	
QC302_10/07/17	10/07/2017		Trip Blank	WATER	ALS	BP	
QC303_10/07/17	10/07/2017		Trip Blank	WATER	ALS	BP	
QC304_11/07/17	11/07/2017		Rinsate	WATER	ALS	BP	
QC305/110717	11/07/2017		Trip Blank	WATER		BP	
QC306/110717	11/07/2017		Field Blank	WATER		BP	
QC307_12/07/17	12/07/2017		Rinsate	WATER	ALS	BP	
QC308_12/07/17	12/07/2017	GW19_12/07/17	Duplicate	WATER	ALS	BP	
QC309_12/7/17	12 Jul 2017	GW19_12/07/17	Triplicattee	WATER	MGT	BP	
QC310/130717	13/07/2017		Field Blank	WATER		BP	
QC311/130717	13/07/2017		Rinsate	WATER		BP	
QC312/140717	14/07/2017	GW74_14/07/17	Duplicate	WATER		BP	
QC313_14/7/17	14 Jul 2017	GW74_14/07/17	Triplicattee	WATER	MGT	BP	
QC314_14/07/17	14/07/2017		Rinsate	WATER	ALS	BP	
QC315_14/07/17	14/07/2017		Trip Blank	WATER	ALS	BP	

Notes: TPH - total petroleum hydrocarbon; TDS - total dissolved solid; BTEXN - benzene, toluene, ethylbenzene, xylene, naphthalene







Table E3: Duplicates and Triplicates Relative Percentage Difference Calculations

Table with columns: ANALYTE, UNITS, LOR, Field ID, Parent Sample ID, Duplicate Sample ID, RPD, and 24 data columns. Rows include various analytes like Total Organic Carbon, Benzene, and Metals.

Table E3: Duplicates and Triplicates Relative Percentage Difference Calculations

Selenium (Filtered)	mg/L	0.01 : 0.001 (Interlab)	<0.01	<0.01	0.00	<0.01	<0.01	0.00	<0.01	<0.01	0.00	<0.01	<0.001	0.00	<0.01	<0.001	0.00	<0.01	<0.001	0.00	<0.01	<0.001	0.00
Zinc	mg/L	0.005	1.23	1.37	10.77	1.05	0.993	5.58	0.013	0.016	20.69	1.23	1	20.63	1.05	<0.005	198.10	<b>0.134</b>	<b>0.093</b>	<b>36.12</b>	<b>0.013</b>	<b>0.008</b>	<b>47.62</b>
Zinc (Filtered)	mg/L	0.005	0.079	0.074	6.54	<0.005	0.014	94.74	0.012	0.01	18.18	0.079	0.072	9.27	<0.005	<0.005	0.00	0.019	0.016	17.14	<b>0.012</b>	<b>0.007</b>	<b>52.63</b>
Bromobenzene	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
Chlorobenzene	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
2-Chlorotoluene	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
4-Chlorotoluene	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
1,2-Dichlorobenzene	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
1,3-Dichlorobenzene	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
1,4-Dichlorobenzene	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
1,2,3-Trichlorobenzene	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
1,2,4-Trichlorobenzene	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
Dichlorodifluoromethane (Freon 12)	µg/L	10 : 1 (Interlab)	<10	<10	0.00	<10	<10	0.00	<10	<10	0.00	<10	<1	0.00	<10	<1	0.00	<10	<1	0.00	<10	<1	0.00
Chloromethane	µg/L	10 : 1 (Interlab)	<10	<10	0.00	<10	<10	0.00	<10	<10	0.00	<10	<1	0.00	<10	<1	0.00	<10	<1	0.00	<10	<1	0.00
Vinyl chloride	µg/L	10 : 1 (Interlab)	<10	<10	0.00	<10	<10	0.00	<10	<10	0.00	<10	<1	0.00	<10	<1	0.00	<10	<1	0.00	<10	<1	0.00
Bromomethane	µg/L	10 : 1 (Interlab)	<10	<10	0.00	<10	<10	0.00	<10	<10	0.00	<10	<1	0.00	<10	<1	0.00	<10	<1	0.00	<10	<1	0.00
Chloroethane	µg/L	10 : 1 (Interlab)	<10	<10	0.00	<10	<10	0.00	<10	<10	0.00	<10	<1	0.00	<10	<1	0.00	<10	<1	0.00	<10	<1	0.00
Trichlorofluoromethane (Freon 11)	µg/L	10 : 1 (Interlab)	<10	<10	0.00	<10	<10	0.00	<10	<10	0.00	<10	<1	0.00	<10	<1	0.00	<10	<1	0.00	<10	<1	0.00
1,1-Dichloroethene	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
Iodomethane	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
1,1-Dichloroethane	µg/L	1	<1	<1	0.00	<1	<1	0.00	4	4	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	4	3	28.57
cis-1,2-Dichloroethene	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
trans-1,2-Dichloroethene	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
1,1,1-Trichloroethane	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
1,1-Dichloropropene	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
Carbon Tetrachloride	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
1,2-Dichloroethane	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
Trichloroethene	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
Dibromomethane	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
1,1,2-Trichloroethane	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
1,3-Dichloropropane	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
Tetrachloroethene	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
1,1,1,2-Tetrachloroethane	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
trans-1,4-Dichloro-2-butene	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
cis-1,4-Dichloro-2-butene	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
1,1,2,2-Tetrachloroethane	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
1,2,3-Trichloropropane	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
Dichloromethane	µg/L	4 : 1 (Interlab)	<4	<4	0.00	<4	<4	0.00	<4	<4	0.00	<4	<1	0.00	<4	<1	0.00	<4	<1	0.00	<4	<1	0.00
Pentachloroethane	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
1,2-Dibromo-3-chloropropane	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
Hexachlorobutadiene	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
1,2-Dibromoethane (EDB)	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
1,2-Dichloropropane	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
2,2-Dichloropropane	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
cis-1,3-Dichloropropene	µg/L	2 : 1 (Interlab)	<2	<2	0.00	<2	<2	0.00	<2	<2	0.00	<2	<1	0.00	<2	<1	0.00	<2	<1	0.00	<2	<1	0.00
trans-1,3-Dichloropropene	µg/L	2 : 1 (Interlab)	<2	<2	0.00	<2	<2	0.00	<2	<2	0.00	<2	<1	0.00	<2	<1	0.00	<2	<1	0.00	<2	<1	0.00
Bromodichloromethane	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
Bromoform	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
Chloroform	µg/L	1 : 5 (Interlab)	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<5	0.00	<1	<5	0.00	<1	<5	0.00	<1	<5	0.00
Dibromochloromethane	µg/L	1	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00	<1	<1	0.00
Bicarbonate Alkalinity as CaCO3	mg/L	1 : 20 (Interlab)	601	603	0.33	2000	2060	2.96	447	447	0.00	601	650	7.83	2000	2100	4.88	610	740	19.26	447	490	9.18
Carbonate Alkalinity as CaCO3	mg/L																						

TABLE E4: DATA VALIDATION REPORT			
<b>Project number:</b>	60537182	<b>Validation by:</b>	Natalie Cooper
<b>Client:</b>	EPA Victoria	<b>Date:</b>	7/08/2017
<b>Site:</b>	Fishermans Bend		
<b>Matrix type:</b>	Water	<b>Data verified by:</b>	Natalie cooper
<b>Primary samples:</b>	77	<b>Date:</b>	7/08/2017
<b>Laboratory:</b>	ALS (Secondary Lab Eurofins MGT)		
<b>Lab reference:</b>	EM1709029; EM1709106; EM1709192; EM1709231; EM1709371; EM1709415	<b>Project Manager:</b>	Averyll Coyne
	554049; 554208; 554577 (Secondary)		
<b>Key Issues:</b>	No QA/QC issues were identified in the field or laboratory datasets that could have a material implication to decision-making on the project.		
Field Quality Assurance and Quality Control			
Sampling personnel	All sampling was conducted by JM, BP and BH 10-17 July 2017.		
Sampling Methodology	Samples were collected using low-flow micro-purge sampling techniques.		
Chain of Custody (COC)	Chain of custody documents completed JM, BP and BH.		
Analysis Request	Laboratory analysis request and sample receipt notification reviewed and approved by the Field Manager.		
Field Blank	Field blank samples were collected at a minimum frequency of one per day of sampling (five in total) with the exception of 11/07/2017 and 13/07/2017. Concentrations were reported below the limit of reporting (LOR) for all analytes tested.		
Rinsate Blank	Rinsate blank samples were collected at a minimum frequency of one per day of sampling (fifteen in total). Concentrations reported below the LOR for all analytes tested with the exception of QC200_10/07/17 for Iron with a reported value of 0.05 0.05 on workorder EM1709029. Rinsates QC301_10/07/17 and QC314_14/07/17 were taken from bladders, QC304_11/07/17 was taken from a pump, QC307_12/07/17 was taken from a nitrile glove and QC311/130717 was taken from the interface probe.		
Trip Blank	Trip blanks were included at minimum frequency of one per cooler (sixteen in total). Concentrations were not detected above the LOR for all analytes tested.		
Frequency of field QC	Field duplicate and triplicates (inter-laboratory duplicates) were collected at a frequency of 4% of primary samples (three of each in total). Whilst this does not meet the recommended density of 1 in 20, the data is considered to be representative and reliable based on the acceptable RPD's reported for each of the QA/QC samples collected and analysed.		



TABLE E4: DATA VALIDATION REPORT			
<b>Project number:</b>	60537182	<b>Validation by:</b>	Natalie Cooper
<b>Client:</b>	EPA Victoria	<b>Date:</b>	7/08/2017
<b>Site:</b>	Fishermans Bend		
<b>Matrix type:</b>	Water	<b>Data verified by:</b>	Natalie cooper
<b>Primary samples:</b>	77	<b>Date:</b>	7/08/2017
<b>Laboratory:</b>	ALS (Secondary Lab Eurofins MGT)		
<b>Lab reference:</b>	EM1709029; EM1709106; EM1709192; EM1709231; EM1709371; EM1709415	<b>Project Manager:</b>	Averyll Coyne
	554049; 554208; 554577 (Secondary)		
<b>Handling and preservation</b>	<p>Primary, duplicate and triplicate groundwater samples were received preserved and chilled at the laboratory. Sample receipt temperatures were as follows:</p> <ul style="list-style-type: none"> <li>• EM1709029            2.8°C</li> <li>• EM1709106            1.1°C</li> <li>• EM1709192            2.7°C</li> <li>• EM1709231            1.8°C</li> <li>• EM1709371            1.1°C</li> <li>• EM1709415            1.5°C</li> <li>• 554049                3.7°C</li> <li>• 554208                4.6°C</li> <li>• 554577                2.7°C</li> </ul> <p>and were within the recommended range (<math>\leq 6^{\circ}\text{C}</math>) in all batches. All samples were received at the laboratory in appropriate sample containers.</p>		
Laboratory QA/QC			
<b>Tests requested/reported</b>	Samples were analysed and reported as requested on the Chain Of Custody (COC).		
<b>Holding time compliance (cont'd)</b>	<b>Batch</b>	<b>Sample Analysis</b>	<b>Days</b>
<b>Holding time compliance (cont'd)</b>	<b>Batch</b>	<b>Sample Analysis</b>	<b>Days</b>
<b>Laboratory Accreditation</b>	The laboratory analysis was conducted by ALS Environmental Pty Ltd (Melbourne) a National Association of Testing Authorities (NATA) accredited laboratory. The triplicate sample was analysed at Eurofins   MGT, also a NATA accredited laboratory.		

TABLE E4: DATA VALIDATION REPORT					
<b>Project number:</b>	60537182	<b>Validation by:</b>	Natalie Cooper	<b>Date:</b>	7/08/2017
<b>Client:</b>	EPA Victoria				
<b>Site:</b>	Fishermans Bend				
<b>Matrix type:</b>	Water	<b>Data verified by:</b>	Natalie cooper	<b>Date:</b>	7/08/2017
<b>Primary samples:</b>	77				
<b>Laboratory:</b>	ALS (Secondary Lab Eurofins MGT)				
<b>Lab reference:</b>	EM1709029; EM1709106; EM1709192; EM1709231; EM1709371; EM1709415	<b>Project Manager:</b>	Averyll Coyne		
	554049; 554208; 554577 (Secondary)				
Frequency of laboratory QC	The laboratory reported a sufficient frequency of quality control samples to assess whether the results have been reported to an acceptable accuracy and precision with the exception of:				
	<b>Batch</b>	<b>Analysis</b>	<b>Sample Type</b>	<b>Expected Frequency</b>	
	EM1709029	TRH – Semivolatile Fraction	Lab Dup	10%	5.88%
		TOS as SO42	Method Blank	5%	0%
		PAH/Phenols and Total Matrix Oxidised Sulfur as SO42Spike		5%	0%
	EM1709106	PAH/Phenols and TRH – Semivolatile Fraction	Lab Dup	10%	2.63%
		Nitrite & Nitrite as N	Lab Dup	10%	1.72%
		PAH/Phenols	Matrix Spike	5%	3.13%
		TOS as SO42	Matrix Spike	5%	2.63%
		TRH – Semivolatile Fraction	Matrix Spike	5%	4.76%
		TRH – Semivolatile Fraction	Matrix Spike	5%	1.72%
	EM1709192	Fluoride by PC Titrator	Lab Dup	10%	9.68%
		PAH/Phenols	Lab Dup	10%	0%
		TRH – Semivolatile Fraction	Lab Dup	10%	1.59%
		PAH/Phenols	Matrix Spike	5%	0%
		TRH – Semivolatile Fraction	Matrix Spike	5%	1.59%
	EM1709231	PAH/Phenols	Lab Dup		
		TRH – Semivolatile Fraction	Lab Dup		
		PAH/Phenols	Matrix Spike	10%	0%
			Matrix Spike	10%	0%
		TRH – Semivolatile Fraction	Matrix Spike	5%	0%
			Matrix Spike	5%	0%

TABLE E4: DATA VALIDATION REPORT					
<b>Project number:</b>	60537182	<b>Validation by:</b>	Natalie Cooper	<b>Date:</b>	7/08/2017
<b>Client:</b>	EPA Victoria				
<b>Site:</b>	Fishermans Bend				
<b>Matrix type:</b>	Water	<b>Data verified by:</b>	Natalie cooper	<b>Date:</b>	7/08/2017
<b>Primary samples:</b>	77				
<b>Laboratory:</b>	ALS (Secondary Lab Eurofins MGT)				
<b>Lab reference:</b>	EM1709029; EM1709106; EM1709192; EM1709231; EM1709371; EM1709415	<b>Project Manager:</b>	Averyll Coyne		
	554049; 554208; 554577 (Secondary)				
<b>Frequency of laboratory QC (cont'd)</b>	<b>Batch</b>	<b>Analysis</b>	<b>Sample Type</b>	<b>Expected Frequency</b>	
	EM1709371	Fluoride by PC Titrator	Lab Dup 10%	9.68%	
		PAH/Phenols	Lab Dup 10%	0%	
		TRH – Semivolatile Fraction	Lab Dup 10%	0%	
		PAH/Phenols	Matrix Spike 5%	0%	
		TRH – Semivolatile Fraction	Matrix Spike 5%	0%	
	EM1709415	PAH/Phenols	Lab Dup 10%	5.56%	
		TRH – Semivolatile Fraction	Lab Dup 10%	4.35%	
		TRH – Semivolatile Fraction	Matrix Spike 5%	0%	
Method Blank	Method blank concentrations were not detected above the LOR for all analytes tested.				
Laboratory duplicate RPDs	Laboratory duplicate Relative Percentage Differences (RPD) were within control limits. The laboratory duplicate RPDs are presented in the laboratory Quality Control Report.				
Laboratory control spike recovery	Laboratory Control Spikes (LCS) recoveries were within control limits.				

TABLE E4: DATA VALIDATION REPORT					
<b>Project number:</b>	60537182	<b>Validation by:</b>	Natalie Cooper	<b>Date:</b>	7/08/2017
<b>Client:</b>	EPA Victoria				
<b>Site:</b>	Fishermans Bend				
<b>Matrix type:</b>	Water	<b>Data verified by:</b>	Natalie cooper	<b>Date:</b>	7/08/2017
<b>Primary samples:</b>	77				
<b>Laboratory:</b>	ALS (Secondary Lab Eurofins MGT)				
<b>Lab reference:</b>	EM1709029; EM1709106; EM1709192; EM1709231; EM1709371; EM1709415	<b>Project Manager:</b>	Averyll Coyne		
	554049; 554208; 554577 (Secondary)				
<b>Matrix spike recovery</b>	All AECOM Matrix Spike (MS) recoveries (where reported) were within control limits with the exception of: <ul style="list-style-type: none"> <li>• GW44_11/07/17 for Sulfate as SO4 – Turbidimetric and Chloride where the Matrix Spike recovery was not determined due to the background level being greater than or equal to 4 spike level, and sample GW50_11/07/17 for 1,1-Dichloroethene where Recovery was greater than the upper control limit (recovery of 122%, acceptable limit 63-129% in batch EM1709106.</li> <li>• GW21_12/07/17 for 1,1-Dichloroethene where Recovery was greater than the upper control limit (recovery of 115%, acceptable limit 63-129%) in batch EM1709192.</li> <li>• GW46_13/7/17 for Sulfate as SO4 – Turbidimetric where the Matrix Spike recovery was not determined due to the background level being greater than or equal to 4 spike level in batch EM1709231.</li> <li>• GW74_14/07/17 for Sulfate as SO4 – Turbidimetric and Ammonia as N where the Matrix Spike recovery was not determined due to the background level being greater than or equal to 4 spike level in batch EM1709371.</li> <li>• GW32_17/07/17 for Manganese where the Matrix Spike recovery was not determined due to the background level being greater than or equal to 4 spike level in batch EM1709415.</li> </ul>				
<b>Surrogate spike recovery</b>	Surrogate spike recoveries were within control limits.				
QA/QC Data Evaluation					
<b>Comparison of Field Observations and Laboratory Results</b>	No anomalous results between field observations and analysis results were noted.				
<b>Data transcription</b>	A random 10% check of the laboratory results identified no anomalies within the electronic data, the laboratory reports, and tables generated by AECOM.				
<b>Limits of reporting</b>	Limits of Reporting (LORs) were sufficiently low to enable assessment against adopted guideline criteria.				

TABLE E4: DATA VALIDATION REPORT			
<b>Project number:</b>	60537182	<b>Validation by:</b>	Natalie Cooper
<b>Client:</b>	EPA Victoria	<b>Date:</b>	7/08/2017
<b>Site:</b>	Fishermans Bend		
<b>Matrix type:</b>	Water	<b>Data verified by:</b>	Natalie cooper
<b>Primary samples:</b>	77	<b>Date:</b>	7/08/2017
<b>Laboratory:</b>	ALS (Secondary Lab Eurofins MGT)		
<b>Lab reference:</b>	EM1709029; EM1709106; EM1709192; EM1709231; EM1709371; EM1709415	<b>Project Manager:</b>	Averyll Coyne
	554049; 554208; 554577 (Secondary)		
Field duplicate RPDs	<p>Field duplicate RPDs were reported within control limits with the exception of:</p> <ul style="list-style-type: none"> <li>• Sample QC203_11/07/17 (GW04_11/07/17) for Total Oxidised Sulfur as SO4 2-(RPD of 78%) (Copper (Filtered) (RPD of 66.67%) and Ammonia (as N) (RPD of 40%) are unlikely to impact interpretation as the reported results are less than 10XLOR)</li> <li>• Sample QC308_12/07/17 (GW19_12/07/17) for Iron (Filtered) (RPD of 56.2674094707521%) and Sulfate as SO4 - Turbidimetric (Filtered) (RPD of 36.62%) (Aluminium (Filtered) (RPD of 66.67%), Chromium (Filtered), (RPD of 40%), Nickel (RPD of 50%), Nickel (Filtered) (RPD of 100%) and Carbon disulphide (RPD of 66.67%) are unlikely to impact interpretation as the reported results are less than 10XLOR)</li> <li>• Sample QC109_14/07/17 (GW47_14/07/17) for Chromium (RPD of 35.2941176470588%) Sulfate as SO4 - Turbidimetric (Filtered) (RPD of 1.3381369016984%) (Copper (Filtered) (RPD of 40%) is unlikely to impact interpretation as the reported results are less than 10XLOR)</li> <li>• Sample QC204_11/07/17 (GW04_11/07/17) (Total Organic Carbon (RPD of 138.46%), Ammonia (as N) (RPD of 85.71%), Nitrate (as N) (RPD of 66.67%) and Fluoride (RPD of 40%) are unlikely to impact interpretation as the reported results are less than 10XLOR)</li> <li>• We are currently awaiting results for GW74.</li> </ul>		

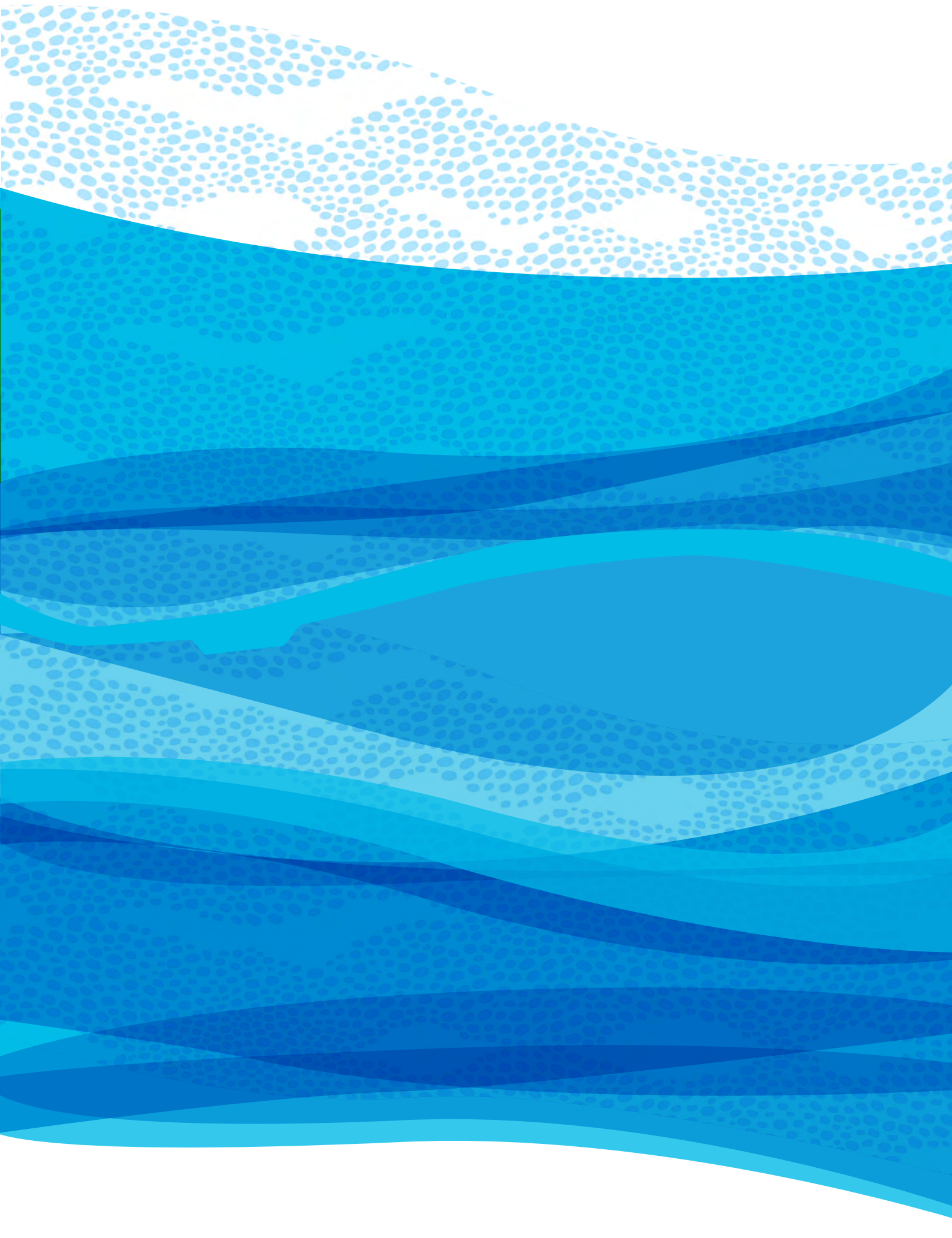


TABLE E4: DATA VALIDATION REPORT					
<b>Project number:</b>	60537182	<b>Validation by:</b>	Natalie Cooper	<b>Date:</b>	7/08/2017
<b>Client:</b>	EPA Victoria				
<b>Site:</b>	Fishermans Bend				
<b>Matrix type:</b>	Water	<b>Data verified by:</b>	Natalie cooper	<b>Date:</b>	7/08/2017
<b>Primary samples:</b>	77				
<b>Laboratory:</b>	ALS (Secondary Lab Eurofins MGT)				
<b>Lab reference:</b>	EM1709029; EM1709106; EM1709192; EM1709231; EM1709371; EM1709415	<b>Project Manager:</b>	Averyll Coyne		
	554049; 554208; 554577 (Secondary)				
Field triplicate RPDs	<p>Field triplicate RPDs were reported within control limits with the exception of:</p> <ul style="list-style-type: none"> <li>• Sample QC309_12/7/17 (GW19_12/07/17) for Arsenic (RPD of 40%), Chromium (RPD of 50%) (Nickel (RPD of 40%) and Fluoride (RPD of 66.67%) are unlikely to impact interpretation as the reported results are less than 10XLOR)</li> <li>• Sample QC313_14/7/17 (GW74_14/07/17) for Aluminium (RPD of 53.52%), Arsenic (RPD of 87.06%), Chromium (RPD of 61.16%), Copper (RPD of 81.82%), Iron (RPD of 59.72%), Nickel (RPD of 38.81%) and Zinc (RPD of 36.12%) (Cadmium (RPD of 40%), Lead (Filtered) (RPD of 66.67%) and Nitrate (as N) (RPD of 66.67%) are unlikely to impact interpretation as the reported results are less than 10XLOR)</li> <li>• Sample QC110_14/7/17 (GW47_14/07/17) for Aluminium (RPD of 130.43%), Iron (RPD of 84.3%), Iron (Filtered) (RPD of 30.45%), Manganese (RPD of 39.67%) and Manganese (Filtered) (RPD of 35.29%) (Chromium (RPD of 80%), Zinc (RPD of 47.62%), Zinc (Filtered) (RPD of 52.63%) and Fluoride (RPD of 46.15%) are unlikely to impact interpretation as the reported results are less than 10XLOR)</li> </ul>				
Other					
Ionic Balance	Acceptable				
Conversions	Valence states – S to SO <sub>4</sub> , NO <sub>3</sub> to N, etc.... Alkalinity – CaCO <sub>3</sub> to HCO <sub>3</sub> etc...				
Sum totals	Carcinogenic B(a)P – 0 x LOR, 0.5 x LOR, 1 x LOR for non-detects, TRH C10-C40, total xylenes, sum of BTEX laboratory reported.				

# **Calibration Certificates**

## **APPENDIX F**





## Multi Parameter Water Meter

Instrument YSI Quatro Pro Plus  
 Serial No. 10H100324



Air-Met Scientific Pty Ltd  
 1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad Display	Operation	✓	
	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper		
	Settings		
Software	Version		
Data logger	Operation		
Download	Operation		
Other tests:			

### Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. D.O		0 ppm		1608226559	0 ppm
2. Conductivity		2760uS		295604	2760uS
3. pH7		pH 7.00		290453	pH 7.00
4. pH4		pH 4.00		288384	pH 4.00
5. ORP mV		228.72		NI 1033/1034	228.72
7. Temp °C		22.4		Hanna- 163377	22.4

Calibrated by:

Phil Abbott

Calibration date:

7-Jul-17

Next calibration due:

3-Jan-18



ANZ

**FQM - Gas Monitoring Calibration Record**

Q4AN(EV)-003-FM1

<b>Project Name:</b>	Fishermen's Bend	<b>Project Number:</b>	60537182
<b>Project Location:</b>		<b>Client:</b>	EPA
<b>PM Name:</b>	Averyll Coyne	<b>Fieldwork Staff Name:</b>	JM BP BH

This calibration record is intended to prompt fieldwork staff to calibrate various gas instruments (PID, LEL, Landfill gas meters) daily before the start of fieldworks.

**INSTRUMENT DETAILS**

<b>Supplier:</b>	<i>ThermoFisher</i>
<b>Make and Model:</b>	<i>Mini Rae 3000</i>
<b>Serial Number:</b>	<i>P103000-69</i>
<b>For PID - Lamp Photon Energy (eV):</b>	

**CALIBRATION**

<b>Calibration (Span) Gas:</b>	<i>100% isobutylene.</i>
<b>Batch Number:</b>	<i>160292</i>
<b>Expiry Date:</b>	<i>04/1/2019</i>
<b>Concentration (ppm or % v/v):</b>	

**CALIBRATE WITH SPAN GAS**

<b>Calibration Date:</b>					
<b>Calibration Time:</b>					
<b>Fresh Air Calibration Reading (ppm or % v/v):</b>					
<b>Calibration Reading (ppm or % v/v):</b>					

**CORRECTION FACTOR**

The project HSEP provides the target compound/s of interest and should include the appropriate correction factor to be used for the PID.

<b>Target Compound/s:</b>	
<b>Correction Factor:</b>	

**BUMP TEST WITH SPAN GAS**

<b>Time:</b>	<i>7:26 AM</i>	<i>7:26 PM</i>	<i>7:23 AM</i>	<i>7:18 PM</i>	
<b>Bump Test Reading (ppm):</b>	<i>110.4 ppm</i>	<i>110.0</i>	<i>102.8</i>	<i>103.4</i>	

**ALARM LEVELS**

The project HSEP provides actions levels for the target compound/s of interest and the instrument should be set up with high and low level alarms based on the action level concentrations where required.

<b>High Level Alarm (ppm or % v/v):</b>	
<b>Low Level Alarm (ppm or % v/v):</b>	

**TEST ALARMS BY BUMP TEST**

<b>Time:</b>					
<b>Alarms Activated at Low Level (Y/N):</b>					

**COMMENTS**

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.


**Approval and Distribution**

 _____ Fieldwork Staff Signature	 _____ Date
---	---

**Distribution:** Project Central File



ANZ

**FQM - Gas Monitoring Calibration Record**

Q4AN(EV)-003-FM1

<b>Project Name:</b>	Fishermen's Bend	<b>Project Number:</b>	60537182
<b>Project Location:</b>		<b>Client:</b>	EPA
<b>PM Name:</b>	Averyll Coyne	<b>Fieldwork Staff Name:</b>	JM BP BH

This calibration record is intended to prompt fieldwork staff to calibrate various gas instruments (PID, LEL, Landfill gas meters) daily before the start of fieldworks.

**INSTRUMENT DETAILS**

<b>Supplier:</b>	ThermoFisher
<b>Make and Model:</b>	MIRAGE 3000
<b>Serial Number:</b>	PID 3000-70
<b>For PID - Lamp Photon Energy (eV):</b>	

**CALIBRATION**

<b>Calibration (Span) Gas:</b>	ISO 903-7
<b>Batch Number:</b>	160292
<b>Expiry Date:</b>	2019 Jul
<b>Concentration (ppm or % v/v):</b>	100 ppm

**CALIBRATE WITH SPAN GAS**

<b>Calibration Date:</b>	11/07/17	12/07/17	13/07/17	14/07/17
<b>Calibration Time:</b>	7:15	<del>7:10</del>		
<b>Fresh Air Calibration Reading (ppm or % v/v):</b>	0.0	<del>0.0</del>		
<b>Calibration Reading (ppm or % v/v):</b>	100.0			

**CORRECTION FACTOR**

The project HSEP provides the target compound/s of interest and should include the appropriate correction factor to be used for the PID.

<b>Target Compound/s:</b>	isobutylene
<b>Correction Factor:</b>	

**BUMP TEST WITH SPAN GAS**

<b>Time:</b>	7:18	7:09	7:15	7:15
<b>Bump Test Reading (ppm):</b>	100.5	105.3	108	104.1

**ALARM LEVELS**

The project HSEP provides actions levels for the target compound/s of interest and the instrument should be set up with high and low level alarms based on the action level concentrations where required.

<b>High Level Alarm (ppm or % v/v):</b>	
<b>Low Level Alarm (ppm or % v/v):</b>	

**TEST ALARMS BY BUMP TEST**

<b>Time:</b>				
<b>Alarms Activated at Low Level (Y/N):</b>				

**COMMENTS**

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.


**Approval and Distribution**


11/7/17

\_\_\_\_\_
\_\_\_\_\_

Fieldwork Staff Signature
Date

**Distribution:** Project Central File



ANZ

# FQM - Gas Monitoring Calibration Record

Q4AN(EV)-003-FM1

<b>Project Name:</b>	Fishermen's Bend	<b>Project Number:</b>	60537182
<b>Project Location:</b>		<b>Client:</b>	EPA
<b>PM Name:</b>	Averyll Coyne	<b>Fieldwork Staff Name:</b>	JM BP BH

This calibration record is intended to prompt fieldwork staff to calibrate various gas instruments (PID, LEL, Landfill gas meters) daily before the start of fieldworks.

### INSTRUMENT DETAILS

Supplier:	ThermoFisher
Make and Model:	Mini RGA 3000
Serial Number:	P1067
For PID - Lamp Photon Energy (eV):	10.6

### CALIBRATION

Calibration (Span) Gas:	150103 ISOBUTYLENE
Batch Number:	160292
Expiry Date:	July 2019
Concentration (ppm or % v/v):	

### CALIBRATE WITH SPAN GAS

Calibration Date:	12/07/17	12/07/17	13/07/17		
Calibration Time:					
Fresh Air Calibration Reading (ppm or % v/v):	0.00	0.00	0.00		
Calibration Reading (ppm or % v/v):	100.1	100.1	100.16		

### CORRECTION FACTOR

The project HSEP provides the target compound/s of interest and should include the appropriate correction factor to be used for the PID.

Target Compound/s:	
Correction Factor:	

### BUMP TEST WITH SPAN GAS

Time:	12/07/17	12/07/17	13/0	14/17	17/4
Bump Test Reading (ppm):	100.1 ppm	100.10	100.10 ppm	106.4	103.7

### ALARM LEVELS

The project HSEP provides actions levels for the target compound/s of interest and the instrument should be set up with high and low level alarms based on the action level concentrations where required.

High Level Alarm (ppm or % v/v):	50
Low Level Alarm (ppm or % v/v):	250

### TEST ALARMS BY BUMP TEST

Time:	7:15	7:26	7:13		
Alarms Activated at Low Level (Y/N):	Y	Y	Y		

### COMMENTS

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.


### Approval and Distribution

  
 \_\_\_\_\_  
 Fieldwork Staff Signature

\_\_\_\_\_  
 Date

Distribution: Project Central File





# RENTALS

## Equipment Report – Solinst Model 122 Interface Meter

This Meter has been performance checked / calibrated as follows:

**Cleaned/Tested** Pass?  Yes  No

Probe

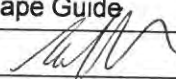
Tape/Reel

Performance Test & Battery Voltage Check (8.9 V) 8.0V minimum

Date: 7/7/2017 Checked by: M. WATTS

Signed: 

Please check that the following items are received and that all items are cleaned and decontaminated before return. A minimum \$20 cleaning / service / repair charge may be applied to any unclean or damaged items. Items not returned will be billed for at the full replacement cost.

Sent	Received	Returned	Item
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Operations check OK
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Plastic Box / Bag
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Spare 9V Battery Qty <u>2</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Probe Cleaning Brush
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Decon
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Instruction leaflet
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Tape Guide
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u></u>
Processors Signature/ Initials			

Quote Reference	<u>CM007805</u>	Condition on return
Customer Ref	<u>60537182/3.5</u>	
Equipment ID	<u>60 Meter SOL122</u>	
Equipment serial no.		
Return Date	<u> / /</u>	
Return Time		

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Phone: (Free Call) 1300 735 295		Fax: (Free Call) 1800 675 123		Email: <a href="mailto:RentalsAU@Thermofisher.com">RentalsAU@Thermofisher.com</a>	
Melbourne Branch 5 Caribbean Drive, Scoresby 3179	Sydney Branch Level 1, 4 Talavera Road, North Ryde 2113	Adelaide Branch 27 Seafish Road, Norwood, South Australia 5067	Brisbane Branch Unit 2/5 Ross St Newstead 4006	Perth Branch 121 Beringarra Ave Malaga WA 6080	



# RENTALS

## Equipment Report - MiniRAE 3000 PID

This Gas Meter has been performance checked and calibrated as follows:

Lamp	Compound	Concentration	Zero	Span	Traceability Lot #	Pass?
10.6 eV	Isobutylene	100 ppm	0 ppm	100 ppm	205276	<input checked="" type="checkbox"/>

### Alarm Limits

High	100 ppm
Low	50 ppm

### Bump Test

Date	Target Gas	Reading	Pass?
6/7	100 ppm	101.1 ppm	<input checked="" type="checkbox"/>

- Battery Status 100%
- 10 minutes test complete
- Spare battery status (Min 5.5 volts)
- Electrical Safety Tag attached (AS/NZS 3760)

- Performance check (pump, lamp, sensor)
- Data cleared
- Filters checked

Tag No: 001356

Valid to: 05-09-2017

Date: 7/7/2017

Signed: Munja

Please check that the following items are received and that all items are cleaned and decontaminated before return. A minimum \$30 cleaning / service / repair charge may be applied to any unclean or damaged items. Items not returned will be billed for at the full replacement cost.

Sent	Returned	Item
<input checked="" type="checkbox"/>	<input type="checkbox"/>	MiniRAE 2000 PID / Operational Check / Battery Status <u>100%</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Lamp <u>106</u> eV, Compound Set to: <u>Isobutylene</u> C/factor: <u>1.1</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Protective yellow rubber boot
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Inlet probe (attached to PID)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Spare water trap filter(s) Qty <u>03</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Charger 240V to 12V1250mA
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cradle and Travel Charger
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Instruction Manual behind foam on the lid of case "
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Quick Guide Sheet behind foam on the lid of case "
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Spare Alkaline Battery Compartment with batteries
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Inline Moisture trap Filter Guide Laminated
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Calibration regulator & tubing (optional)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Data cable and Software CD (optional)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Carry Case
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Check to confirm electrical safety (tag must be valid)

Date: 7/7/2017

Signed: Munja

TFS Reference	<u>C M007805</u>	Return Date:	<u> / /</u>
Customer Reference	<u>60537182/3.5</u>	Return Time:	
Equipment ID	<u>PID300070</u>	Condition on return:	
Equipment Serial No.			

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Phone: (Free Call) 1300 735 295		Fax: (Free Call) 1800 675 123		Email: RentalsAU@ThermoFisher.com	
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# RENTALS

## Equipment Certification Report – TPS 90FLMV Water Quality Meter

This Water Quality Meter has been performance checked and calibrated as follows:

Sensor	Concentration	Span 1	Span 2	Traceability Lot #	Pass?
pH	pH 6.88 / pH 4.00	6.88pH	4.00pH	288384/289902	<input checked="" type="checkbox"/>
Conductivity	58.6mS/cm	0.0mS/cm	58.6mS/cm	304106	<input checked="" type="checkbox"/>
TDS	36 ppk	0.0 ppk	36.0ppk	292262	<input checked="" type="checkbox"/>
Dissolved Oxygen	Sodium Sulphite / Air	0.0ppm in Sodium Sulphite	9.1 ppm Saturation in Air	2920	<input checked="" type="checkbox"/>

**Check only**

Redox (ORP) *	Electrode operability test	240Mv +/- 10%	241 mV	OC1127	<input checked="" type="checkbox"/>
---------------	----------------------------	---------------	--------	--------	-------------------------------------

\* This meter uses an Ag/AgCl ORP electrode. To convert readings to SHE (Standard Hydrogen Electrode), add 199mV to the mV reading.

- Battery Status 8.0V (min 7.2V)
- Electrical Safety Tag attached (AS/NZS 3760)

- Temperature 19.3 °C
- Electrodes Cleaned and checked

Tag No: 001355

Valid to: 2/9/17

Date: 7th July 2017

Signed: 

Please check that the following items are received and that all items are cleaned and decontaminated before return. A minimum \$30 cleaning / service / repair charge may be applied to any unclean or damaged items. Items not returned will be billed for at the full replacement cost.

Sent	Returned	Item
<input checked="" type="checkbox"/>	<input type="checkbox"/>	90FLMV Unit. Ops check/Battery status: <u>8.18V</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	pH sensor with wetting cap, 5m
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Conductivity/TDS/Temperature K=10 sensor, 5m
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dissolved oxygen YSI5739 sensor with wetting cap, 5m
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Redox (ORP) sensor with wetting cap, 5m
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Power supply 240V to 12V DC 200mA
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Instruction Manual
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Quick Guide
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Syringe with storage solution for pH and ORP sensors
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Carry Case
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Check to confirm electrical safety (tag must be valid)

Date: 7/7/17

Signed: 

TFS Reference	<u>CM 007805</u>	Return Date:	/ /
Customer Reference	<u>60537182</u>	Return Time:	
Equipment ID	<u>90FLMV D .3.5</u>	Condition on return:	
Equipment Serial No.			

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# RENTALS

## Equipment Report - MiniRAE 3000 PID

This Gas Meter has been performance checked and calibrated as follows:

Lamp	Compound	Concentration	Zero	Span	Traceability Lot #	Pass?
10.6eV	Isobutylene	100 ppm	0 ppm	100 ppm	285276	<input checked="" type="checkbox"/>

### Alarm Limits

High	100 ppm
Low	50 ppm

### Bump Test

Date	Target Gas	Reading	Pass?
6/7	100 ppm	101 ppm	<input checked="" type="checkbox"/>

- Battery Status 100%
- 10 minutes test complete
- Spare battery status (Min 5.5 volts)
- Electrical Safety Tag attached (AS/NZS 3760)

- Performance check (pump, lamp, sensor)
- Data cleared
- Filters checked

Tag No: 001353

Valid to: 01-09-2017

Date: 7/7/2017

Signed: Munjo

Please check that the following items are received and that all items are cleaned and decontaminated before return. A minimum \$30 cleaning / service / repair charge may be applied to any unclean or damaged items. Items not returned will be billed for at the full replacement cost.

Sent	Returned	Item
<input checked="" type="checkbox"/>	<input type="checkbox"/>	MiniRAE 2000 PID / Operational Check / Battery Status <u>100%</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Lamp <u>10.6</u> eV, Compound Set to: <u>Isobutylene</u> C/factor: <u>12.1</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Protective yellow rubber boot
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Inlet probe (attached to PID)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Spare water trap filter(s) Qty <u>02</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Charger 240V to 12V1250mA
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cradle and Travel Charger
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Instruction Manual behind foam on the lid of case "
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Quick Guide Sheet behind foam on the lid of case "
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Spare Alkaline Battery Compartment with batteries
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Inline Moisture trap Filter Guide Laminated
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Calibration regulator & tubing (optional)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Data cable and Software CD (optional)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Carry Case
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Check to confirm electrical safety (tag must be valid)

Date: 7/7/2017

Signed: Munjo

TFS Reference	<u>CM007825</u>	Return Date:	<u> / /</u>
Customer Reference	<u>60537182/305</u>	Return Time:	
Equipment ID	<u>1103000-69</u>	Condition on return:	
Equipment Serial No.			

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# RENTALS

## Equipment Report – Solinst Model 122 Interface Meter

This Meter has been performance checked / calibrated as follows:

**Cleaned/Tested** Pass?  **Yes**  **No**

Probe

Tape/Reel

Performance Test & Battery Voltage Check (8.9V) 8.0V minimum

Date: 7/7/2017 Checked by: MAN

Signed: [Signature]

Please check that the following items are received and that all items are cleaned and decontaminated before return. A minimum \$20 cleaning / service / repair charge may be applied to any unclean or damaged items. Items not returned will be billed for at the full replacement cost.

Sent	Received	Returned	Item
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Operations check OK
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Plastic Box / Bag
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Spare 9V Battery Qty <u>2</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Probe Cleaning Brush
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Decon
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Instruction leaflet
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Tape Guide
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Processors Signature/ Initials

[Signature]

Quote Reference	<u>CM007805</u>	Condition on return
Customer Ref	<u>60537182/3.5</u>	
Equipment ID	<u>60 Meter SOL122</u>	
Equipment serial no.		
Return Date	<u> / /</u>	
Return Time		

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# RENTALS

## Equipment Report - MiniRAE 3000 PID

This Gas Meter has been performance checked and calibrated as follows:

Lamp	Compound	Concentration	Zero	Span	Traceability Lot #	Pass?
10.6 eV	Isobutylene	100 ppm	0 ppm	100 ppm	205276	<input checked="" type="checkbox"/>

### Alarm Limits

High	100 ppm
Low	50 ppm

### Bump Test

Date	Target Gas	Reading	Pass?
6/7	100 ppm	101 ppm	<input checked="" type="checkbox"/>

- Battery Status 100%
- 10 minutes test complete
- Spare battery status (Min 5.5 volts)
- Electrical Safety Tag attached (AS/NZS 3760)

- Performance check (pump, lamp, sensor)
- Data cleared
- Filters checked

Tag No: 601332

Valid to: 18.08.2017

Date: 7/7/2017

Signed: [Signature]

Please check that the following items are received and that all items are cleaned and decontaminated before return. A minimum \$30 cleaning / service / repair charge may be applied to any unclean or damaged items. Items not returned will be billed for at the full replacement cost.

Sent	Returned	Item
<input checked="" type="checkbox"/>	<input type="checkbox"/>	MiniRAE 2000 PID / Operational Check / Battery Status <u>100%</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Lamp <u>10.6</u> eV, Compound Set to: <u>Isobutylene</u> C/factor: <u>1.1</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Protective yellow rubber boot
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Inlet probe (attached to PID)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Spare water trap filter(s) Qty <u>03</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Charger 240V to 12V1250mA
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cradle and Travel Charger
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Instruction Manual behind foam on the lid of case "
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Quick Guide Sheet behind foam on the lid of case "
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Spare Alkaline Battery Compartment with batteries
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Inline Moisture trap Filter Guide Laminated
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Calibration regulator & tubing (optional)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Data cable and Software CD (optional)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Carry Case
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Check to confirm electrical safety (tag must be valid)

Date: 7/7/2016

Signed: [Signature]

TFS Reference	<u>C1007405</u>	Return Date:	<u>/ /</u>
Customer Reference	<u>66537182/3.5</u>	Return Time:	
Equipment ID	<u>PID 3000-67</u>	Condition on return:	
Equipment Serial No.			

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# RENTALS

## Equipment Certification Report – TPS 90FLMV Water Quality Meter

This Water Quality Meter has been performance checked and calibrated as follows:

Sensor	Concentration	Span 1	Span 2	Traceability Lot #	Pass?
pH	pH 6.88 / pH 4.00	6.88pH	4.00pH	288384/289902	<input checked="" type="checkbox"/>
Conductivity	58.6mS/cm	0.0mS/cm	58.6mS/cm	304106	<input checked="" type="checkbox"/>
TDS	36 ppk	0.0 ppk	36.0ppk	292262	<input checked="" type="checkbox"/>
Dissolved Oxygen	Sodium Sulphite / Air	0.0ppm in Sodium Sulphite	9.14 ppm Saturation in Air	2920	<input checked="" type="checkbox"/>

**Check only**

Redox (ORP) *	Electrode operability test	240mV +/- 10%	246 mV	OC1127	<input checked="" type="checkbox"/>
---------------	----------------------------	---------------	--------	--------	-------------------------------------

\* This meter uses an Ag/AgCl ORP electrode. To convert readings to SHE (Standard Hydrogen Electrode), add 199mV to the mV reading.

- Battery Status 8.00 (min 7.2V)  Temperature 19.6 °C  
 Electrical Safety Tag attached (AS/NZS 3760)  Electrodes Cleaned and checked

Tag No: 0000011

Valid to: 7/10/17.

Date: 7th July 2017.

Signed: [Signature]

Please check that the following items are received and that all items are cleaned and decontaminated before return. A minimum \$30 cleaning / service / repair charge may be applied to any unclean or damaged items. Items not returned will be billed for at the full replacement cost.

Sent	Returned	Item
<input checked="" type="checkbox"/>	<input type="checkbox"/>	90FLMV Unit. Ops check/Battery status: <u>8.13v</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	pH sensor with wetting cap, 5m
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Conductivity/TDS/Temperature K=10 sensor, 5m
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Dissolved oxygen YSI5739 sensor with wetting cap, 5m
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Redox (ORP) sensor with wetting cap, 5m
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Power supply 240V to 12V DC 200mA
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Instruction Manual
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Quick Guide
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Syringe with storage solution for pH and ORP sensors
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Carry Case
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Check to confirm electrical safety (tag must be valid)

Date: 7/7/17.

Signed: [Signature]

TFS Reference	<u>CM007805</u>	Return Date:	<u>/ /</u>
Customer Reference	<u>60537182/3.5</u>	Return Time:	
Equipment ID	<u>90FLMV R</u>	Condition on return:	
Equipment Serial No.			

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# RENTALS

## Equipment Report – Solinst Model 122 Interface Meter

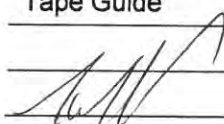
This Meter has been performance checked / calibrated as follows:

- Cleaned/Tested**                      **Pass?**  **Yes**                       **No**
- Probe
- Tape/Reel
- Performance Test & Battery Voltage Check (8.7 V) 8.0V minimum

Date: 7/7/2017                      Checked by: MAT

Signed: 

Please check that the following items are received and that all items are cleaned and decontaminated before return. A minimum \$20 cleaning / service / repair charge may be applied to any unclean or damaged items. Items not returned will be billed for at the full replacement cost.

Sent	Received	Returned	Item
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Operations check OK
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Plastic Box / Bag
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Spare 9V Battery Qty <u>2</u>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Probe Cleaning Brush
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Decon
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Instruction leaflet
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Tape Guide
Processors Signature/ Initials			<u></u>

Quote Reference	<u>C1M007805</u>	Condition on return
Customer Ref	<u>62537182/3.5</u>	
Equipment ID	<u>60 Meter SOL122</u>	
Equipment serial no.		
Return Date	<u>  /  /</u>	
Return Time		

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FQM - Water Quality Meter Calibration Record

Project Name:	Fishermen's Bend	Project Number:	60537182
Project Location:		Client:	EPA
PM Name:	Averyll Coyne	Fieldwork Staff Name:	JM BP BH

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

**INSTRUMENT DETAILS**

Supplier:	ThermoFisher
Make and Model:	90-FLMV
Serial Number:	90FLMV7C

**CALIBRATION**

**CALIBRATE WITH CALIBRATION SOLUTIONS**

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	4.00				
Calibration Reading:	4.00				
Calibration Temperature:	7.4°C				

**ONGOING CHECKS**

**BUMP TEST WITH CALIBRATION SOLUTION**

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	4	6.88	54µS	0.0	
Bump Test Reading:	52.2µS	6.90	52.6µS	0.09	
Bump Test Temperature:	7.4°C			7.3°C	

Redox  
260ml

**COMMENTS**

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

**Approval and Distribution**

Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

Fieldwork Staff Signature \_\_\_\_\_

Date \_\_\_\_\_

Distribution: Project Central File

ANZ

**FQM - Water Quality Meter Calibration Record**

Q4AN(EV)-410-FM1

<b>Project Name:</b>	Fishermen's Bend	<b>Project Number:</b>	60537182
<b>Project Location:</b>		<b>Client:</b>	EPA
<b>PM Name:</b>	Averyll Coyne	<b>Fieldwork Staff Name:</b>	JM BP BH

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

**INSTRUMENT DETAILS**

<b>Supplier:</b>	<i>Remcofiter</i>
<b>Make and Model:</b>	<i>TPS 90-FLM</i>
<b>Serial Number:</b>	<i>TPS 90-FLM VSC</i>

**CALIBRATION**

**CALIBRATE WITH CALIBRATION SOLUTIONS**

<b>Date and Time:</b>	<i>7:30 11/07/17</i>				
<b>Parameter</b>	Acidity		Conductivity	Dissolved Oxygen	
<b>Units</b>	pH	pH	µS/cm	ppm	ppm
<b>Calibration Standard Concentration:</b>	<i>0.00</i>	<i>4.0</i>	<i>54</i>	<i>0.00</i>	
<b>Calibration Reading:</b>	<i>9.01</i>	<i>4.05</i>	<i>23.845</i>	<i>0.09</i>	<i>255</i>
<b>Calibration Temperature:</b>	<i>9.6</i>	<i>9.6°C</i>		<i>9.6</i>	<i>9.6°C</i>

*Relax*

**ONGOING CHECKS**

**BUMP TEST WITH CALIBRATION SOLUTION**

<b>Date and Time:</b>					
<b>Parameter</b>	Acidity		Conductivity	Dissolved Oxygen	
<b>Units</b>	pH	pH	µS/cm	ppm	ppm
<b>Calibration Standard Concentration:</b>					
<b>Bump Test Reading:</b>					
<b>Bump Test Temperature:</b>					

**COMMENTS**

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

*(Large empty space for handwritten comments)*

**Approval and Distribution**

Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

\_\_\_\_\_ **Fieldwork Staff Signature**

\_\_\_\_\_ **Date**

**Distribution:** Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name: Fishermen's Bend		Project Number: 60537182			
Project Location:		Client: EPA			
PM Name: Averyll Coyne		Fieldwork Staff Name: JM BP BH			
This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.					
<b>INSTRUMENT DETAILS</b>					
Supplier:					
Make and Model:					
Serial Number:					
<b>CALIBRATION</b>					
<b>CALIBRATE WITH CALIBRATION SOLUTIONS</b>					
Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					
<b>ONGOING CHECKS</b>					
<b>BUMP TEST WITH CALIBRATION SOLUTION</b>					
Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	4	6.99		0.09	(not enough PO <sub>2</sub> sol)
Bump Test Reading:	3.94	6.83	52.1		Relax
Bump Test Temperature:					26.3mV
<b>COMMENTS</b>					
Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.					
<b>Approval and Distribution</b>					
<input type="checkbox"/> Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.					
_____ Fieldwork Staff Signature		14/07/17 _____ Date			
Distribution: Project Central File					









ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	Fishermen's Bend	Project Number:	60537182
Project Location:		Client:	EPA
PM Name:	Averyll Coyne	Fieldwork Staff Name:	JM BP BM

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

**INSTRUMENT DETAILS**

Supplier:	thermoFisher
Make and Model:	90FLMVD
Serial Number:	D

**CALIBRATION**

**CALIBRATE WITH CALIBRATION SOLUTIONS**

Date and Time:	12/7/17 9:36				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

**ONGOING CHECKS**

**BUMP TEST WITH CALIBRATION SOLUTION**

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	6.88	4.00	54200	0.0	257
Bump Test Reading:	6.89	4.07	53600	0.13	258
Bump Test Temperature:	27			76	7.6

**COMMENTS**

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

**Approval and Distribution**

Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

  
 \_\_\_\_\_  
 Fieldwork Staff Signature

12/7/17  
 \_\_\_\_\_  
 Date

Distribution: Project Central File

ANZ

**FQM - Water Quality Meter Calibration Record**

Q4AN(EV)-410-FM1

<b>Project Name:</b>	Fishermen's Bend	<b>Project Number:</b>	60537182
<b>Project Location:</b>		<b>Client:</b>	EPA
<b>PM Name:</b>	Averyll Coyne	<b>Fieldwork Staff Name:</b>	JM BP BH

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

**INSTRUMENT DETAILS**

Supplier:	ThermoFisher				
Make and Model:	90FLMV				
Serial Number:	D				

**CALIBRATION**

**CALIBRATE WITH CALIBRATION SOLUTIONS**

Date and Time:	13/7/17 7:30				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

**ONGOING CHECKS**

**BUMP TEST WITH CALIBRATION SOLUTION**

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	6.88	4.00	54200	0	Kedox
Bump Test Reading:	6.87	4.04	53800	0.08	2.55
Bump Test Temperature:	9.7	9.7	9.7	9.5	9.6

**COMMENTS**

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

**Approval and Distribution**

Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

*[Signature]*

13/7/17

Fieldwork Staff Signature

Date

Distribution: Project Central File





ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	Fishermen's Bend	Project Number:	60537182
Project Location:	Fishermans Bend	Client:	EPA
PM Name:	Averyll Coyne	Fieldwork Staff Name:	JM BP BH

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

**INSTRUMENT DETAILS**

Supplier:	ThermoFisher
Make and Model:	FIM 90 VR
Serial Number:	

**CALIBRATION**

**CALIBRATE WITH CALIBRATION SOLUTIONS**

Date and Time:	11/07/17				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	6.98				
Calibration Reading:	6.98				
Calibration Temperature:	19.8				

**ONGOING CHECKS**

**BUMP TEST WITH CALIBRATION SOLUTION**

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	6.88	4.00	58.8	No calibration solution	
Bump Test Reading:	6.98	4.07	58.8	Solution	
Bump Test Temperature:	19.8	19.8	19.8		

**COMMENTS**

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

OKP 11/7/17  
259

**Approval and Distribution**

Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

*[Signature]*

Fieldwork Staff Signature

Date

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	Fishermen's Bend	Project Number:	60537182
Project Location:		Client:	EPA
PM Name:	Averyll Coyne	Fieldwork Staff Name:	JM BP BH

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

**INSTRUMENT DETAILS**

Supplier:	ThermoFisher
Make and Model:	FLM90
Serial Number:	VR

**CALIBRATION**

**CALIBRATE WITH CALIBRATION SOLUTIONS**

Date and Time:	12/07/17				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	6.88				
Calibration Reading:	7.06				
Calibration Temperature:	8.9				

**ONGOING CHECKS**

**BUMP TEST WITH CALIBRATION SOLUTION**

Date and Time:	12/07/17				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	6.88	4.00	58.8		
Bump Test Reading:	7.06	4.31	57.1	No	Solution
Bump Test Temperature:	8.90	8.90			

**COMMENTS**

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

ORP 259 @ 8.90

**Approval and Distribution**

Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

Josh Smith  
Fieldwork Staff Signature

12/07/17  
Date

Distribution: Project Central File



FQM - Water Quality Meter Calibration Record

<b>Project Name:</b>	Fishermen's Bend	<b>Project Number:</b>	60537182
<b>Project Location:</b>		<b>Client:</b>	EPA
<b>PM Name:</b>	Averyll Coyne	<b>Fieldwork Staff Name:</b>	JM BP BH

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

**INSTRUMENT DETAILS**

Supplier:	ThermoFisher
Make and Model:	90FLMVR
Serial Number:	R

**CALIBRATION**

**CALIBRATE WITH CALIBRATION SOLUTIONS**

Date and Time:	13/7/17 7:20				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	6.88	4.00			
Calibration Reading:	6.89	3.99			
Calibration Temperature:	9.2	9.7			

**ONGOING CHECKS**

**BUMP TEST WITH CALIBRATION SOLUTION**

Date and Time:					
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	6.88	4.00	54200	not enough solution	
Bump Test Reading:	6.89	9.04	55400		
Bump Test Temperature:	9.5	9.5	10.3		

**COMMENTS**

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

**Approval and Distribution**

Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

*Jacob Miller*  
Fieldwork Staff Signature

13/07/17  
Date

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	Fishermen's Bend	Project Number:	60537182
Project Location:		Client:	EPA
PM Name:	Averyll Coyne	Fieldwork Staff Name:	JM BP BH

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

**INSTRUMENT DETAILS**

Supplier:	ThermoFisher
Make and Model:	90 FLMVR
Serial Number:	

**CALIBRATION**

**CALIBRATE WITH CALIBRATION SOLUTIONS**

Date and Time:	14/07/17 7:35				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

**ONGOING CHECKS**

**BUMP TEST WITH CALIBRATION SOLUTION**

Date and Time:	14/07/17 7:40				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	6.68	4.00	54200	not enough	
Bump Test Reading:	6.67	4.05	55400	Solution	
Bump Test Temperature:	10.4	10.4	10.4		

**COMMENTS**

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

**Approval and Distribution**

Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

*[Signature]*  
Fieldwork Staff Signature

14/07/17  
Date

Distribution: Project Central File

ANZ

FQM - Water Quality Meter Calibration Record

Q4AN(EV)-410-FM1

Project Name:	Fishermen's Bend	Project Number:	60537182
Project Location:		Client:	EPA
PM Name:	Averyll Coyne	Fieldwork Staff Name:	JM BP BH

This calibration record is intended to prompt fieldwork staff to calibrate water quality meter (WQM) daily before the start of fieldworks.

**INSTRUMENT DETAILS**

Supplier:	<i>ThermoFisher</i>
Make and Model:	<i>90 FLM JR</i>
Serial Number:	<i>✓</i>

**CALIBRATION**

**CALIBRATE WITH CALIBRATION SOLUTIONS**

Date and Time:	<i>1</i>				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:					
Calibration Reading:					
Calibration Temperature:					

**ONGOING CHECKS**

**BUMP TEST WITH CALIBRATION SOLUTION**

Date and Time:	<i>17/10/17</i>				
Parameter	Acidity		Conductivity	Dissolved Oxygen	
Units	pH	pH	µS/cm	ppm	ppm
Calibration Standard Concentration:	<i>6.75</i>	<i>4.80</i>	<i>54200</i>		
Bump Test Reading:	<i>6.88</i>	<i>3.85</i>	<i>55400</i>	<i>not enough solution</i>	
Bump Test Temperature:	<i>10.0</i>	<i>9.90</i>	<i>10.0</i>		

**COMMENTS**

Detail any equipment faults, minor maintenance performed, change of batteries or technical support provided.

**Approval and Distribution**

Each individual instrument has been inspected and calibrated daily and bump tested as required by fieldwork staff.

*17/07/17*  
 \_\_\_\_\_  
 Fieldwork Staff Signature

*David Smith*  
 \_\_\_\_\_  
 Date

Distribution: Project Central File



# QQ Plots

## APPENDIX G



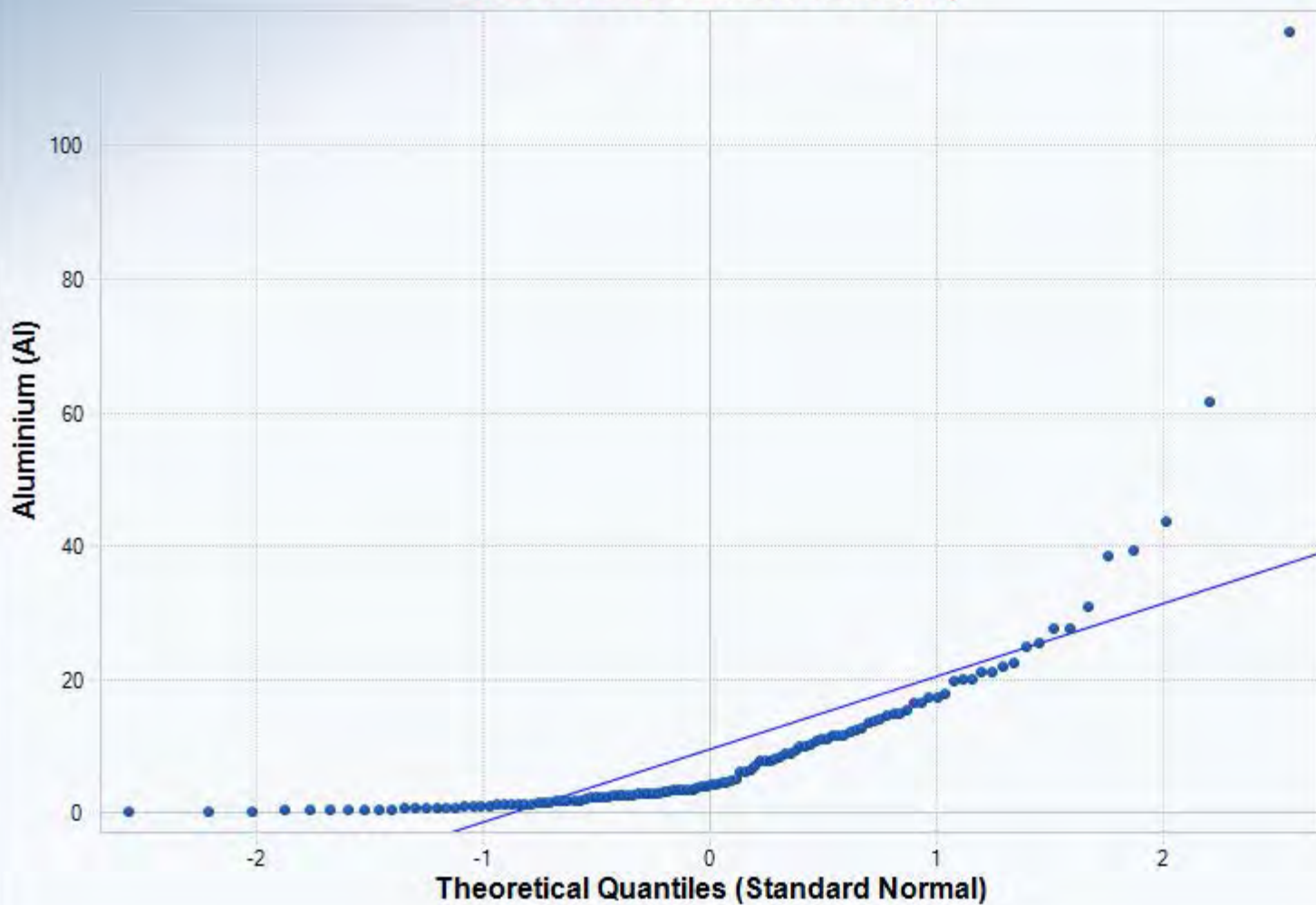


## Q-Q Plot for Aluminium (Al)

### Aluminium (Al)

N = 118  
Mean = 9.52  
Sd = 14.31  
Slope = 11  
Intercept = 9.52  
Correlation, R = 0.762

■ Best Fit Line



## Q-Q Plot for Ammonia (as N)

### Ammonia (as N)

N = 194

Mean = 8.769

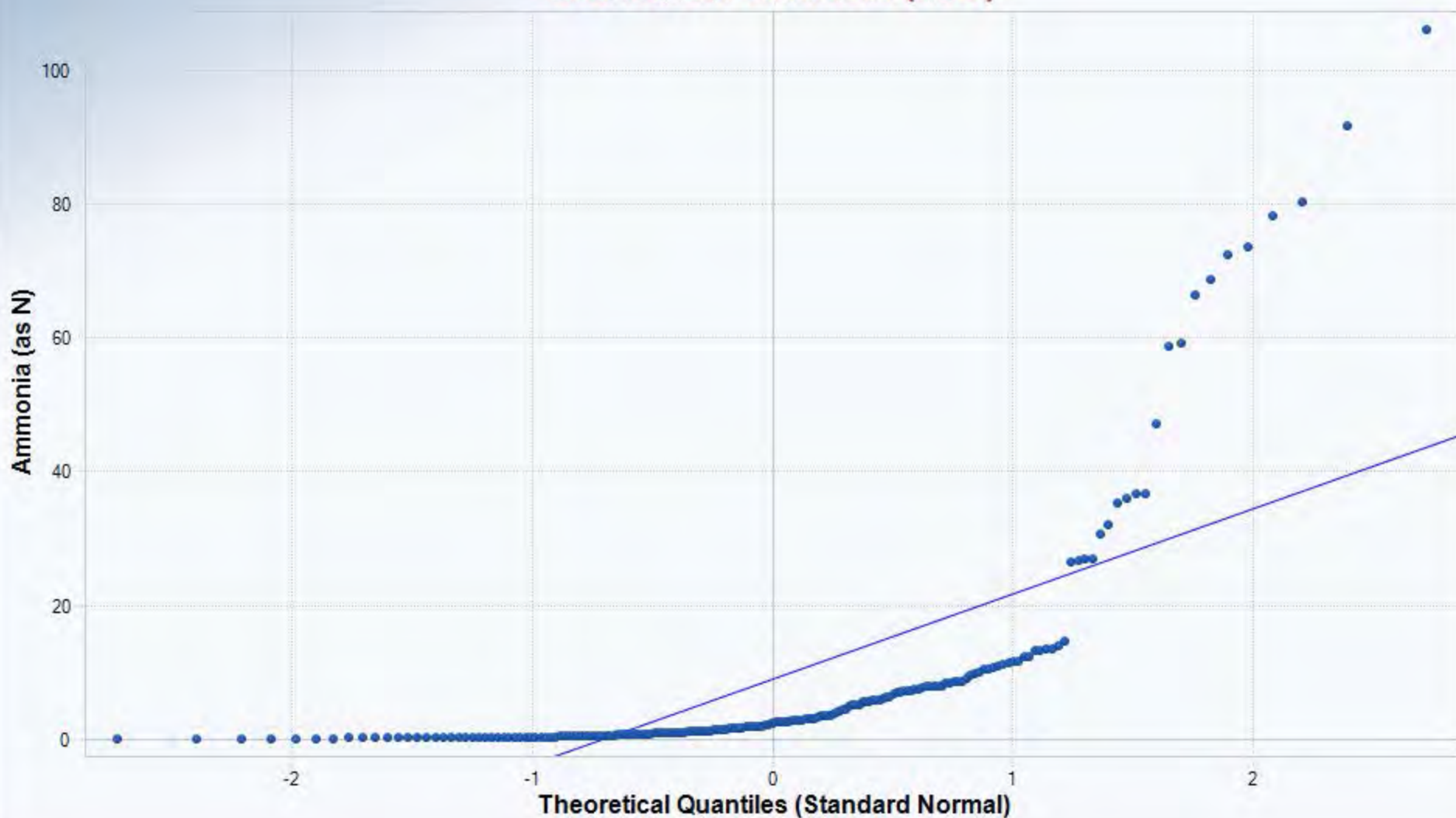
Sd = 17.75

Slope = 12.79

Intercept = 8.769

Correlation, R = 0.716

■ Best Fit Line



### Q-Q Plot for Arsenic (As)

#### Arsenic (As)

N = 117  
Mean = 0.031  
Sd = 0.0409  
Slope = 0.0324  
Intercept = 0.031  
Correlation, R = 0.783

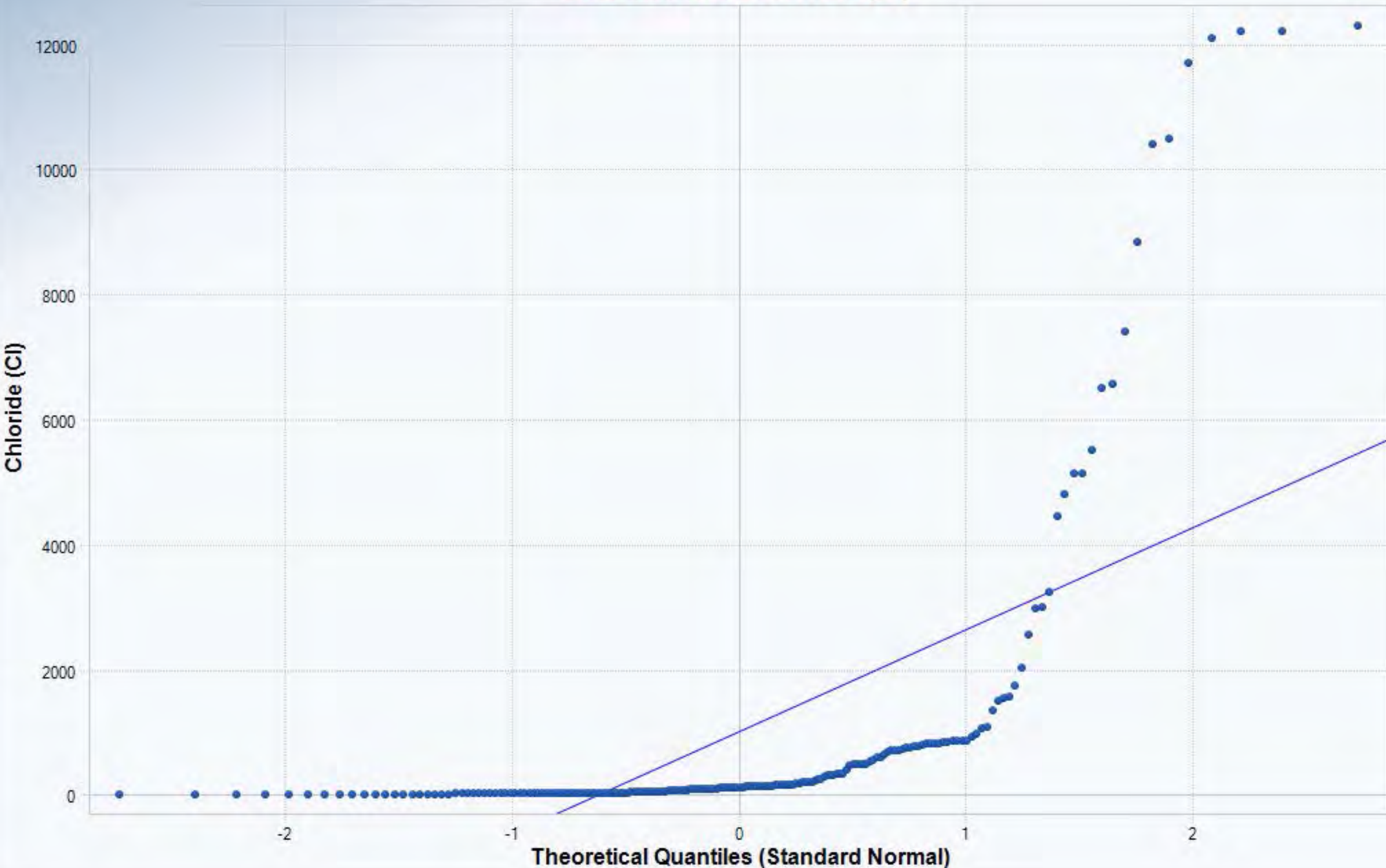
■ Best Fit Line





# Q-Q Plot for Chloride (Cl)

**Chloride (Cl)**  
N = 194  
Mean = 1004  
Sd = 2465  
Slope = 1636  
Intercept = 1004  
Correlation, R = 0.659



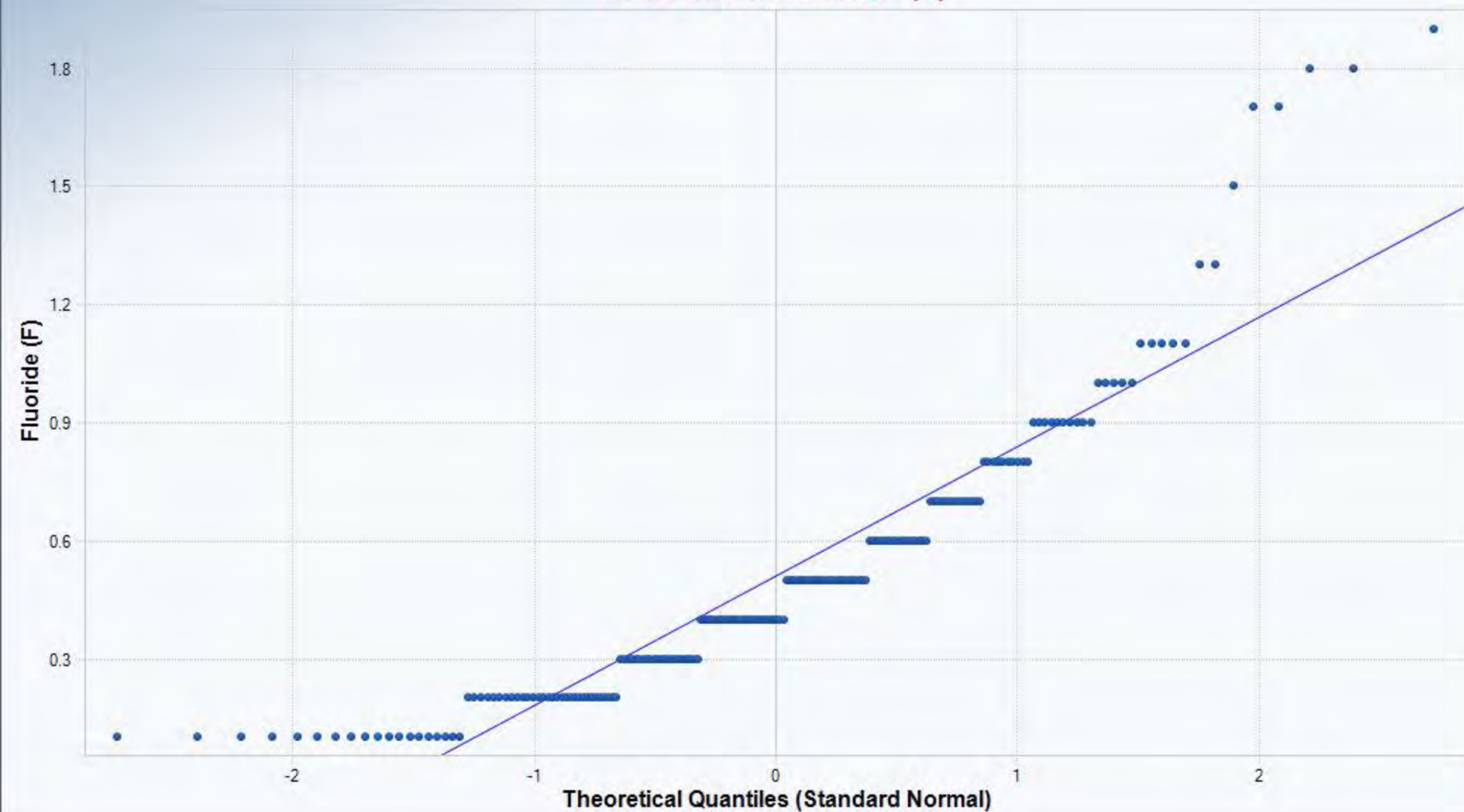
■ Best Fit Line

### Q-Q Plot for Fluoride (F)

#### Fluoride (F)

N = 194  
Mean = 0.508  
Sd = 0.351  
Slope = 0.329  
Intercept = 0.508  
Correlation, R = 0.932

■ Best Fit Line

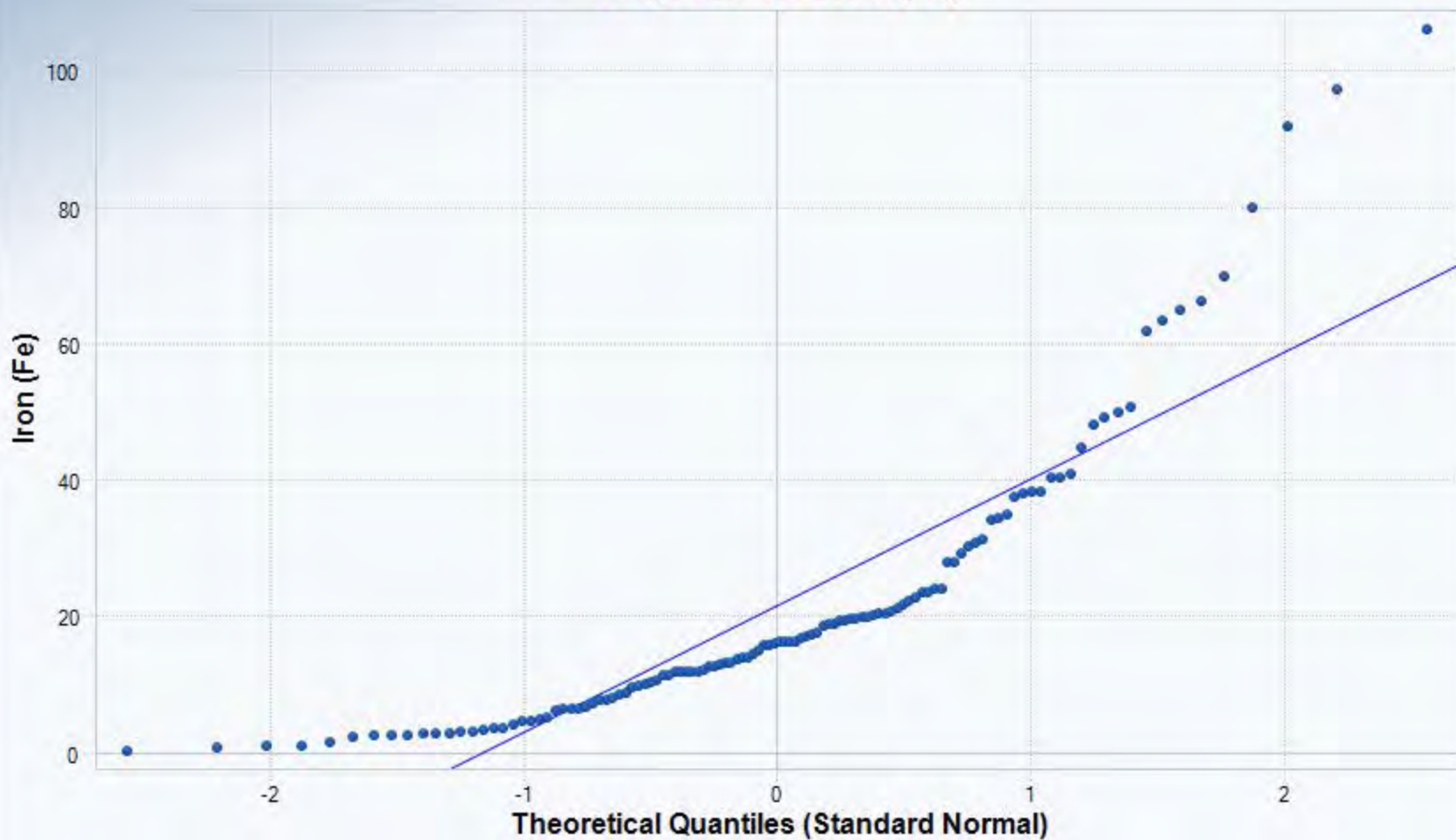


## Q-Q Plot for Iron (Fe)

### Iron (Fe)

N = 118  
Mean = 21.49  
Sd = 20.66  
Slope = 18.65  
Intercept = 21.49  
Correlation, R = 0.894

■ Best Fit Line



## Q-Q Plot for Lead (Pb)

### Lead (Pb)

N = 117

Mean = 0.088

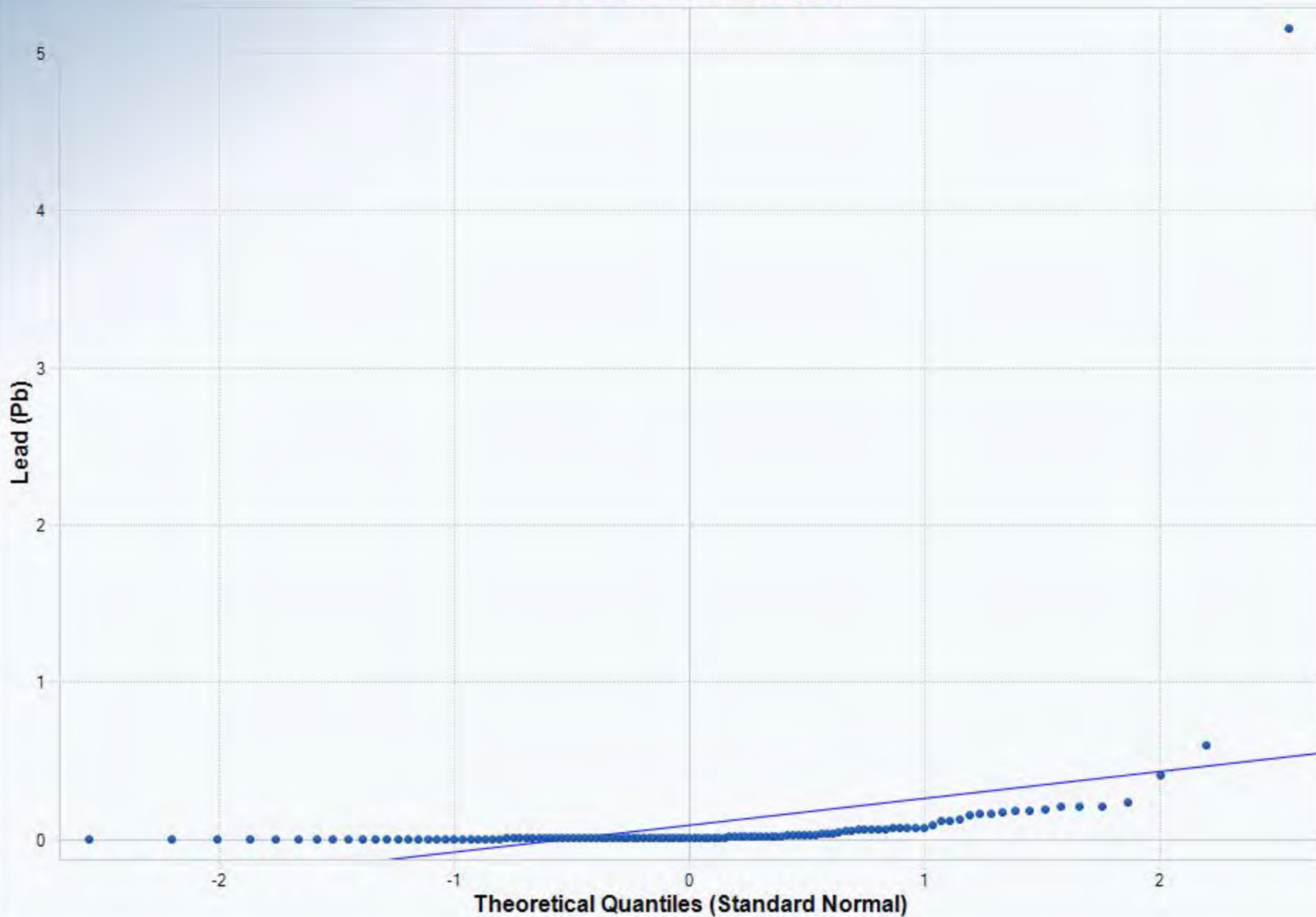
Sd = 0.479

Slope = 0.172

Intercept = 0.088

Correlation, R = 0.356

Best Fit Line





## Q-Q Plot for Manganese (Mn)

### Manganese (Mn)

N = 113

Mean = 0.364

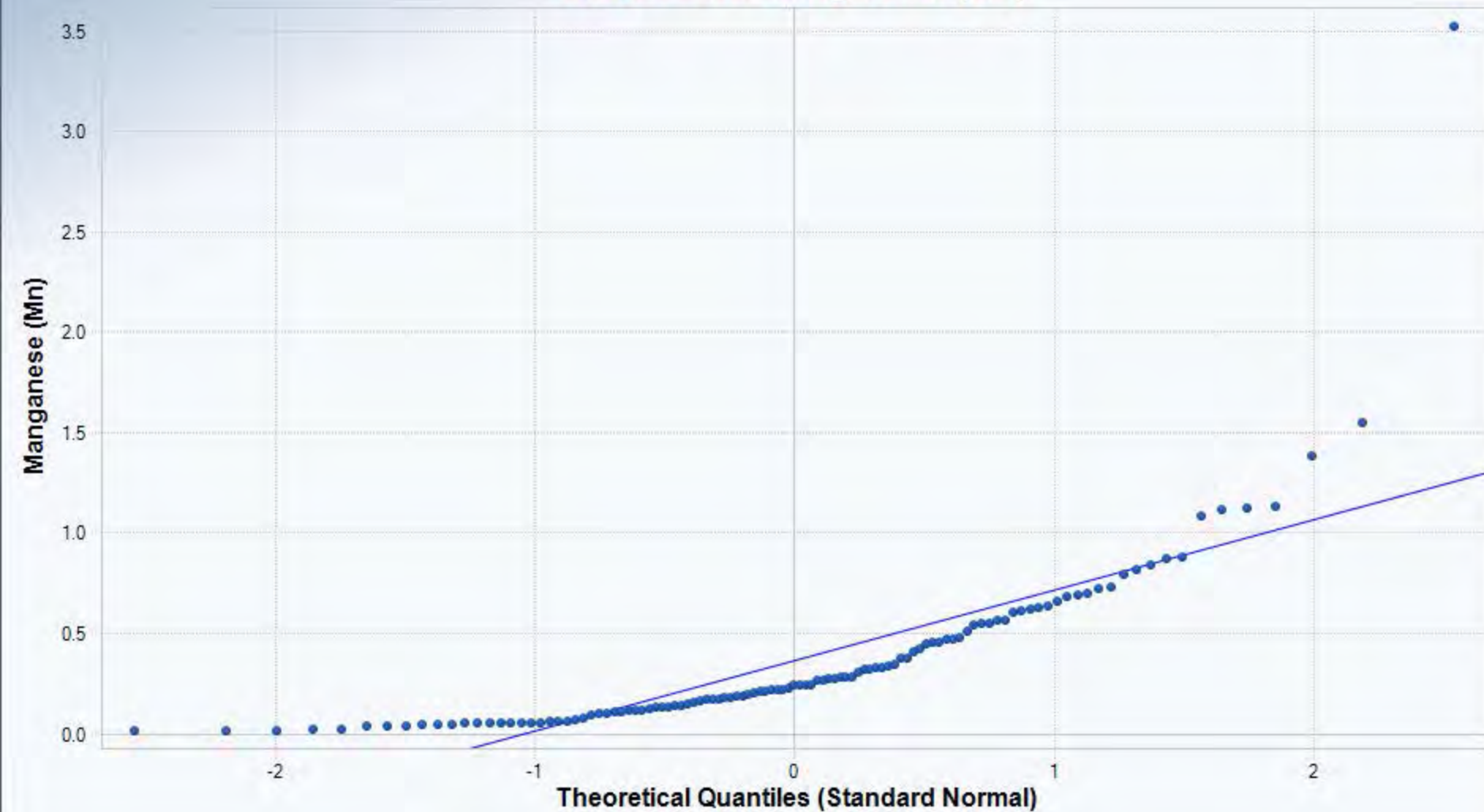
Sd = 0.433

Slope = 0.353

Intercept = 0.364

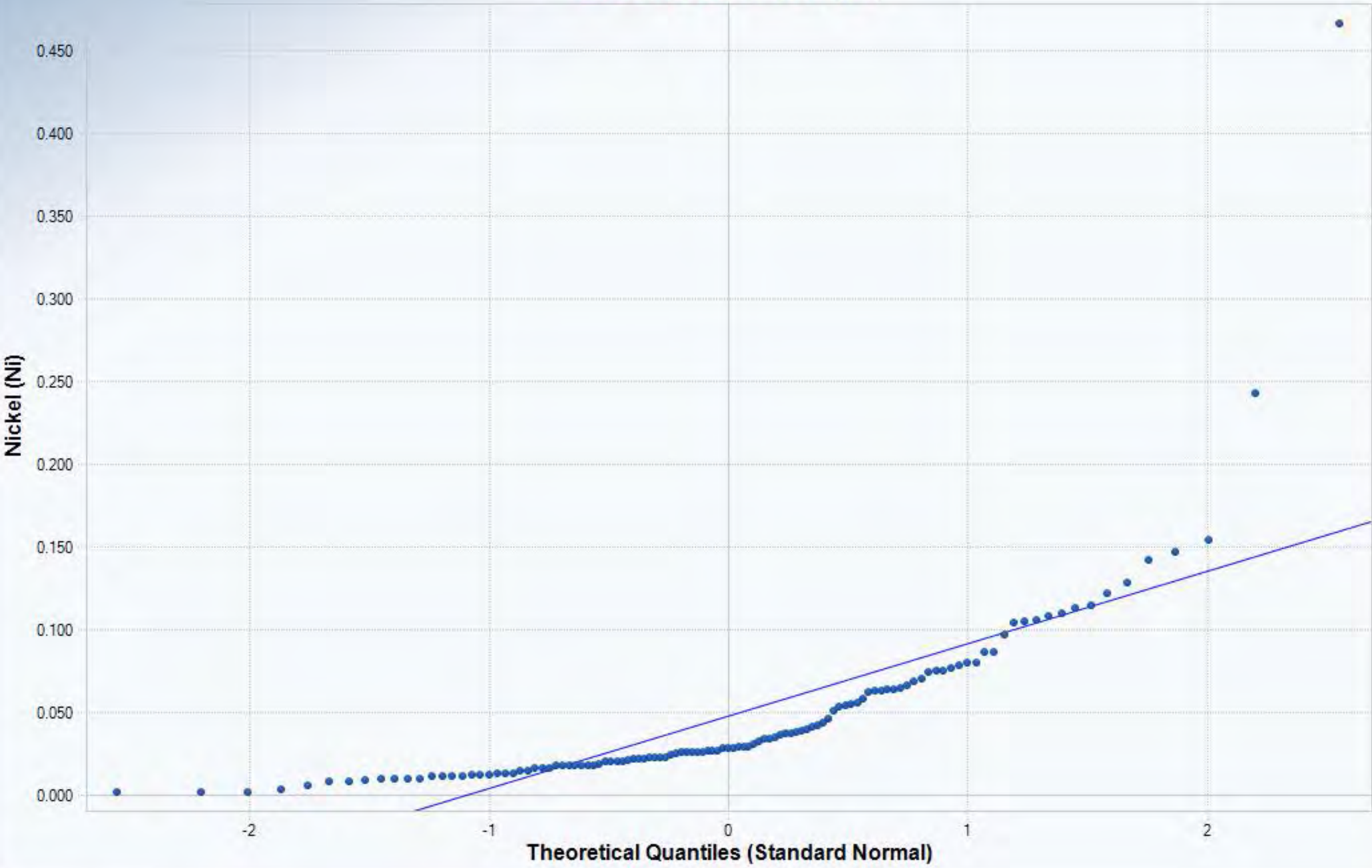
Correlation, R = 0.807

■ Best Fit Line





# Q-Q Plot for Nickel (Ni)



**Nickel (Ni)**  
N = 117  
Mean = 0.0475  
Sd = 0.0556  
Slope = 0.0438  
Intercept = 0.0475  
Correlation, R = 0.782

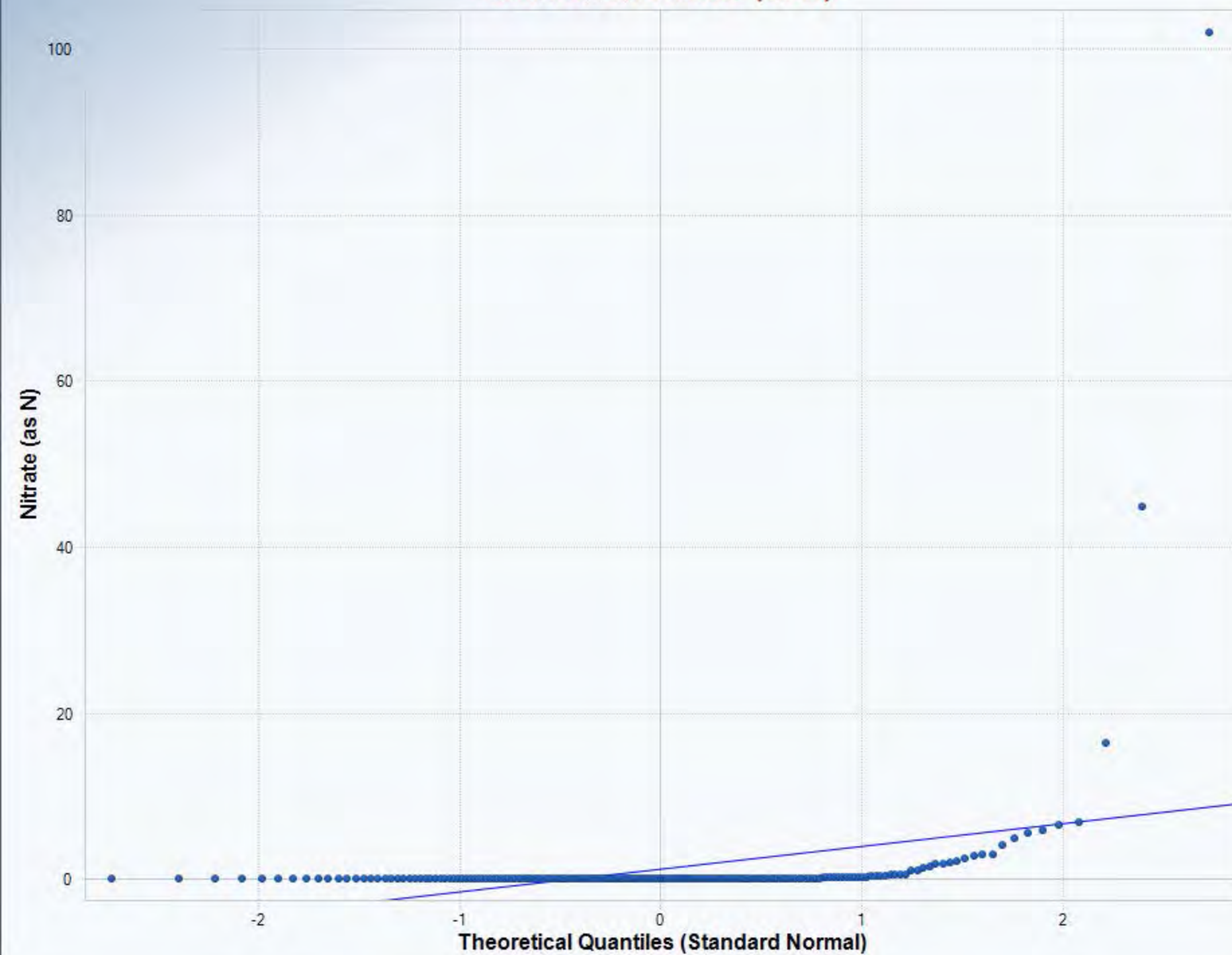
■ Best Fit Line

# Q-Q Plot for Nitrate (as N)

## Nitrate (as N)

N = 194  
Mean = 1.19  
Sd = 8.098  
Slope = 2.769  
Intercept = 1.19  
Correlation, R = 0.34

Best Fit Line



## Q-Q Plot for Sum of PFHxS and PFOS

### Sum of PFHxS and PFOS

N = 34

Mean = 0.243

Sd = 0.841

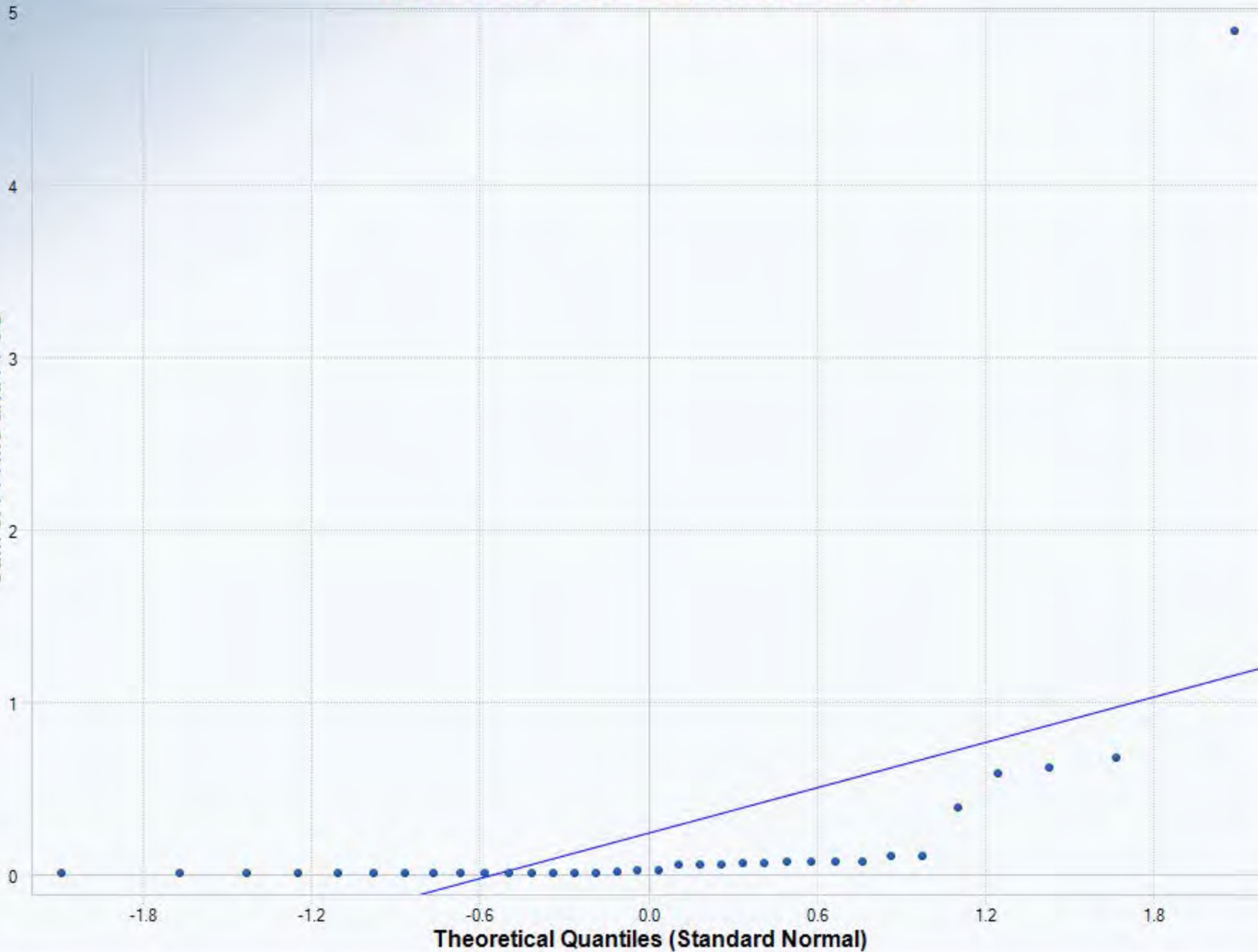
Slope = 0.439

Intercept = 0.243

Correlation, R = 0.509

Best Fit Line

Sum of PFHxS and PFOS



### Q-Q Plot for Sulfate (as SO4)

#### Sulfate (as SO4)

N = 194

Mean = 349.2

Sd = 428.9

Slope = 372.4

Intercept = 349.2

Correlation, R = 0.863

■ Best Fit Line





## Q-Q Plot for Total Dissolved Solids (TDS)

### Total Dissolved Solids (TDS)

N = 194

Mean = 2803

Sd = 4700

Slope = 3331

Intercept = 2803

Correlation, R = 0.704

Best Fit Line

Total Dissolved Solids (TDS)

30000

25000

20000

15000

10000

5000

0

-2

-1

0

1

2

Theoretical Quantiles (Standard Normal)



## Q-Q Plot for Total Chromium (Total Cr)

### Total Chromium (Total Cr)

N = 117

Mean = 0.0318

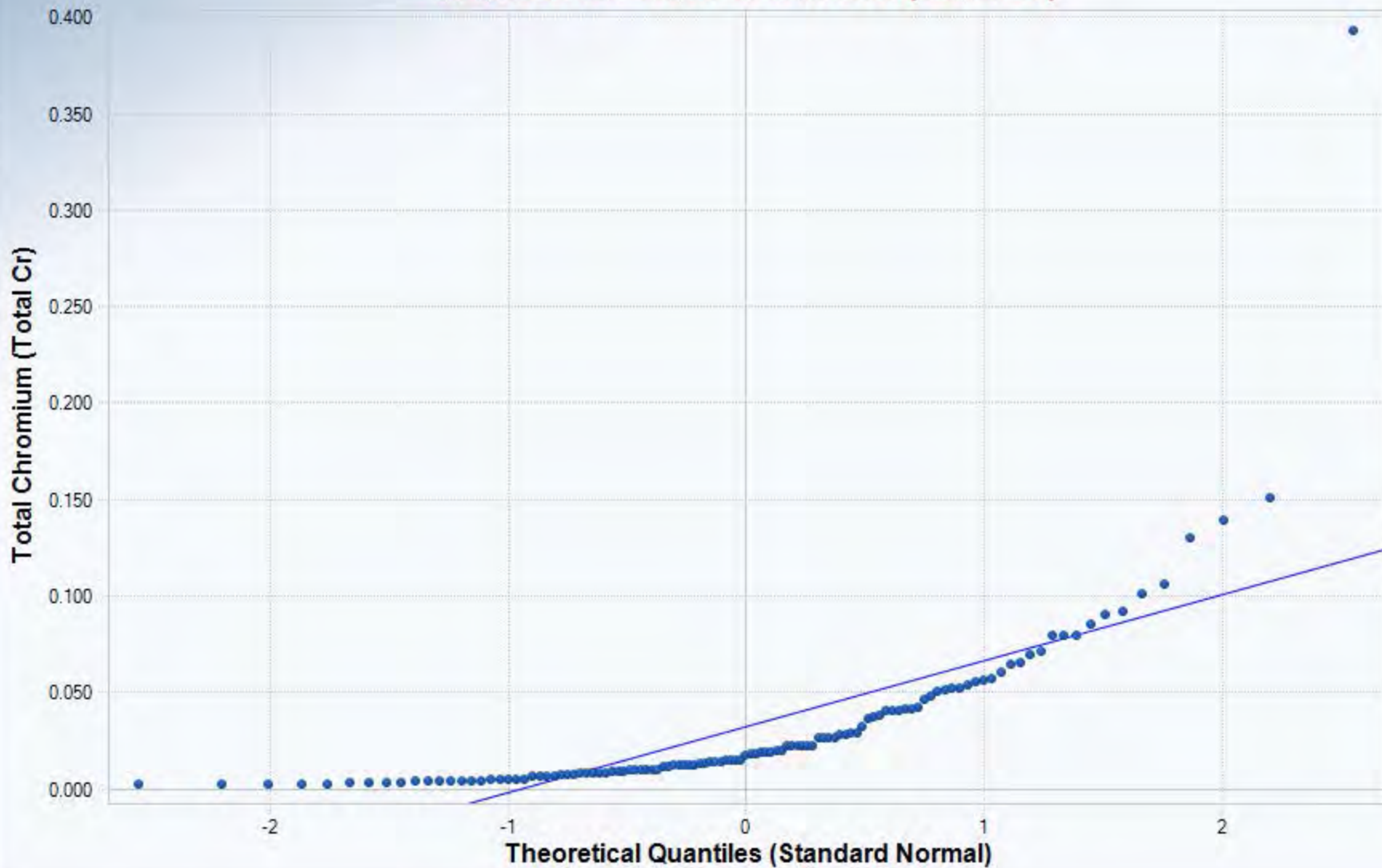
Sd = 0.0454

Slope = 0.0343

Intercept = 0.0318

Correlation, R = 0.748

Best Fit Line



## Q-Q Plot for Total Sodium (Total Na)

### Total Sodium (Total Na)

N = 41

Mean = 500.8

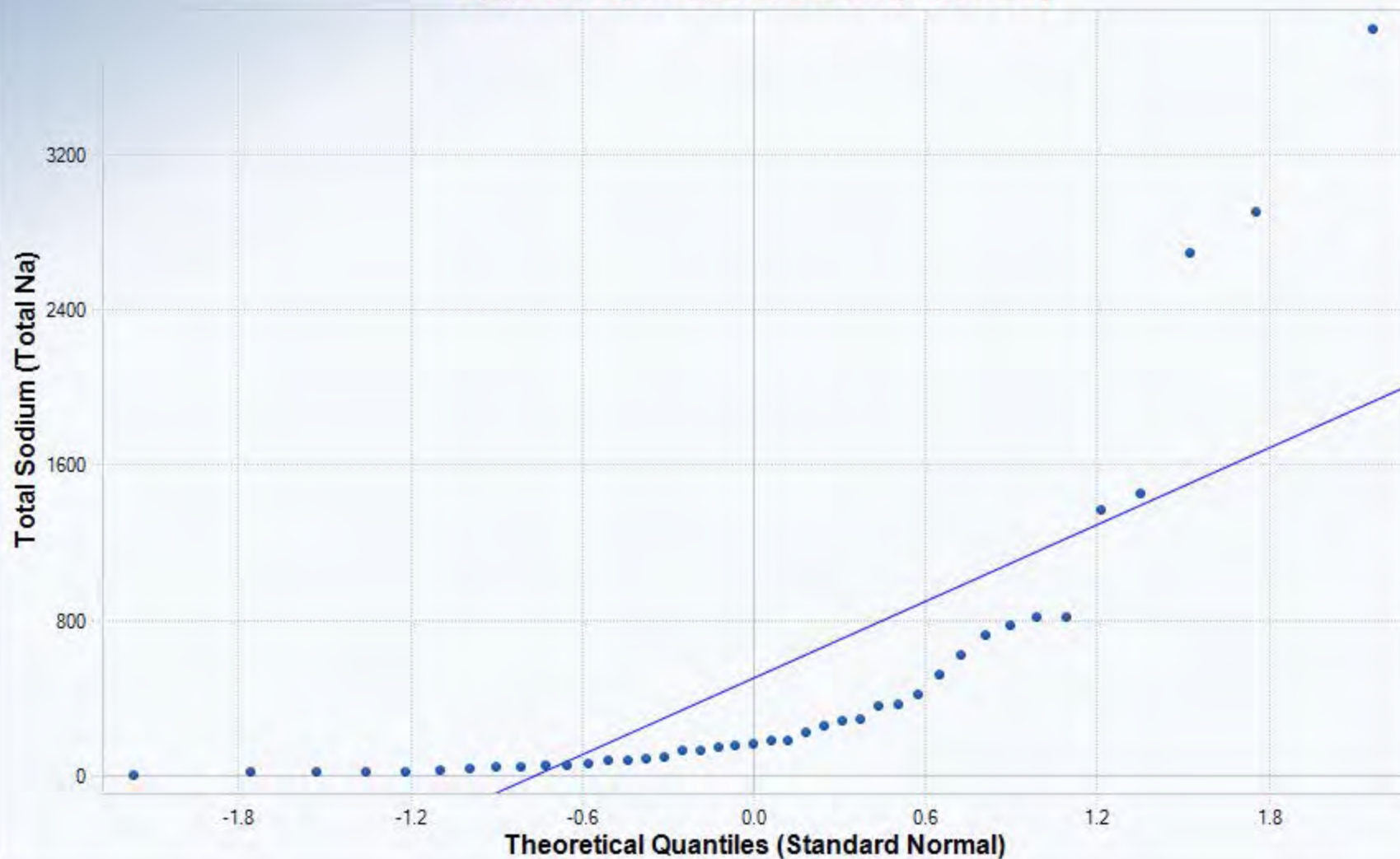
Sd = 838.6

Slope = 659.3

Intercept = 500.8

Correlation, R = 0.769

■ Best Fit Line



# Q-Q Plot for Total Recoverable Hydrocarbons (TRH) C10-C40

## Total Recoverable Hydrocarbons (TRH) C10-C40

N = 193

Mean = 992.1

Sd = 10574

Slope = 2342

Intercept = 992.1

Correlation, R = 0.22

■ Best Fit Line

Total Recoverable Hydrocarbons (TRH) C10-C40

140000  
120000  
100000  
80000  
60000  
40000  
20000  
0

Theoretical Quantiles (Standard Normal)

-2

-1

0

1

2

