









TOTAL E&P PNG LIMITED

PAPUA LNG

Upstream Environmental Impact Statement

Volume 2: Environmental and Social Baseline

Part 11
Marine Water and Sediment Quality Baseline Report

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"Where will our knowledge take you?"



Papua LNG Project

Marine Water and Sediment Quality Baseline Report

August 2017

Prepared for Total Exploration and Production PNG Limited

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Papua LNG Project - Marine Water and Sediment Quality Baseline Report

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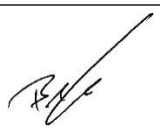
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Synopsis: **ESBS Technical Report prepared by BMT WBM for Papua LNG EIS/ESHIA for the following components: Marine Water and Sediment Quality**

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Report Number	Description
5	***Papua LNG ESBS – Marine Water & Sediment Quality***

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Executive Summary

Background

Total E&P PNG Limited (TEP PNG), a wholly owned subsidiary of TOTAL S.A. (TOTAL), is the largest partner in a joint venture to develop the Elk-Antelope gas field, located in Petroleum Retention License 15 (PRL-15) in Gulf Province, Papua New Guinea. This Project, known as the Papua LNG Project, will comprise upstream production well development and associated infrastructure at the gas field within PRL-15, construction of an upstream central processing facility (CPF) and delivery of gas and condensate via onshore and offshore export pipelines to a liquefied natural gas (LNG) plant site at Caution Bay, Central Province, 20 km northwest of Port Moresby.

This technical report provides the findings of a baseline study in relation to marine water and sediment quality in the study area. This technical report forms part of the Environmental and Social Baseline Study (ESBS) for the Project Environmental Impact Statement/Environmental, Social and Health Impact Assessment (EIS/ESHIA). The study area encompasses three sub-areas, namely (1) relevant parts of Orokolo Bay and offshore of the Purari River delta (collectively known as Orokolo Bay), (2) the nominal offshore export pipeline corridor through the Gulf of Papua (offshore export pipeline corridor), and (3) relevant parts of Caution Bay (Caution Bay).

The key objectives of the ESBS for marine water and sediment quality are to:

- Identify the national, international and corporate regulatory and policy framework for assessment of impacts to marine water and sediment quality, including the technical elements required to conduct an EIS/ESHIA.
- On the basis of a review of previous studies and data collection, describe baseline marine water and sediment quality conditions with reference to relevant guideline levels.

This report provides baseline marine water and sediment quality information which adheres to Papua New Guinea national standards, international environmental guidelines, including the International Finance Corporation (IFC) Performance Standards, and TOTAL company environmental performance specifications.

Study Approach

Existing information was reviewed to characterize the marine water and sediment quality of the study area and to identify key information gaps requiring further assessment. This review found that:

- Seasonal water and sediment quality data is available for Caution Bay. This was collected as part of the PNG LNG Project EIS prior to construction and operation, and may not be representative of *current* baseline conditions. In addition, previous water quality studies sampled surface waters only, which does not provide a basis for assessing changes in water quality due to stratification.
- No water quality data are available for either Orokolo Bay or the offshore export pipeline corridor.
- Qualitative sediment quality data is available for the offshore export pipeline corridor but no physico-chemical data has been collected. In addition, no sediment quality data is known to be available for Orokolo Bay.

In order to supplement information gaps, two targeted field surveys were undertaken during nominal dry (20 June to 9 July 2016) and wet (12 to 31 January 2017) seasons.[1] The surveys involved:

[1] The nominal ‘dry’ season is also referred to as the southeast trade winds season while the ‘wet’ seasons is referred to as the northwest monsoon season.

(1) Sampling of in situ water quality parameters, including vertical profiling through the water column.

(2) Collection of water quality samples at surface, mid-column and bottom for further testing of analytical parameters.

(3) Collection of sediment quality samples for further testing of analytical parameters, although this was not undertaken at Caution Bay due to the risk of unexploded ordnances (UXOs).

(4) Deployment of water quality instruments at Orokolo Bay in order to collect continuous turbidity (NTU), conductivity, temperature and depth data.

Field surveys were not intended to provide a complete coverage of the entire study area but provide a representation of the marine water and sediment quality environment for the study area sufficient for the purposes of the EIS/ESHIA.

Study Findings

The key findings of the baseline characterization are as follows:

- Water quality at Orokolo Bay is strongly influenced by freshwater discharges from the Purari River. The influence of these freshwater discharges is illustrated in the water quality profiling data which indicated lower electrical conductivity (EC) (~35,000 µS/cm) in surface waters (top 10 m) at monitoring sites at Orokolo Bay, compared to bottom waters in Orokolo Bay and other sites along the offshore export pipeline corridor and in Caution Bay (~55,000 µS/cm). The presence of this freshwater lens in the surface water layer (i.e. stratification) was more pronounced during the dry season survey relative to the wet season survey.
- The influence of Purari River discharges was greatest at the mouth, where EC in surface layers was ~2,000 µS/cm while EC in bottom waters was ~40,000 µS/cm. This data indicates the presence of a salt wedge at the mouth of the Purari River (i.e. freshwater overlying saline water). Furthermore, large spikes in turbidity at the Purari River mouth were coincident with a large slug of turbid water from rainfall in the Purari catchment.
- The deployed instrument data indicates that turbidity in Orokolo Bay is predominantly generated from wind and wave-driven resuspension, with lower turbidity during calmer weather conditions and higher turbidity during periods of higher winds weather conditions and rougher seas.
- Turbidity (NTU) and total suspended solids (TSS) levels were mostly lower during the dry season survey compared to the wet season survey at all sites. Turbidity levels were generally higher in Orokolo Bay compared to Caution Bay and along the offshore export pipeline corridor. This pattern was also indicated in the TSS data, with higher TSS levels at Orokolo Bay (up to 17 mg/L) compared to Caution Bay (up to 7 mg/L) and offshore export pipeline corridor sites (up to 14 mg/L).
- The tidal range in Orokolo Bay is approximately 1 m during neap tides and approximately 2 m during spring tides.
- Water temperature was fairly consistent at all sites, with temperatures between 26°C and 30°C. Slightly warmer temperatures (1 to 2°C higher) were recorded during the wet season survey, and slightly warmer temperature was recorded in surface waters at most sites.
- Water quality along the offshore export pipeline corridor is characterized by low turbidity (<10 NTU) and TSS (<15 mg/L), pH around 8.0, and low concentrations of metals/metalloids. Higher turbidity and TSS were generally found in bottom waters along the offshore export pipeline corridor. Water quality during both

the dry season and wet season surveys was relatively consistent throughout the water column, with dissolved oxygen levels greater than 80% saturation even at water depths greater than 50 m.

- Electrical conductivity and salinity at sites along the offshore export pipeline corridor were consistent through the water column during the dry season survey, but lower in surface waters during the wet season survey. This indicates that wet season freshwater flows (or rainfall in the Gulf of Papua) may have diluted the surface water layers (top 10 to 20 m) in the offshore marine areas at the time of sampling. During the wet season survey, the four monitoring sites at the eastern extent of the pipeline route had slightly different water quality to other sites, with higher EC and pH values compared to other sites along the pipeline corridor.
- Caution Bay sites had lower turbidity and TSS and higher dissolved oxygen than sites in Orokolo Bay and the offshore export pipeline corridor. This is likely due to the lack of freshwater inputs into Caution Bay and the area being more sheltered from southeast trade winds. Turbidity and TSS was higher during the wet season survey at Caution Bay.
- Dissolved oxygen levels were above 90% saturation at all sites during both surveys at Caution Bay, and all sites had low concentrations nutrients, metals/metalloids and hydrocarbons, with no exceedances of water quality guideline values.
- All sites along the offshore export pipeline corridor, including within Orokolo Bay and Caution Bay, had low concentrations of nutrients, with most results below laboratory limits of reporting during both surveys. The exceptions to this were ammonia, which was detectable at most sites (but less than toxicity-based water quality guidelines), and total phosphorus which was measurable on a number of occasions. Elevated levels of nutrients can result in nuisance algal growth (depending on a number of factors) however chlorophyll-a levels, which are indicative of phytoplankton growth, were low with most results being below the laboratory limit of reporting (<1 µg/L).
- Concentrations of metals/metalloids in the study area were mostly below limits of reporting or only present in low concentrations during the dry season and wet season surveys. The only exceedances of water quality guideline values were copper at one site at Orokolo Bay during the dry season survey and dissolved mercury at one site at Orokolo Bay during the wet season survey. However, the concentrations measured in these samples were just above the limit of reporting where large variations in analytical results can be expected to occur.
- Strontium was elevated; however, this is a constituent of seawater present at naturally high concentrations. Lower levels of strontium were observed in surface waters at Orokolo Bay during the dry season survey due to the presence of a freshwater lens in this area, consistent with observations from conductivity measurements.
- Total and dissolved concentrations of metals/metalloids were relatively consistent between dry and wet season surveys and between sites, with concentrations mostly similar between total and dissolved (except for aluminum and iron) and between different dissolved metals/metalloids (except for strontium). Strontium is a natural constituent of seawater and therefore typically found in high concentrations in the marine environment. Generally, concentrations of metals/metalloids were relatively similar in samples collected in surface, middle and bottom layers of the water column.
- Total metal/metalloid concentrations were generally similar to dissolved concentrations except for aluminum and iron which were higher, particularly in bottom waters during the dry season and the site nearest the mouth of the Purari River. This can be attributed to the higher levels of suspended sediment in these samples, which are naturally elevated in aluminum and iron.

- Concentrations of all hydrocarbon contaminants (polycyclic aromatic hydrocarbons, total petroleum hydrocarbons, benzene, toluene, ethylbenzene and xylene) along the offshore export pipeline corridor, including within Orokolo Bay and Caution Bay, were below the laboratory limits of reporting, and relevant water quality guideline values, at all sites during both seasons.
- Sediment quality data indicates that bed sediment composition at sites in the study area was predominantly silts and clays, with most sites having a proportion of silts and clays greater than 90%. The remaining proportion comprised sands (~5 to 10%). The exceptions to this were sites M7 and M45 in Orokolo Bay and Site M37 along the offshore export pipeline corridor near Yule Island, which had a much higher proportion of sands (55 to 66%). Site M45 at the Purari River mouth had the highest proportion of sand at 90%.
- Concentrations of metals/metalloids in sediment were relatively consistent between monitoring sites, with all concentrations below sediment quality guideline values. The exception to this is nickel, which exceeded the guideline value at all sites, and is attributed to naturally elevated background levels associated with geological origin.
- Results for sites M7 and M45 at Orokolo Bay and Site M37 along the offshore export pipeline corridor near Yule Island are slightly different to other sites in that they had lower concentrations of some metals (e.g. aluminum, copper, iron and nickel) and nutrients, reflecting the lower proportion of fine-grained sediments at these sites. This reflects the tendency of metals/metalloids and nutrients to bind more readily to finer sediment fractions than sands and gravels that are often dominated by silicates.
- Hydrocarbon concentrations in sediments at all sites were less than laboratory reporting limits.
- Overall, the study area supports a high level of water and sediment quality with no evidence of anthropogenic contamination, although with some naturally elevated concentrations of nickel in sediment. Turbidity and physicochemical properties of water is variable across seasons and the water column due to changes in sea state conditions and fluvial inflows, and also varies based on proximity to river mouths, such as the Purari, Vailala and Vaihua rivers.

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1 Introduction

1.1 Project Overview

Joint venture partners, Total E&P PNG Limited (TEP PNG) (40.13%), ExxonMobil (37.03% - through SPI (208) Limited (35.48%) and SPI Security Holdings Limited (4.55%)), and Oil Search Limited (22.84% - through PAC LNG Assets Limited (6.75%), Pac LNG International Limited (5.10%), Pac Overseas Limited (5%), Pac LNG Holdings Limited (3.49%) and Pac LNG Investments Limited (2.50%)) are planning the development of the Elk-Antelope gas fields located in Gulf Province, Papua New Guinea. The gas fields are located within Petroleum Retention License 15 (PRL-15). The Project will include infrastructure development inside PRL-15, and the construction of gas and condensate pipelines (export pipeline) to a liquefied natural gas (LNG) plant site at Caution Bay, 20 km northwest of Port Moresby.

The Project area comprises the physical footprint of the various Project components and associated infrastructure as detailed below (Figure 1-1).

- Production, processing and related facilities (within PRL-15):
  - Wellpads and the associated gathering system (including flowlines and trunkline).
  - Central processing facility (CPF).
  - Logistics base and river offloading facilities, accommodation camps, airstrip, roads and bridges.
  - Quarries and communications infrastructure.
  - Initial section of the onshore export pipeline.
- Onshore pipeline (outside PRL-15):
  - Remainder of the onshore export pipeline to landfall on the Gulf of Papua coast including valve stations.
  - Temporary laydown areas and camps.
  - Quarries, communications infrastructure.
- Transport (river) corridors:
  - River transport routes— the Purari, Urika-Ivo and Wame-Varoi rivers.
- Offshore pipeline:
  - Offshore section of the export pipeline to a LNG Plant site at Caution Bay.

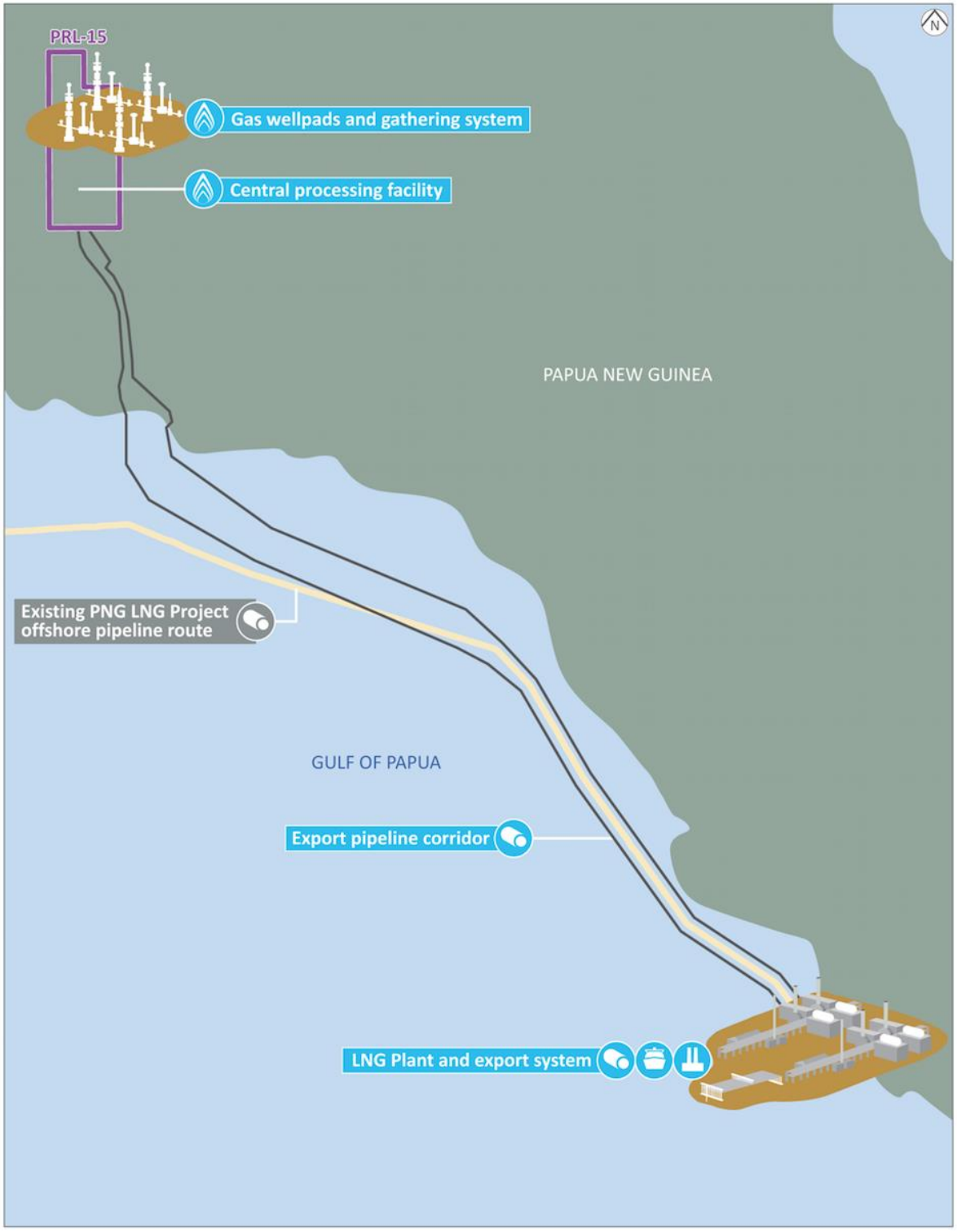


Figure 1-1 Schematic of the Project

1.2 Study and Objectives

This technical report describes the baseline marine water and sediment quality of areas potentially affected by the Project. This report is part of the marine water and sediment quality study for the Environmental Impact Statement, and the Environmental, Social and Health Impact Assessment (EIS/ESHIA) for the Project. This report is part of the Environmental and Social Baseline Study (ESBS) component of the EIS/ESHIA.

The study objectives of the marine water and sediment quality study are to:

- Characterize existing marine water and sediment quality of the study area.
- Inform development of hydrodynamic and water quality models.
- Support marine biodiversity and marine resource use (ecosystem services) assessments.
- Plan and execute baseline studies to collect sufficient data to underpin assessment of potential project impacts:
    - to satisfy International Finance Corporation (IFC, 2012) environment and social performance standards.
    - to meet Papua New Guinea requirements under the *Environment Act 2000*.
    - to meet TOTAL General Specifications, including GS EP ENV 112: Environmental Baseline and Monitoring Studies: Offshore and Nearshore Sites.

Within the context of these study objectives, this technical report achieves the following:

- Identifies the national, international and corporate regulatory and policy framework for assessment of impacts to marine water and sediment quality, including the technical elements required to conduct an EIS/ESHIA.
- On the basis of a review of previous studies and data collected through field surveys, describes baseline marine water and sediment quality conditions with reference to relevant guidelines.

2 Regulatory Framework and Standards

The Project is regulated primarily under the *Environment Act 2000* and the *Oil and Gas Act 1998* together with aspects of the suite of recently introduced Marine Pollution Acts. In addition, TEP PNG will be guided by company environmental performance specifications and international guidelines for the purposes of the EIS/ESHIA. Therefore, there are three sets of performance standards applicable to the EIS/ESHIA:

- Papua New Guinea legislation, including Conservation and Environmental Protection Authority (CEPA) operational procedures and codes of practice under the *Environment Act 2000*.
- International environmental and social guidelines, including the IFC Performance Standards on Environmental and Social Sustainability.
- TOTAL standards and commitments.

2.1 Papua New Guinean Authorities and Legislation

The following Papua New Guinean legislation is considered relevant for the purposes of the Project EIS/ESHIA:

- *Environment Act 2000*, including regulations and operational procedures/information guidelines.
- *Oil and Gas Act 1998*.
- Marine Pollution Acts, including:
  - *Marine Pollution (Preparedness and Response) Act 2013*.
  - *Marine Pollution (Sea Dumping) Act 2013* and Marine Pollution (Sea Dumping) Regulation 2013.
  - *Marine Pollution: Ships and Installations Act 2013*.

These instruments identify critical aspects of the EIS process, and criteria for the purposes of baseline comparison and impact assessment. These areas are discussed in more detail below.

2.1.1 Permit and Environmental Impact Assessment Requirements

An EIS in Papua New Guinea is required under the *Environment Act 2000* in order to assess and understand the potential environmental impacts of significant activities prior to the issue of an Environment Permit. In particular, an EIS is required for Level 3 Activities identified under the Environment (Prescribed Activities) Regulation 2002. The Project is a Level 3 Activity in accordance with Sub-Category 18 of the Regulation. The *Environment Act 2000* and EIS process is administered by CEPA.

Under the *Oil and Gas Act 1998* the issue of licenses for petroleum projects, including Petroleum Development Licenses (PDLs), Pipeline Licenses (PLs) and Petroleum Processing Facility Licenses (PPFLs) require consideration of environmental aspects and management actions. A PDL can only be issued where the Minister administering the Act is satisfied that the project provides for the protection of the environment and welfare of people in the project area. In practice, the Minister relies on the EIS developed under the *Environment Act 2000* in making this assessment. The Minister administering the Act is the Minister of the Department of Petroleum and Energy.

The *Marine Pollution (Sea Dumping) Act 2013* requires a Sea Dumping Permit for the purposes of placement of certain waste material within marine waters. This includes dredged material but only where material meets the contaminant guidelines set under the Marine Pollution (Sea Dumping) Regulation 2013; non-compliant material cannot be placed at sea. An application for a Sea Dumping Permit is considered separately to the application for an Environment Permit, though the assessment of dredged material contamination levels can be undertaken as part of an EIS. This process is administered by the National Maritime Safety Authority (NMSA).

The discharge of pollutants from installations and ships in the marine environment is prohibited under the *Marine Pollution (Ships and Installations) Act 2013* unless approved under an Environment Permit under the *Environment Act 2000*, assessed by CEPA.

In preparing an EIS and applying for an Environment Permit, a proponent is required to follow the process set out in operational procedures and guidelines prepared by CEPA. These include the following:

- Operational Procedure (2013): *Information Requirements for Permit Application & Registration of Intention to Carry Out Preparatory Works*.
- Information Guideline GL-ENV/02/2004: *Guideline for Conduct of Environmental Impact Assessment & Preparation of Environmental Impact Statement*.
- Information Guideline GL-ENV/03/2004: *Guideline for Submission of an Application for an Environment Permit to Discharge Waste.*
- Technical Guideline IB-ENV/04/2004: *Water & Land Discharges*.

In addition to the requirements of these guidelines, the *Marine Pollution (Prevention and Response) Act 2013* requires proponents for new petroleum-related facilities to undertake a marine pollution risk assessment as part of an EIS. This allows for marine pollution risks to be assessed as part of an Environment Permit application. A detailed marine pollution contingency plan must then be developed after the approval of the installation.

2.1.2 Environmental Assessment Criteria

Papua New Guinea legislation establishes environmental assessment criteria for water under Schedule 1 of the Environment (Water Quality Criteria) Regulation 2002. These criteria (provided in Section 5.5) are for ambient water quality required for the purposes of preserving aquatic life.

For the purposes of EIS/ESHIA, these criteria are the ‘benchmark’ intended to be achieved for the ambient environment beyond prescribed mixing zones. It is noted, however, that criteria have not been set for all water quality parameters measured as part of the baseline characterization.

The Marine Pollution (Sea Dumping) Regulation 2013 provides contaminant guidelines for dredged material proposed to be placed at sea. These criteria represent the ‘screening’ thresholds for dredged material, with any material that shows contaminant levels in excess of these thresholds requiring further assessment.

Outside of these contaminant screening criteria, there are no applicable Papua New Guinea environmental assessment criteria for sediment quality.

2.2 International Standards and Guidelines

TEP PNG has committed to preparing an EIS/ESHIA for the Project consistent with a number of international standards and guidelines. These are:

- Equator Principles and World Bank Safeguards.
- IFC Performance Standards.
- Organization for Economic Cooperation and Development (OECD) Common Approaches.
- International Petroleum Industry Environmental Conservation Association (IPIECA) Guidelines.
- Any international convention ratified by the Government of Papua New Guinea (that has not been given effect under legislation listed above).

In addition to these instruments, the following international guidelines have been used previously for benchmarking and/or assessment in Papua New Guinean EIS/ESHIA:

- Australian and New Zealand Fresh and Marine Water Quality Guidelines (ANZECC/ARMCANZ, 2000), which also include interim sediment quality guidelines.
- Simpson *et al*. (2013) revision to ANZECC/ARMCANZ (2000) interim guidelines for sediment quality.

These instruments provide ‘good practice’ guidance for environmental impact assessment and/or important assessment and benchmarking criteria for marine water and sediment quality.

2.2.1 Environmental Impact Assessment Requirements

Preparation of an ESHIA for the purposes of environmental due diligence is required under the World Bank Safeguards, Equator Principles and OECD Common Approaches. The IFC Performance Standards provide specific guidance on the ESHIA process.

IFC Performance Standard (PS) 1 establishes the framework for preparing an ESHIA in order to assess and manage the impacts from a particular activity. The remaining Performance Standards (PS2 to PS8) provide more detail on the assessment and management of impacts in particular areas, including pollution/discharges to the environment (PS3) and biodiversity conservation (PS6). The IFC Performance Standards are supplemented by Environmental, Health and Safety (EHS) guidelines which provide examples of good international industry practice (GIIP) for certain activities.

In accordance with the IFC Performance Standards an ESHIA is required to consider the risk of an activity to the environment within the activity’s ‘area of influence’. This includes consideration of the impacting processes in the relevant industry-specific EHS Guidelines.

Under PS 3, the ESHIA is required to describe the ambient environment conditions in the area of influence, including the assimilative capacity. This then forms the basis of assessing potential pollution impacts and for the setting of impact criteria. Performance Standard 6 requires the ESHIA to include a distinction between ‘modified’, ‘natural’ and ‘critical’ habitat in order to appropriately quantify and manage impacts to biodiversity and ecosystems services.

The IPIECA has prepared a number of guidelines for the petroleum industry to advise proponents on best practice related to ESHIA processes. These guidelines include a focus on biodiversity and ecosystem services, oil spill preparedness, and water. The key features of the most relevant of these guidelines include: locating and assessing sensitive areas (including protected areas, sensitive

habitats and rare, threatened or endangered species) as part of project planning; assessing baseline ecological conditions to inform the occurrence of and vulnerability to alien invasive species; and assessing the potential impacts of abstraction of and discharge to naturally-occurring water sources, including cumulative impacts and the effects of climate change.

2.2.2 Environmental Assessment Criteria

There are two types of relevant criteria provided by international guidelines: 1) ambient environment criteria (i.e. the parameters to be met for the receiving environment), and 2) discharge/emission criteria (i.e. criteria to be met in discharge streams).

International ambient environment criteria adopted for the project (provided in Section 5.5) come from the following guidelines:

- ANZECC/ARMCANZ (2000) – fresh and marine water quality (supplements the criteria from the Papua New Guinea Environment (Water Quality Criteria) Regulation 2002).
- Simpson *et al*. (2013) – freshwater and marine sediment quality.

Discharge criteria are derived from the following guidelines:

- EHS Guideline for Onshore Oil and Gas Development – effluent levels for drilling fluids and cuttings, produced sand, produced water, hydrotest water, completion and well work-over fluids, stormwater drainage and cooling water.
- EHS Guideline for LNG Facilities – effluent levels for hydrotest water, hazardous stormwater drainage, cooling water and sewage.
- EHS Guidelines for Crude Oil Petroleum Product Terminals – discharge limits for stormwater runoff and process effluent.

For the purposes of the ESBS Report, only ambient environment criteria are considered to be relevant. Discharge criteria will be considered as part of the Project impact assessment.

2.3 TOTAL Company Standards and Commitments

TOTAL has developed the following general specifications for the purpose of environmental impact assessment that are relevant to the Project EIS/ESHIA:

- GS EP ENV 120: Environmental Impact Assessment of E&P Activities.
- GS EP ENV 111: Environmental Baseline and Monitoring Studies: Onshore Sites.
- GS EP ENV 112: Environmental Baseline and Monitoring Studies: Offshore Sites.

GS EP ENV 120 provides details on the process for undertaking an environmental impact assessment and preparing an environmental management plan. The instrument adopts the ISO14001 approach for impact assessment and management. Some relevant specific requirements of the specification include:

- Identification of the physical, biological and socio-economic context of a project, including sensitivities of the environment.
- Assessment of impacts within an ‘area of influence’.
- Use of a modelling study (if relevant) to assess liquid effluent discharges dispersion.

The specifications also identify a methodology for impact assessment and contents of an environmental management plan (including oil spill contingency plan).

GS EP ENV 111 and GS EP ENV 112 specify the type of data to be collected for baseline purposes. These include physicochemical properties of marine sediment and water, rare and endangered species, and flora and fauna bioindicators.

3 Study Area

3.1 Study Area

The Project occurs across the northern and eastern ends of the Gulf of Papua, as shown in Figure 1-1. Studies are being undertake across much of this area as part of the EIS/ESHIA. For the purposes of this report, the 'study area' includes only the marine elements of the Project and surrounding area.

Figure 3-1 provides an overview of the study area. This includes the following three subsets:

- Coastal and nearshore environments at Orokolo Bay and offshore of the Purari River delta, located at and adjacent to the upstream segment of the offshore export pipeline corridor and offshore potential riverine transport routes along the Wame-Varoi, Urika-Ivo and Purari rivers. This area is located in the Gulf Province.
    - Orokolo Bay refers to the bay embayment between the eastern-most mouth of the Purari River delta and the mouth of the Vailala River.
    - Purari River delta represents the area between the Purari and Wame-Varoi river mouths.
- Offshore environments in the Gulf of Papua at and adjacent to the offshore segment of the export pipeline corridor (offshore export pipeline corridor). The western sediment of the offshore pipeline is located offshore from the Gulf Province whereas the eastern segment is located offshore from the Central Province.
- Marine environments at and adjacent to Caution Bay at the downstream end of the export pipeline (Caution Bay). This area is located in the Central Province region.

The waters in the study area include nearshore and offshore waters. For the purposes of this report, 'nearshore' waters are those between the mean high tide level and the 15 m water depth contour. 'Offshore' waters represent all waters seaward of the 15 m depth contour.

Figure 3-2 through Figure 3-4 show parts of Orokolo Bay, the Purari River delta and Caution Bay.



Title:

Marine Water and Sediment Quality ESBS Study Area

Figure: 3-1

Rev: A

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Approx. Scale

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Figure 3-2 Approach to Purari River Delta (June-July 2016)



Figure 3-3 Orokolo Bay (June-July 2016)



Figure 3-4 Caution Bay – View Northwest from Shore South of PNG LNG Jetty (June-July 2016)

3.2 Climate

The following provides an overview of the climatic setting of the study area. More detailed climatic and meteorological information is provided in the Upstream Hydrology and Meteorology Baseline Report (BMT WBM, 2017a; Part 2 of ESBS Dossier) and the Physical Oceanography Baseline Report (BMT WBM, 2017b; Part 10 of ESBS Dossier).

3.2.1 Orokolo Bay, Purari River Delta and Western Offshore Export Pipeline Corridor (Gulf Province)

Seasonal wind patterns in the Gulf Province are the occurrence of southeast trade winds from April to November and lighter northwest monsoon winds from December to March. In contrast to Caution Bay, rainfall at Kerema (to the east of the study area) is not as strongly seasonal, with mean monthly totals ranging from 209 to 437 mm. May to October represent the wetter months with mean rainfall above 299 mm. The mean annual rainfall is 3,612 mm and mean evaporation rate 1,420 mm (Evesson, 1983).

The coolest month is August which has mean daily maximum and minimum temperatures of 27ºC and 22ºC respectively. The warmest months are December and January with a mean daily maximum temperature of 31ºC. There is little variation in the mean daily minimum (±1ºC) and maximum (±3.5ºC) temperatures throughout the year (Evesson, 1983).

The Gulf Province coast is north of the main cyclone belt.

3.2.2 Caution Bay and Eastern Offshore Export Pipeline Corridor (Central Province)

The main seasonal climate patterns of Caution Bay, within the Central Province, consist of:

- Dry season from May to October, with prevailing southeast trade winds.
- Wet season from December to March, when the lighter northwest monsoon winds prevail. Approximately 80% of the mean annual rainfall of 1,200 mm occurs during the wet season.
- Transition periods during April and November, when winds are generally calmer.

Monsoon surges with strong northwest winds have been observed in the region. These short-lived squalls of about one hour's duration with wind speeds of 55 to 65 km/hr are known as *gubas*.

The coolest months are July and August when the mean daily maximum and minimum temperatures are 28ºC and 23ºC respectively. The warmest months are December and January when the mean daily maximum and minimum temperatures are 32ºC and 24ºC respectively. There is little variation in the mean daily minimum (±1ºC) and maximum (±4ºC) temperatures throughout the year (CNS, 2009).

Caution Bay (i.e. the location of the LNG Plant and downstream supporting infrastructure) is north of the main cyclone belt and occurrence of such events in the Gulf of Papua is rare, with only five named cyclones in 15 years entering the Gulf, all situated well south of Caution Bay. Cyclones generally occur from February to April.

3.3 Anthropogenic Setting

The following provides an overview of the anthropogenic setting of the study area, including population distribution and marine-based activities. More detailed information is provided in the Upstream Community and Demographics Baseline Report (Finlayson, 2017; Part 14 of ESBS Dossier), Marine Fisheries and Resources Baseline Report (ERIAS Group, 2017a; Part 13 of ESBS Dossier), and Marine and River Traffic and Transport Baseline Report (ERIAS Group, 2017b; Part 22 of ESBS Dossier).

3.3.1 Orokolo Bay and Purari River Delta (Gulf Province)

Population patterns across Orokolo Bay and the Purari River delta are marked by a generally low inland population scattered or concentrated in small villages along riverbanks, and a much denser population in large villages and hamlets across the coastal strip. The principal villages in the Purari River delta and Orokolo Bay area are:

- Purari River delta: Akoma, Aivei and Apiope.
- Orokolo Bay: Harevavo and Hororo.

All coastal communities engage in subsistence fishing activities in nearshore and offshore waters, with some limited commercial fishing also occurring. These activities tend to occur in the coastal zone out to three nautical miles, beyond which commercial trawling occurs as part of the Gulf of Papua Prawn Fishery (see below). Fishing activities typically use small outrigger canoes and y-nets, with canoes primarily used to set gill nets but also to fish in deeper water with hook-and-line.

Subsistence and artisanal fishing activities are strongly seasonal, with fishing from outrigger canoes more restricted during the southeast trade winds due to the generation of dangerous sea conditions.

Limited shipping traffic occurs in Orokolo Bay and offshore of the Purari River delta as it is outside of existing commercial shipping channels, with the exception of boats from local villages (ERIAS Group, 2017b).

3.3.2 Offshore Export Pipeline Corridor

The offshore export pipeline corridor includes areas within the Gulf of Papua Prawn Fishery, regulated by the National Fisheries Authority (NFA). This fishery occurs at least three nautical miles offshore, following the 30 to 60 m depth contours, extend east as far as the village of Iokea (near the border of Gulf and Central provinces). Prawn trawling activities also occur further east of this, down to Caution Bay.

An artisanal dive fishery for rock lobster occurs on the coastal reefs around Yule Island where lobster annually migrate from Torres Strait to spawn during November to April

Various shipping traffic occurs within the Gulf of Papua, including a number of coastal vessels that cross the offshore export pipeline corridor. These include cargo, tanker and passenger vessels, as well as logging ships transiting between ports at Port Moresby, Baimuru, Kumul Marine Terminal, Kikori and Daru.

3.3.3 Caution Bay (Central Province)

Along the coastal strip of Caution Bay there are four villages: Lea Lea, Papa, Boera and Porebada. Each of these villages are populated by mixed populations of people from the Koita and Motu people groups. The population density across the area is 10 persons/km^2.

In addition to these villages, the ExxonMobil LNG Plant, part of the PNG LNG Project, occupies part of the coastal strip between Papa and Boera. This facility includes an LNG jetty and wharf that extend out into Caution Bay. Brine from desalination is discharged into the bay from a pipeline attached to this jetty, while hydrotest water (produced during construction phase only) was discharged to nearshore waters north of the LNG jetty.

Artisanal fisheries in Caution Bay are considered important for subsistence and income purposes for Lea Lea, Papa, Boera and Porebada. Fishing is primarily undertaken on inshore fringing reefs and shallow shoals, but is also undertaken in mangrove communities and barrier reefs. There is a high dependence on local communities on coastal and marine resources. Subsequent to the development on the LNG plant, a 500 m exclusion zone is maintained around the LNG jetty, restricting fishing activities in this area.

Most boat traffic in Caution Bay is associated with the local villages or with operations of the LNG Plant. Commercial shipping traffic, including commercial fishing vessels, occur beyond the outer reef, outside of Caution Bay.

4 Existing Information

The following section describes the previous studies that are considered relevant to the study area. The actual content of this literature has been integrated, as relevant, into the findings described in Section 6.

4.1 Prior Studies within the Study Area

4.1.1 Published Reports

The PNG LNG Project EIS, prepared by Coffey Natural Systems (2009) for ExxonMobil, included data collection and assessments within areas of the Gulf of Papua that overlap with the study area for this report. Figure 4-1 and Figure 4-2 show the relevant marine water and sediment data collection sites from this EIS.

4.1.2 Unpublished Reports

In addition to the published reports discussed in Section 4.1.1, other studies known to have occurred in the study area, but which have not been published, consist of:

- Marine water and sediment quality assessments conducted offshore of the Purari River delta as part of a revised version of the Purari Hydropower Project.
- Marine water and sediment quality assessments in Kerema Bay.

The information from these studies has been used, where relevant, in the preparation of this baseline report.

4.2 Studies in Neighboring Regions

The PNG LNG Project EIS (CNS, 2009) and the Pasca A Development Project EIS (ERIAS Group, 2016a) cover areas extending beyond the present study area. The EIS for the PNG LNG Project includes assessments undertaken in neighboring areas, i.e., the Kikori River delta and parts of the western Gulf of Papua, while the Pasca A Development Project EIS focuses on water and sediment within deep water (i.e. >90 m) areas of the gulf. Both of these studies provide a contextual understanding of the marine water and sediment quality in the gulf.

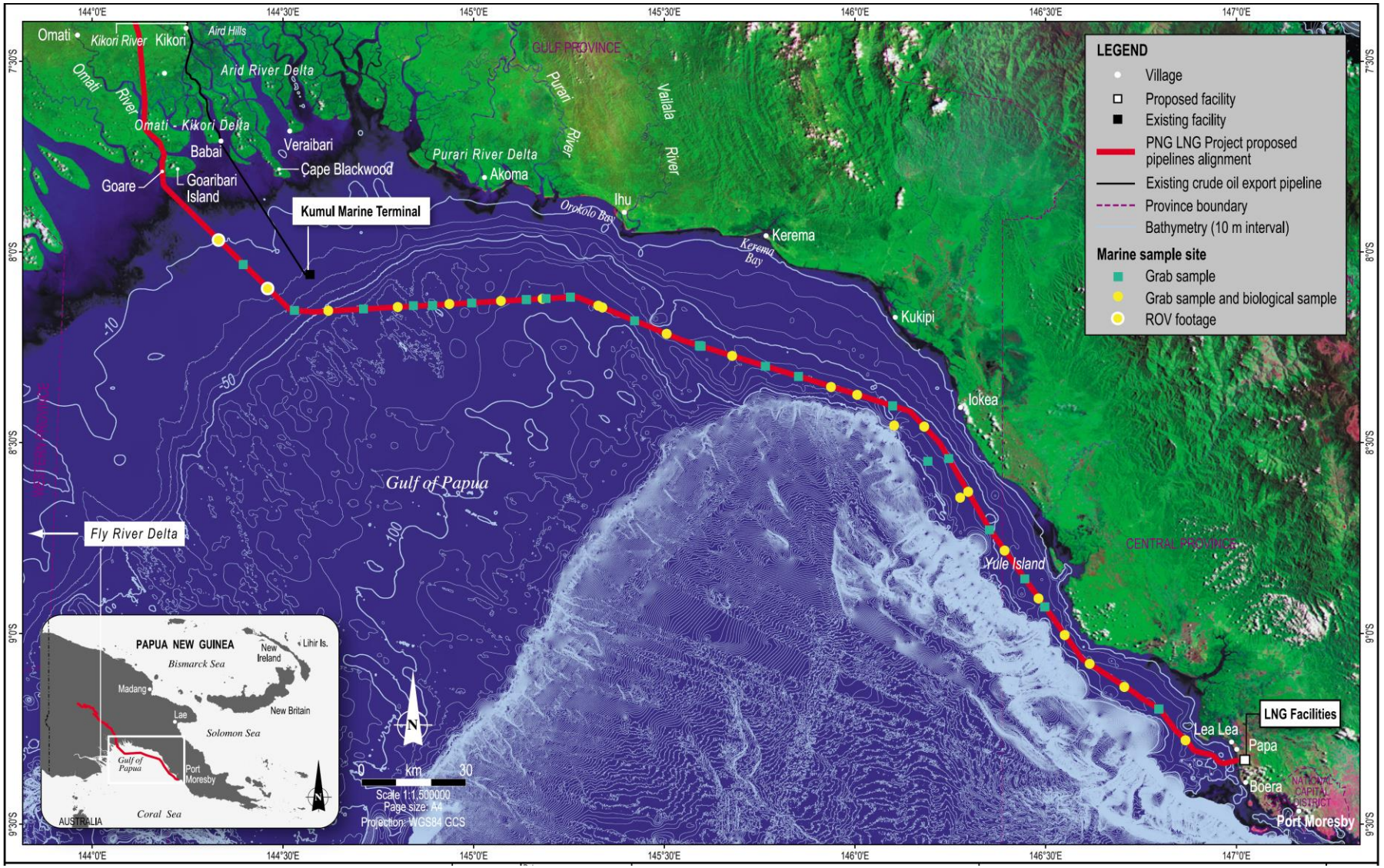


Figure 4-1 Offshore Export Pipeline Corridor Sediment Quality Survey Sites – PNG LNG Project EIS (CNS, 2008a)

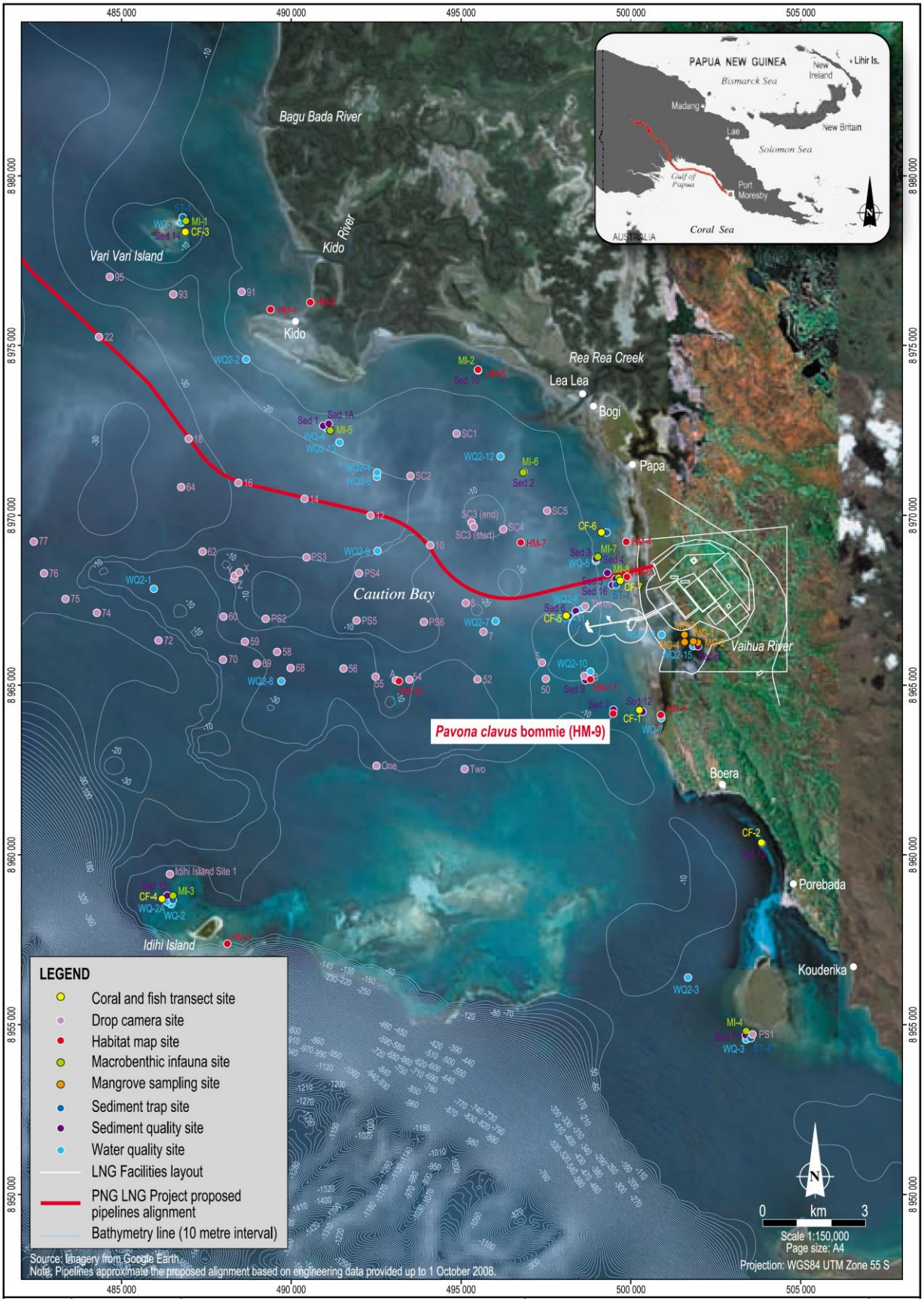


Figure 4-2 Caution Bay Water and Sediment Quality Survey Sites – PNG LNG Project EIS (CNS, 2008b)

4.3 Summary

Based on the studies cited above, the following existing information is known to be available for the study area:

- Seasonal water and sediment quality data for Caution Bay. This was collected as part of the PNG LNG Project EIS prior to construction and operation, and therefore may not be representative of *current* baseline conditions. In addition, previous water quality studies sampled surface waters only, which does not provide a basis for assessing water quality at different depths.
- Qualitative sediment quality data (samples collected for field assessment of sediment type, but no laboratory analysis undertaken) is available for the offshore export pipeline corridor but no physicochemical data has been collected.

No water quality data is available for either Orokolo Bay or the offshore export pipeline corridor.

Prior to the commencement of studies for the EIS/ESHIA it was uncertain whether sensitive receptors (e.g. coral reefs, seagrass meadows) occurred at Orokolo Bay. Where these receptors are present, seasonal water quality data provides an indication of impact thresholds beyond which negative effects may possibly occur.

Regional/adjoining information is available from Kerema Bay and the Kikori River nearshore areas. This provides some relevant information that can be used to contextualize the study area and/or can be extrapolated to assist with predictions for the study area.

5 Approach and Methods

This section provides a summary of the methods adopted for the desktop studies and field survey data collection. A complete description is provided within the scope and methods ('rationale') report for marine studies (ERIAS Group, 2016b) and relevant addendum (ERIAS Group, 2016c).

5.1 General Approach

The study approach was based on a review and analysis of existing information, together with targeted field surveys to address identified data gaps. Two field sampling events were completed between 20 June and 9 July 2016 and between 12 and 31 January 2017. Both desktop review and field surveys focused on obtaining the following information:

- Physicochemical properties, general water quality parameters, nutrients and contaminants in all marine waters within the study area – this provides a description of existing conditions for the purposes of the EIS/ESHIA and forms a basis for baseline data against which impacts can be monitored. In assessing marine water quality, particular focus was provided in regard to:
  - spatial changes of physicochemical properties associated with vertical stratification in the water column.
  - temporal changes of physicochemical properties associated with seasonality.
  - temporal changes in turbidity associated with tidal cycles.
- Physicochemical properties, organic carbon, nutrients and contaminants in marine sediment within the study area – this provides a description of existing conditions for the purposes of the EIS/ESHIA and forms a basis for baseline data against which impacts can be monitored.

The parameters that were analyzed for the study are listed in Table 5-1. This includes the limits of reporting (LORs) and analysis method employed by laboratories.

In undertaking the study, benchmarking of baseline water and sediment quality was undertaken against criteria established by Papua New Guinea legislation and international guidelines. These are described in Section 5.5.

Sampling focused on each of the three parts of study area described in Section 3.1, i.e. Orokolo Bay, offshore export pipeline corridor and Caution Bay.

5.2 Data Sources

The key data source utilized for desktop assessments was the publicly available data for the PNG LNG Project EIS. In addition, overlapping and regional studies described in Sections 4.1 and 4.2 were used as context for the study area.

Table 5-1 Marine Water and Sediment Quality Parameters

Parameter	Analysis method	Limits of reporting
Marine Water		
TSS	American Public Health Association (APHA) 2540 D (gravimetric, dried at 103-105ºC	1 mg/L
BTEX/PAH	Gas chromatography-mass spectrometry	1-5 µg/L
TPH	Gas chromatography-flame ionization detector	20-100 µg/L
Chlorophyll a	APHA 10200 H	1 mg/m^3
Ammonia as N	APHA 4500 NH_3 - H (flow injection analysis phenate method)	0.01 mg/L
Nitrite	APHA 4500-NO_2 I (flow injection analysis)	0.01 mg/L
Nitrate	APHA 4500-NO_2 I (flow injection analysis)	0.01 mg/L
Nitrite as N and Nitrate as N	APHA 4500-NO_2 I/NO_3 I (flow injection analysis)	0.01 mg/L
Total phosphorous as P	APHA 4500 P - H (manual digestion and flow injection analysis)	0.01 mg/L
Reactive phosphorous	APHA 4500 P - F (flow injection analysis)	0.01 mg/L
Total nitrogen as N	APHA 4500 N_{org}/NO_3 (flow injection analysis)	0.1 mg/L
Total metals (Al, As, Ba, Cd, Co, Cr, Cu, Fe, Ni, Pb, Sr, V, Zn)	APHA 3125B ORC/ICP/MS (octapole reaction cell/inductively coupled plasma – mass spectrometry	Cu, Ba: 1 µg/L Cd, Co, Pb: 0.2 µg/L As, Cr, Ni, V: 0.5 µg/L Al, Zn: 5 µg/L Sr: 10 µg/L
Hg	Cold vapor atomic absorption spectrometry	0.0001 mg/L
Marine Sediment		
Moisture	Gravimetric	1%
PSD	Australian Standard (AS) 1289 3.6.3 (sieving and hydrometer)	1%
Total phosphorous as P	APHA 4500 P - H (flow injection analysis)	2 mg/kg
Total nitrogen as N	APHA 4500 N_{org}/NO_3 APHA 4500 NO_2/$_3$ (flow injection analysis)	20 mg/kg
BTEX/PAH	United States Environmental Protection Agency (USEPA) 3640/827	0.2-1.0/0.5-2.0 mg/kg
TPH	USEPA 5030/8260	10-100 mg/kg
Organic matter and TOC	AS 1289.4.1.1 – 1997 / National Environment Protection Measures (NEPM) (high temperature combustion)	0.5%
Total metals (Al, As, Ba, Fe, Sr)	USEPA 2002.2 (mod) (inductively coupled plasma – atomic emission spectrometry)	Al, Fe: 50 mg/kg As: 5 mg/kg Sr: 2 mg/kg Ba: 10 mg/kg
Total metals (Cd, Co, Cr, Cu, Pb, Ni, V, Zn)	USEPA 6020	Zn: 0.5 mg/kg V: 1 mg/kg Others: 0.1 mg/kg
Total Hg	APHA 3112 Hg-B	0.1 mg/kg

5.3 Field Survey

5.3.1 Sampling Activities

Two field surveys were undertaken in order to supplement existing information on marine water and sediment quality in the study area. These were undertaken in June-July 2016 and January 2017. The methodology for these field activities are described in the marine studies scope and methods ('rationale') (ERIAS Group, 2016b) and addendum (ERIAS Group, 2016c).

Sampling activities consisted of the following activities:

Marine water quality

- Collection of site-based in situ water quality data across the entire depth profile using a calibrated YSI probe, and visual observations of surface conditions. Data collected using instrument included temperature, pH, salinity, electrical conductivity (EC), dissolved oxygen (DO) and turbidity. Visual observations were made of color, smell, algae presence, iridescence, bacterial aggregates, rubbish, and precipitates.
- Deployment of calibrated water quality instruments on the seabed at Orokolo Bay to continuously measure and log turbidity, conductivity, temperature and depth data for part of the field survey.
- Collection of marine water samples for analytical testing of the parameters listed in Table 5-1. Samples were taken, at a minimum, at the surface and sea floor, with additional mid-water samples taken at particular sites (of greater water depth).

Marine sediment quality

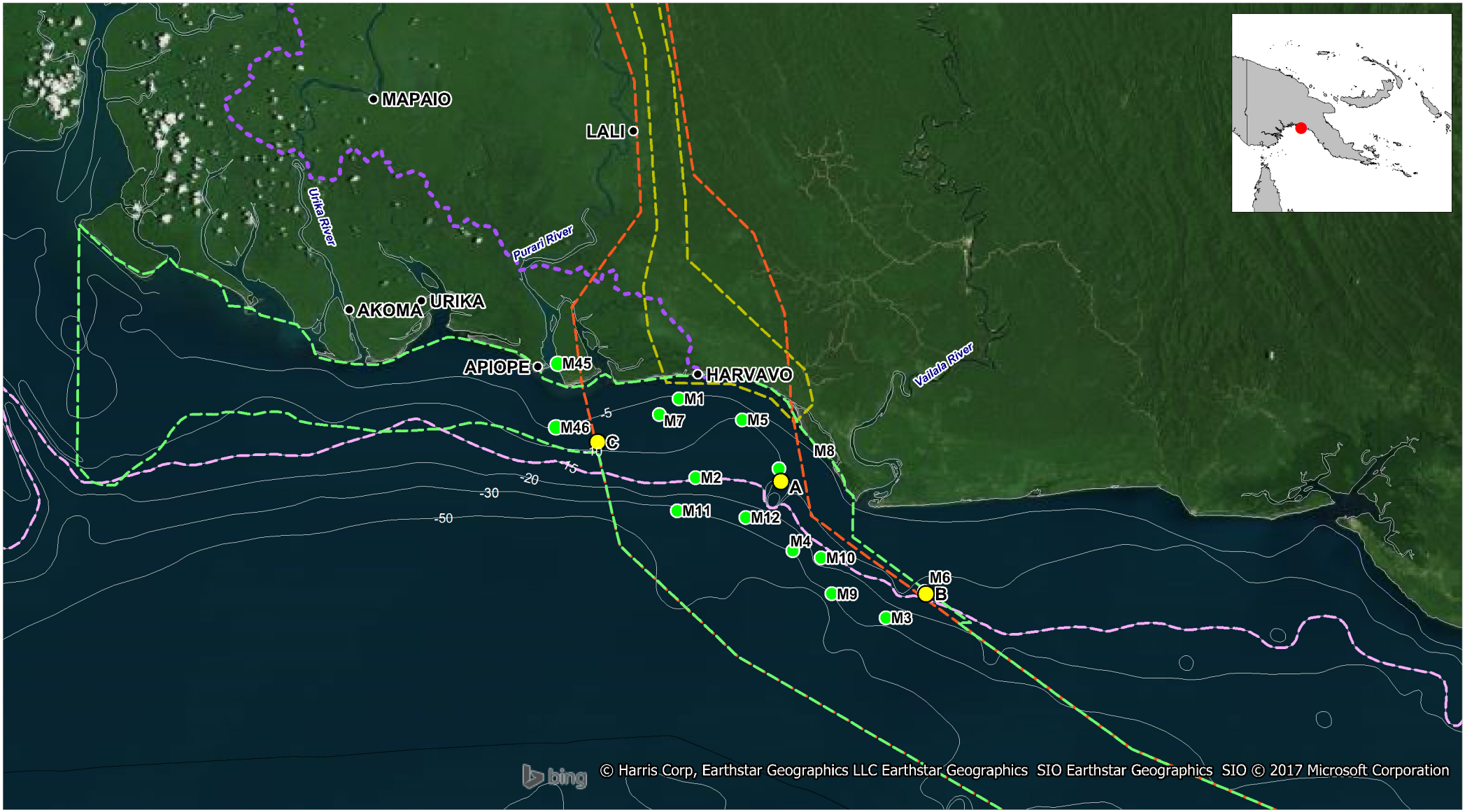
- Collection of marine sediment samples for analytical testing of the parameters listed in Table 5-1.

Plates of sampling techniques are shown in Appendix A.

All marine water quality sampling activities were undertaken as part of both surveys (water quality is typically influenced by seasonal fluctuations), while sediment sampling activities were once-off (sediment quality is not typically influenced by seasonal fluctuations), with most samples collected during the June-July 2016 survey. Due to the risk of unexploded ordnances (UXOs), sediment sampling was not undertaken at Caution Bay.

A total of 49 sites were sampled across both surveys, with a summary of the rationale for site selection provided in Section 5.3.2. The sites are shown in Figure 5-1 to Figure 5-3 and listed in Table 5-2. Table 5-3 summarizes the activities undertaken at each location.

Field surveys were conducted from a live-aboard research vessel, the *Browse Enterprise*.



LEGEND

- Town/Village
- Water and Sediment Sites
- Instrument Sites
- ESBS Study Area
- Nearshore/Offshore Waters Boundary
- Indicative Estuarine/ Freshwater Boundary
- Pipeline Corridor
- Narrowed Onshore Pipeline Corridor
- -5 Contours (m)

Title:

Survey Sites – Orokolo Bay

Figure: **5-1**

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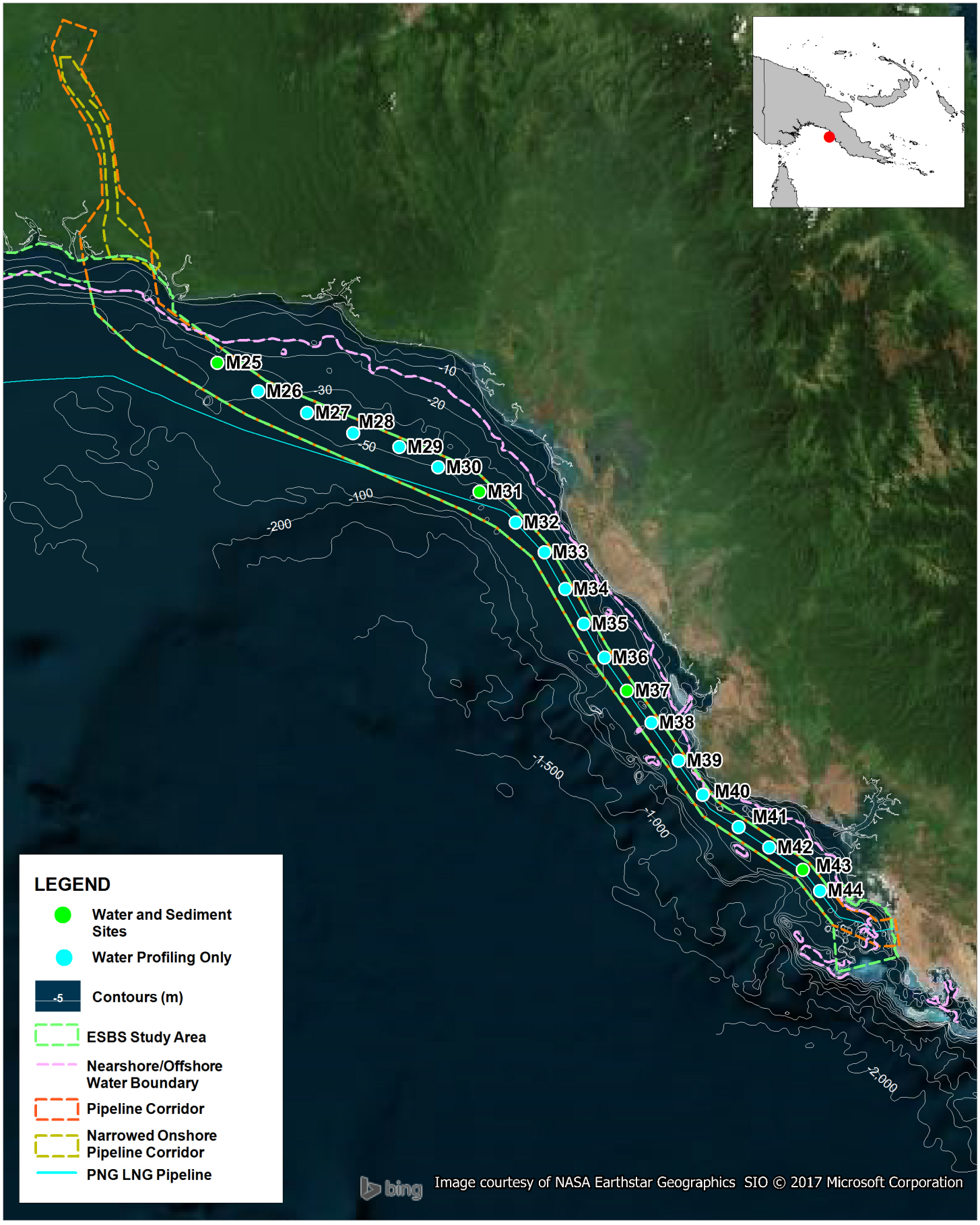
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Title:

Survey Sites – Offshore Pipeline Corridor

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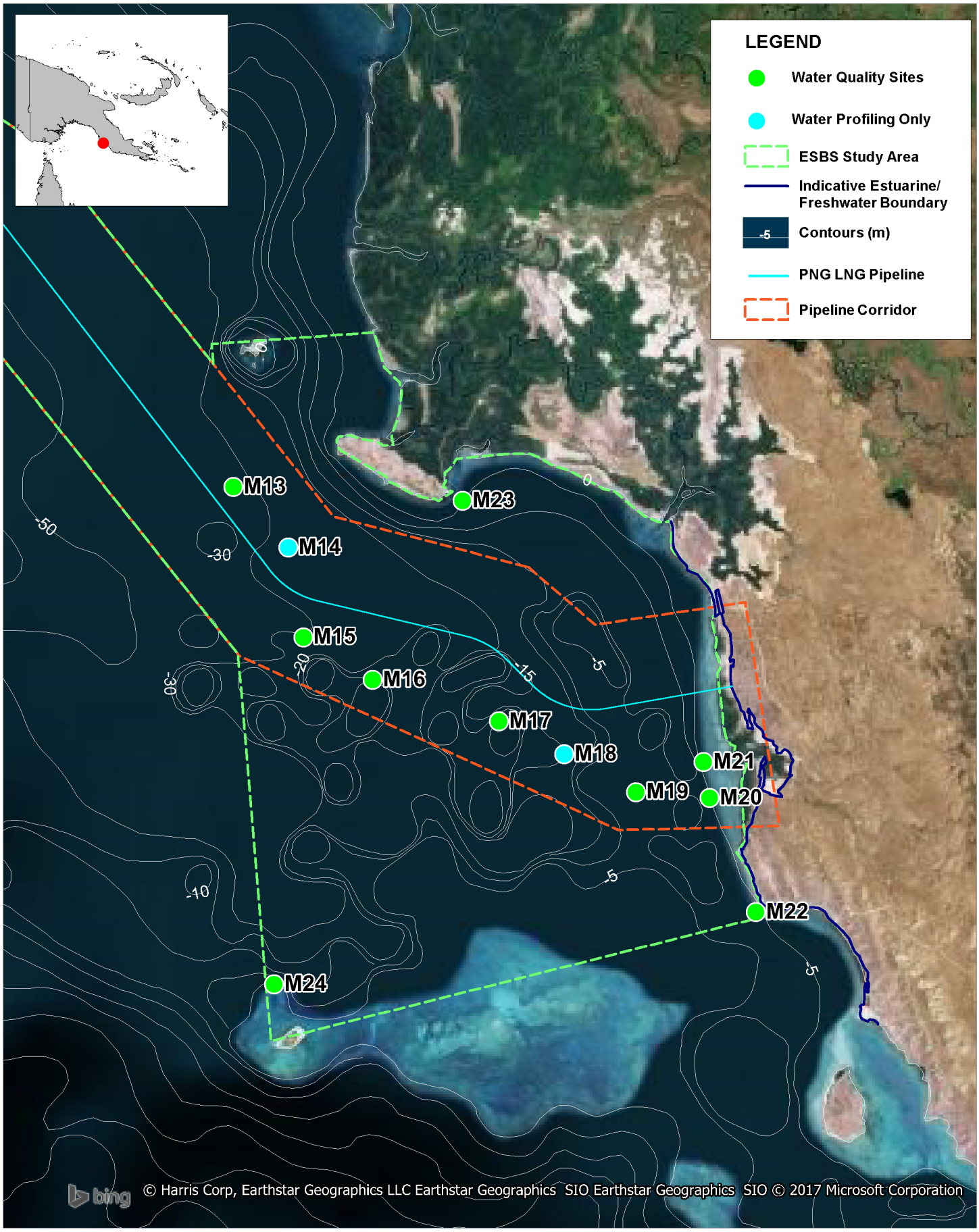
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Title:

Survey Sites – Caution Bay

Figure: **5-3**

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Table 5-2 Sampling Site Coordinates and Depths

No.	Coordinates*	Maximum depth	No.	Coordinates*	Maximum depth
Orokolo Bay (sampling)			*Orokolo Bay (instrument deployment)*		
M1	-7.870057, 145.27448	6.3 m	A	-7.930508, 145.349525	-
M2	-7.927804, 145.286573	16.6 m	B	-8.012644, 145.456755	-
M3	-8.030354, 145.427321	27.4 m	C	-7.901679, 145.214250	-
M4	-7.981364, 145.358308	27.5 m	*Offshore export pipeline corridor*		
M5	-7.885546, 145.321091	8.9 m	M25	-8.084702, 145.501914	24.6 m
M6	-8.011039, 145.455618	12.3 m	M26	-8.147329, 145.592558	46.2 m
M7	-7.881584, 145.361872	7.5 m	M27	-8.195253, 145.701121	41.9 m
M8	-7.921208, 145.259665	10.9 m	M28	-8.240063, 145.803743	48.9 m
M9	-8.012703, 145.387214	26.4 m	M29	-8.269933, 145.906365	49.2 m
M10	-7.986407, 145.379265	21.1 m	M30	-8.314733, 145.99314	52.6 m
M11	-7.952096, 145.273035	26.7 m	M31	-8.368488, 146.084444	53.8 m
M12	-7.956869, 145.32362	24.8 m	M32	-8.435670, 146.165183	60.4 m
M45	-7.844326, 145.184641	7.2 m	M33	-8.501348, 146.230075	59.0 m
M46	-7.890951, 145.183274	6.8 m	M34	-8.581938, 146.27535	63.7 m
Caution Bay			M35	-8.659201, 146.316514	63.1 m
M13	-9.277466, 146.869846	22.8 m	M36	-8.732625, 146.36288	52.7 m
M14	-9.293712, 146.884815	22.2 m	M37	-8.805708, 146.412682	45.1 m
M15	-9.317768, 146.888878	30.7 m	M38	-8.875795, 146.467011	35.5 m
M16	-9.329183, 146.907774	31.2 m	M39	-8.959286, 146.528131	35.0 m
M17	-9.340335, 146.942079	28.7 m	M40	-9.033815, 146.581707	30.5 m
M18	-9.349162, 146.959855	22.3 m	M41	-9.105348, 146.660935	52.0 m
M19	-9.359326, 146.979414	19.1 m	M42	-9.150049, 146.729602	42.3 m
M20	-9.360864, 146.999434	7.4 m	M43	-9.198948, 146.804434	43.8 m
M21	-9.341529, 146.987706	8.2 m	M44	-9.244915, 146.842235	39.4 m
M22	-9.391556, 147.011961	10.5 m			
M23	-9.281133, 146.932183	5.0 m			
M24	-9.410869, 146.880965	15.9 m			

*Coordinates used are based on World Geodetic System (WGS) 1984 and projection Universal Trans Mercator (UTM) Zone 55 South

Table 5-3 Summary of Marine Water and Sediment Sampling Activities

Sampling activity	Sites	Survey	Notes
Marine water quality			
In situ water quality data collection and visual observations	M1-M44	June July 2016	
	M1-M46	January 2017	Sites M45 and M46 were added between the two field surveys
Continuous water quality measurement and logging	A, B	June-July 2016	
	B, C	January 2017	Site C replaced Site A in order to provide continuous water quality data near mouth of Purari River
Collection of marine water samples for analytical testing – surface, mid and bottom (i.e. 3x samples)	M3-M5, M9, M11-M13, M25, M31, M37, M43	June-July 2016	
	M3, M9, M11-M13, M15-M16, M25, M31, M37, M43, M45-M46	January 2017	Sites M45 and M46 were added between the two field surveys
Collection of marine water samples for analytical testing – surface and bottom (i.e. 2x samples)	M1-M2, M5-M8, M10, M17, M19, M21-M22	June-July 2016	
	M1-M2, M5-M8, M10, M17, M19, M21-M24	January 2017	
Marine sediment quality			
Collection of sediment samples for analytical testing	M1-M12, M25, M31, M37, M43	June-July 2016	No sediment sampling was possible at Caution Bay due to risk of unexploded ordnances
	M45-M46	January 2017	Sites M45 and M46 were added between the two field surveys

5.3.2 Site Selection

Sites were selected for the field survey in order to provide sufficient level of data to characterize the existing environment of the study area. As a final description of marine infrastructure alignments has not yet been made, it is not possible to distinguish between ‘reference’ and ‘impact’ sites across most of the study area. However, survey sites at Orokolo Bay and Caution Bay have been sufficiently distributed to ensure that once infrastructure alignments are finalized, a clear distinction between reference and impact sites can be made.

Orokolo Bay

For Orokolo Bay, sampling sites M1 to M12 were identified in order to provide the greatest level of overlap with acoustic survey lines undertaken for the purposes of benthic habitat mapping; these are described in the Marine Biodiversity Baseline Report (BMT WBM, 2017c; Part 11 of ESBS Dossier). These sites have been distributed in order to reflect changes in depth and distance from the mouths of the Purari and Vailala rivers, both of which may have impacts on water and/or sediment quality.

Sampling sites M45 to M46 were added between the first and second surveys in order to allow for additional characterization of the water and sediment quality in the Purari River either side of the bar at the mouth. Site M45 was located immediately upstream of the bar in the main channel of the river (Aievi Passage), while Site M46 was located offshore of the bar, at the 5 m depth contour.

Instrument-deployment sites A, B and C were originally selected based on the presence of seabed 'rises' indicated by the Admiralty Charts for Orokolo Bay. These rises were expected to represent rocky reefs which could support important biodiversity values (e.g. coral species). Such 'sensitive receptors' are considered important for continuous water quality measurements as they represent the ecological values most sensitive to impacts associated with changes in water quality (i.e. turbidity). However, investigations during the first survey identified that the Admiralty Charts for the area were not accurate and no seabed rises or rocky reefs were present at these sites. During the first survey, Site B was therefore moved to Site M6 where a rocky reef was identified while Site A was moved to a central location in the nearshore waters of the bay. During the second survey, an instrument was deployed at Site C rather than Site A since there were no biologically important features at Site A. Site C was chosen in order to provide information on the influence of the Purari River on turbidity in Orokolo Bay as this site is directly opposite the Purari River mouth.

Offshore Export Pipeline Corridor

Twenty sites were identified and spaced evenly across the offshore export pipeline corridor. This allowed for understanding of any changes in water quality along the corridor. Every sixth site was selected for sediment quality sampling in order to understand changes at periodic intervals in sediment characteristics.

Caution Bay

Within Caution Bay, sites M13 to M21 were selected as sampling sites distributed across a variety of depths within the offshore export pipeline corridor. Where possible, these sites were co-located with known coral reef assemblages (representing sensitive receptors in Caution Bay) or at sites previously sampled for the PNG LNG Project EIS, allowing for comparison of results.

In addition to these sites, sites M22 to M23 were selected as likely 'reference' sites due to their distance from the likely location of the export pipeline. Each of these sites is located at similar depths to sites within export pipeline corridor (most less than <15 m water depths) but at locations representing different environments, as follows:

- Site M23 – located north of the corridor, in the embayment formed by Redscar Head, characterized by nearshore seagrass meadows.
- Site M22 – located south of the corridor, immediately adjacent to mangrove-dominated coastline.
- Site M24 – located south of the corridor, adjacent to coral reef communities of Idihi Island.

These three locations characterize the different types of environment within Caution Bay for the purposes of understanding local water quality.

5.4 Permits Obtained

All water and sediment quality samples collected during field surveys were tested at Australian laboratories, therefore a Permit to Import was required to import the samples into Australia. The laboratory used for analysis, Australian Laboratory Services (ALS), holds the relevant permits and no additional permits were required to be obtained.

5.5 Water and Sediment Quality Guidelines

As described in Section 2, various water and sediment quality criteria and guidelines were used to describe the existing quality of marine water and sediment. These are summarized in Table 5-4 below.

Table 5-4 Relevant Water and Sediment Quality Guidelines for Benchmarking

Guideline	Abbreviated form	Relevance
Schedule 1 of the Environment (Water Quality Criteria) Regulation 2002	PNG ER	Legally enforceable water quality criteria, typically adopted for Environment Permit conditions (discharge and receiving water quality).
ANZECC/ARMCANZ (2000) Water Quality Guidelines	ANZECC	International good practice guidelines, providing 'trigger values' for the protection of aquatic species. **NOTE**: For the purpose of the ESBS, trigger values for the 95% level of species protection have been adopted as this level of protection is typically used for slightly to moderately disturbed ecosystems where biological communities are in healthy condition and ecosystem integrity is largely retained. Less stringent (90% and 80% level of protection) and more (99% level of protection) stringent levels are also available, with the former usually used for highly disturbed ecosystems and the latter used for high conservation pristine environments.
Schedule 2 of the Marine Pollution (Sea Dumping) Regulation 2014	PNG MPR	Screening criteria for dredged material proposed to be placed at sea.
Simpson *et al.* 2013 Sediment Quality Guideline Values	SQGV	International good practice guidelines representing concentration levels of contaminants in sediment relative to ecotoxicological effects. The standard SQGV criteria are concentrations below which effects are not expected; the SQG-High criteria are concentrations above which effects could occur.

The criteria under these guidelines are used for the purposes of 'benchmarking' the existing environment, noting that criteria from Papua New Guinea regulations are legally enforceable water quality criteria, typically adopted for Environment Permit conditions (discharge and receiving water quality). However, these standards are based on water quality criteria that may not be protective of aquatic ecosystems based on the current state of knowledge of toxicant exposure to biota. In accordance with good international industry practice, assessment is also undertaken using more recent international guidelines provided by ANZECC/ARMCANZ (2000).

The criteria and guidelines are presented in Table 5-5 (water) and Table 5-6 (sediment).

Table 5-5 Ambient Receiving Water Quality Criteria and Guideline Values

Parameter	Units	PNG ER[1]	ANZECC[2]
Temperature	°C	No alteration >2°C	-
Dissolved Oxygen	% sat	-	>90
	mg/L	>5	-
Turbidity	NTU	No alteration >25	-
Electrical Conductivity	µS/cm	-	-
pH	-	No alteration to natural pH	8.0 - 8.4
Total Suspended Solids	mg/L	-	-
Total coliforms	CFU/100mL	-	-
Potassium (K)	mg/L	450	-
Sulfate (SO_4^{2-})	mg/L	-	-
Silver (Ag)	µg/L	50	1.4
Aluminum (Al)	µg/L	-	-
Arsenic (As) as As III	µg/L	50	-
Barium (Ba)	µg/L	1,000	-
Cadmium (Cd)	µg/L	1	0.7^
Chromium (Cr) as Cr VI	µg/L	10	4.4
Cobalt (Co)	µg/L	Limit of detection	1
Copper (Cu)	µg/L	30	1.3
Iron (Fe)	µg/L	1,000	-
Lead (Pb)	µg/L	4	4.4
Mercury (Hg)	µg/L	0.2	0.1^
Nickel (Ni)	µg/L	1,000	7^
Strontium (Sr)	µg/L	-	-
Tin (Sn)	µg/L	500	-
Vanadium (V)	µg/L	-	100
Zinc (Zn)	µg/L	5,000	15
Ammonia	mg/L	-	0.91
Nitrate	mg/L	45.0	0.7

Note: Water quality criteria/guideline values for metals/metalloids are for dissolved metals/metalloids

[1] PNG ER criteria are those relevant to marine waters

[2] ANZECC/ARMCANZ (2000) values based on a 95% level of species protection for metals/metalloids in marine waters in typical slightly–moderately disturbed systems, and slightly disturbed lowland river or marine environment in tropical Australia for other parameters except: ^ cadmium, mercury and nickel values are for protection of 99% of species in typical slightly–moderately disturbed systems as per ANZECC/ARMCANZ (2000) (which recommends the use of 99% species protection guideline values for these metals/metalloids due to the risk from bioaccumulation and secondary poisoning (Hg and Cd), or because the 95% level is not considered sufficiently protective (Ni)).

- indicates there is no guideline value available for these parameters

Table 5-6 Sediment Quality Guideline Values

Analyte	Units	PNG MPR	SQGV	SQG-High
Silver (Ag)	mg/kg	1.0	1.0	4.0
Antimony (Sb)	mg/kg	2	2	25
Arsenic (As)	mg/kg	20	20	70
Cadmium (Cd)	mg/kg	1.5	1.5	10
Chromium (Cr)	mg/kg	80	80	370
Copper (Cu)	mg/kg	65	65	270
Mercury (Hg)	mg/kg	0.15	0.15	1
Nickel (Ni)	mg/kg	21	21	52
Lead (Pb)	mg/kg	50	50	220
Zinc (Zn)	mg/kg	200	200	410
TPH	mg/kg	550	280	550
PAH	µg/kg	n/a	10,000	50,000
Tributyltin (as Sn)	ng Sn/g	9	-	-

5.6 Limitations

Due to the risk of UXOs at Caution Bay, sediment sampling was not possible at this location. While this limited the ability to undertake analysis of sediment, it is not considered to be a significant limitation due to the presence of existing data for this area collected for the PNG LNG Project EIS.

In addition, in-field equipment malfunctions have caused some limitation in the availability of in situ data for marine water quality. These were:

- Loss of water quality profiling data for two sites (M17 and M19) in Caution Bay during the June-July 2016 surveys. While data was collected at these sites during the January 2017 survey, the loss of the earlier data means that seasonality has not been captured for these two sites during the survey. However, the availability of profiling data from other sites in Caution Bay and equivalent data (albeit surface only) from the PNG LNG Project EIS means sufficient baseline data is available to characterize existing conditions and that the absence of seasonal data for these two sites is not considered to be a significant limitation.
- Capping of continuous turbidity measurements at Site A during the June-July 2016 survey at 110 NTU. Due to the turbid nature of the water at this location, there were a number of turbidity readings for this site that exceeded the cap. However, the instrument deployed at Site B provided measurements over a higher turbidity range (i.e., was not limited to 110 NTU) and provides a dataset that can be extrapolated to cover the Site A readings where relevant.

These limitations are not anticipated to impact on the ability to characterize the baseline marine water and sediment quality environment suitable for preparation of an EIS/ESHIA.

6 Baseline Characterization

This section provides an overview of the marine water and sediment quality baseline for the study area within the context of national and international water and sediment quality criteria and guidelines. It includes discussion on physicochemical parameters, general water quality, nutrients and toxicants in water and sediment, based on historical field studies and the June-July 2016 and January 2017 surveys. Raw data is provided in the appendices to this report.

6.1 Overview

Water and sediment quality are important environmental assets in the study area and surrounds due to the presence of a number of ecological receptors that are sensitive to altered water and sediment quality conditions. These sensitive receptors, discussed further in the Marine Biodiversity Baseline Report (BMT WBM, 2017c) include seagrass meadows and coral reef habitats in Caution Bay, along with a number of important marine species.

6.1.1 Orokolo Bay and Offshore of Purari River Delta

Orokolo Bay and the Purari River delta are subject to two distinctive seasons experiencing north to northwest monsoon winds from December to March (wet season) and southeast trade winds from May to October (dry season), with April and November acting as changeover periods (Evesson, 1983).

Water depth varies in Orokolo Bay and the Purari River delta, with depths of 5 to 10 m in nearshore areas and up to 30 m in areas further offshore. Bed sediment composition in these areas is mostly comprised of silts and clays, with areas near the Purari River mouth comprised of higher proportions of sandy substrate.

The Purari River mouth is approximately 10 km to the west of the centerline of the proposed offshore pipeline corridor.

Resuspension of sediments in the Gulf of Papua, leading to increased water turbidity, is driven primarily by wind-driven waves (Saint-cast and Condie, 2006). In the wet season, winds tend to be calmer. Wind strength gradually increases throughout the year to a peak with the dry season trade winds in July, and then progressively decreases with the return of the wet season. Dry season trade winds are generally strong from the southeast and cover a significant fetch across the Coral Sea. Therefore, turbidity generated from wind and wave driven resuspension is likely to be highest during the dry season, while turbidity generated by fluvial delivery of terrigenous sediment is highest during the wet season.

6.1.2 Offshore Export Pipeline Corridor

The offshore export pipeline corridor within the Gulf of Papua traverses the edge of the continental shelf. The seafloor sediment composition in the deepest waters along the corridor (up to 90 m) varies from soft clays to well-layered interbedded sand, silt and clay layers (CNS, 2008a).

As the pipeline corridor rises again (depths of 35 to 60 m) up to the edge of Caution Bay the substrate changes to a slightly silty clay (CNS 2008a). This area also includes some rocky outcrops.

6.1.3 Caution Bay

Caution Bay is subject to the same distinct seasonality as Orokolo Bay, with a period dominated by northwest monsoons from December to March, and by southeast trade winds from May to November (GEMS, 2008). Suspended sediment levels are typically higher during the wet season than the dry season, most likely due to higher runoff during the wet season.

The seafloor at Caution Bay is primarily characterized by terrigenous silt and clay sediments (CNS, 2008b). This ranges from muddy sediment in deeper waters (30 to 50 m deep) through to coarser coral sands and coral rubble in shallow areas (<30 m deep) (CNS, 2008b). Within the nearshore and intertidal area, the benthic environment is predominantly mud flats, particularly in the vicinity of the Vaihua River estuary.

6.2 Water Quality Conditions

6.2.1 In Situ Physicochemical Data

The physicochemical data was collected at each site by water quality profiling, involving in situ measurements taken throughout the water column. Results from the dry season and wet season surveys are summarized in Table 6-1 to Table 6-3. Data are provided for surface, middle and bottom water layers at each site. Values exceeding any of the water quality guideline values are highlighted.

The water quality profiling data are also presented as graphs for key parameters in Figure 6-1 to Figure 6-9.

6.2.1.1 Temperature

Water temperature was fairly consistent at all sites, with temperatures ranging between 26˚C and 31˚C at all sites during wet and dry season surveys (Figure 6-1, Figure 6-4 and Figure 6-7). Slightly warmer temperatures (1 to 2°C higher) were recorded during the wet season survey, and slightly warmer temperature was recorded in surface waters at most sites. Sites in Orokolo Bay had higher water temperature (where temperatures ranged from 28 to 30˚C) compared to Caution Bay sites and offshore export pipeline corridor sites (26 to 30˚C).

The water quality profiling data from sites at Orokolo Bay showed that surface waters (i.e. top 10 to 15 m of water) were warmer than lower layers (Figure 6-3). This indicates the presence of stratified water layers (stratification), mostly likely due to overlying freshwater from Purari River discharges (discussed below). The less dense fresher waters in the upper layers are prevented from mixing with denser more saline waters in lower layers, allowing the upper surface layers to warm up more than lower layers.

6.2.1.2 Electrical Conductivity and Salinity

During the dry season survey, electrical conductivity (EC) and salinity measurements were similar between sites at Caution Bay and the offshore export pipeline corridor (Figure 6-1, Figure 6-4 and Figure 6-7). Electrical conductivity was approximately 53,000 to 55,000 µS/cm at these sites, while salinity was approximately 36 parts per thousand (ppt). Furthermore, EC and salinity remained fairly consistent through the water column at Caution Bay and offshore export pipeline corridor sites, indicating that stratification was not evident at the time of sampling (dry season) in these areas. In contrast, sites in Orokolo Bay had less saline water in surface layers (~35,000 µS/cm), with EC increasing with depth to approximately 55,000 µS/cm in bottom water (Figure 6-1). As discussed in

Section 6.2.1.1, this indicates that stratification was evident at Orokolo Bay sites at the time of sampling during the dry season survey, which was likely due to freshwater discharges from the Purari River and the calm conditions at the time of sampling. These calm conditions are reflected in the dry season profiling data for all three areas, which generally shows more consistent water quality conditions between sites during the dry season survey relative to the wet season survey, when greater variability was evident in the data.

During the wet season survey, EC and salinity was higher in surface waters in Orokolo Bay compared to the dry season survey, and was more consistent through the water column, indicating less stratification compared to the dry season survey. The site at the Purari River mouth (Site M45) had relatively fresh surface waters (~2,000 µS/cm) and saline bottom waters (~40,000 µS/cm). Electrical conductivity and salinity at sites along the offshore export pipeline corridor and Caution Bay were lower in surface waters during the wet season survey compared to the dry season survey. This indicates that in the wet season, riverine plumes had not fully mixed with marine water in surface water layers (top 10 to 20 m) in these offshore marine areas.

The EC data indicates that freshwater discharges from the Purari River and other nearby riverine systems has a noticeable influence on water quality within the Gulf of Papua, especially in nearshore coastal areas such as Orokolo Bay. With rainfall in the Papua New Guinea highlands of 10 to 13 m annually, the combined freshwater discharge is substantial, being about 15,000 m^3/s (Martins and Wolanski (2015). Martins and Wolanski (2015) reported that this freshwater discharge produces a brackish water plume that covers most of the gulf, extending no more than 20 m in depth, progressively thinning out with increasing distance from the coast. In June 1991, Wolanski *et al.* (1994) observed that the brackish water plume was confined to coastal waters, suggesting a highly dynamic nature of the plume.

6.2.1.3 pH

The pH of waters was within the ANZECC guideline range for marine water of pH 8.0 to 8.4 at most sites (Figure 6-2, Figure 6-5 and Figure 6-8). The exceptions were two sites in Orokolo Bay (M1 and M7) during the dry season survey and seven sites during the wet season, which had pH values slightly below pH 8.0 in deeper water layers. Eleven sites along the offshore export pipeline corridor had pH values slightly below pH 8.0 in surface waters during the dry season survey, while most sites ins this area had pH values below pH 8.0 during the wet season survey (Figure 6-5). The four sites at the eastern end of the pipeline corridor near Caution Bay (M41, M42, M43 and M44) had higher pH values relative to the other sites, with pH values between pH 8.0 and 8.2 throughout the water column. These four sites also had higher EC and salinity compared to other offshore pipeline sites (Figure 6-5), which may be reflective of increasing distance from the major river inflows, hence greater influence of marine waters.

6.2.1.4 Turbidity

Turbidity was below 15 NTU at all sites during the dry season survey, with turbidity typically higher in bottom waters at most sites at Orokolo Bay and Caution Bay (Figure 6-2 and Figure 6-8). During the dry season survey, turbidity was lowest at Caution Bay sites (0.1 to 2 NTU), slightly higher at offshore pipeline sites (0 to 8 NTU) and highest at Orokolo Bay sites (0.2 to 15 NTU). Compared to dry season turbidity, during the wet season survey turbidity was similar at offshore export pipeline corridor sites, slightly higher at Caution Bay sites and slightly lower at Orokolo Bay sites.

As shown in Figure 6-2, Site M45 (mouth of the Purari River) during the wet season had much higher turbidity (~100 NTU) than other sites in Orokolo Bay (up to 15 NTU). The water quality in general at this site was different to other Orokolo Bay sites, with noticeably different temperature, conductivity, and pH values (Figure 6-1 to Figure 6-3). This difference in water quality is due to the location of the site at the mouth of the Purari River, which discharges significant volumes of sediment laden freshwater.

6.2.1.5 Dissolved Oxygen

Dissolved oxygen (DO) was above the ANZECC guideline value for marine water of greater than 90% saturation at all sites in Caution Bay during the dry season and wet season surveys, and all surface waters at sites along the offshore export pipeline corridor. Dissolved oxygen decreased with depth at offshore export pipeline corridor sites during the dry season and wet season surveys, with DO levels dropping below 90% saturation in water depths below about 20 m at most sites. However, DO was not recorded below 80% saturation at the offshore export pipeline corridor sites, even at depths of >50 m (Figure 6-6).

During the dry season survey, DO levels in surface waters at all Orokolo Bay sites were above 100% saturation[2]. However, DO levels decreased with depth at all sites, decreasing below the ANZECC guideline value of 90% saturation around a water depth of 5 to 10 m. Dissolved oxygen levels in bottom waters at Orokolo Bay sites were approximately 70 to 80% (Figure 6-3), indicating there was some stratification present during the dry season survey. In contrast, during the wet season survey Dissolved oxygen levels generally remained steady or slightly increased with depth, indicating less stratification and better mixing of the water column.

Dissolved oxygen concentrations were above the PNG ER guideline value of 5 mg/L at all sites in Caution Bay and the offshore export pipeline corridor during the dry season and wet season surveys. Dissolved oxygen concentrations were below the PNG ER guideline value in bottom waters at nine sites in Orokolo Bay during the dry season survey and three sites during the wet season survey.

[2] Dissolved oxygen levels greater than 100% air saturation can occur in environmental water because of the production of oxygen by photosynthetically-active organisms and/or incomplete equilibration of dissolved oxygen between water and the air above it, with a 'healthy' range for aquatic organisms typically being between 80 to 120% saturation.

Table 6-1 Orokolo Bay – In situ Physicochemical Data

Site name	Depth Profile	Water Depth (m)	Temp		EC		Salinity		pH		Turbidity		Dissolved Oxygen			
			°C		µS/cm		ppt		-		NTU		% sat		mg/L	
			Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
M1	Surface	0.3	29.6	29.1	34,137	44,351	21.3	28.5	8.16	8.11	13.7	0.9	114.3	101.3	7.7	6.6
	Middle	3.0	28.9	29.8	36,238	46,171	22.8	29.8	8.08	7.99	5.6	2.0	103.1	104.1	7.0	6.7
	Bottom	6.3	28.4	29.6	50,155	48,404	32.8	31.4	7.93	7.88	12.6	3.4	53.8	89.6	3.5	5.7
M2	Surface	0.3	29.6	29.9	33,803	44,467	21.1	28.6	8.17	8.12	0.8	0.8	112.2	97.1	7.6	6.3
	Middle	7.9	28.3	29.6	49,871	49,244	32.6	32.1	8.07	7.99	0.8	-	96.9	100.7	6.3	6.4
	Bottom	16.6	28.4	29.2	53,774	50,769	35.4	33.2	8.03	7.95	6.0	0.4	76.8	87.9	4.9	5.6
M3	Surface	0.3	29.3	28.8	31,988	38,530	19.8	24.4	8.25	8.11	0.2	1.5	109.3	95.2	7.5	6.4
	Middle	13.1	28.4	29.3	54,267	59,260	35.8	39.5	8.04	8.11	1.8	0.3	74.8	98.5	4.8	6.1
	Bottom	27.4	28.4	29.1	55,095	60,810	36.4	40.7	8.09	8.08	1.1	0.3	81.9	96.6	5.2	5.9
M4	Surface	0.3	29.8	29.6	34,838	39,783	21.8	25.3	8.21	8.09	0.2	-	105.2	74.6	7.1	4.9
	Middle	13.0	28.4	29.3	53,708	57,657	35.4	38.3	8.07	8.13	0.7	0.6	83.8	90.9	5.4	5.6
	Bottom	27.5	28.5	28.9	54,517	60,081	36.0	40.2	8.04	8.04	3.1	1.0	73.2	86.4	4.7	5.3
M5	Surface	0.3	29.5	29.7	34,740	41,874	21.7	26.7	8.18	8.00	0.4	0.7	108.6	100.7	7.4	6.6
	Middle	4.0	29.0	29.7	35,894	46,827	22.6	30.3	8.16	8.01	1.2	2.1	108.4	103.9	7.4	6.7
	Bottom	8.9	28.3	29.6	50,532	49,683	33.0	32.4	8.02	7.89	4.5	1.4	81.5	76.9	5.3	4.9
M6	Surface	0.3	28.7	29.2	33,303	49,060	20.8	31.9	8.11	8.11	0.4	1.2	106.9	94.6	7.4	6.1
	Middle	6.0	28.3	29.2	51,540	58,690	33.8	39.1	8.06	8.13	0.4	-	87.9	96.0	5.7	5.9
	Bottom	12.3	28.4	29.2	54,489	59,300	36.0	39.5	8.03	8.13	10.5	0.8	71.7	95.5	4.6	5.9
M7	Surface	0.3	29.6	30.5	34,262	45,292	21.4	29.2	8.14	8.11	3.2	4.5	112.2	96.9	7.6	6.2
	Middle	4.0	28.5	29.7	47,838	48,152	31.1	31.3	7.96	8.04	5.1	1.0	82.6	103.6	5.4	6.6
	Bottom	7.5	28.3	29.6	50,042	49,024	32.7	31.9	7.99	7.96	6.8	1.9	70.9	96.7	4.6	6.2
M8	Surface	0.3	29.0	29.4	34,470	39,426	21.6	25.0	8.14	8.06	0.6	1.0	104.4	102.1	7.1	6.8
	Middle	5.2	28.6	29.6	48,372	48,158	31.5	31.3	8.02	8.00	1.8	1.1	97.6	101.8	6.4	6.5
	Bottom	10.9	28.3	29.5	50,407	49,803	33.0	32.5	8.00	7.91	8.3	1.1	77.2	82.8	5.0	5.3

Site name	Depth Profile	Water Depth (m)	Temp		EC		Salinity		pH		Turbidity		Dissolved Oxygen			
			ºC		µS/cm		ppt		-		NTU		% sat		mg/L	
			Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
M9	Surface	0.3	29.9	29.2	26,746	45,466	16.3	29.3	8.24	8.01	2.4	1.1	100.7	87.2	7.0	5.7
	Middle	13.1	28.4	29.2	53,771	58,457	35.4	38.9	8.08	8.10	0.7	0.2	83.6	94.9	5.3	5.9
	Bottom	26.4	28.5	29.2	54,747	59,874	36.2	40.0	8.09	8.09	0.9	0.2	81.4	95.4	5.2	5.9
M10	Surface	0.3	30.2	29.0	32,111	38,960	19.9	24.7	8.22	8.11	0.5	1.0	106.2	85.9	7.2	5.8
	Middle	10.0	28.3	29.4	52,308	57,390	34.4	38.1	8.09	8.13	1.6	-	85.7	95.6	5.5	5.9
	Bottom	21.1	28.5	29.2	54,631	58,190	36.1	38.7	8.00	8.10	11.3	0.4	61.3	94.0	3.9	5.8
M11	Surface	0.3	30.0	30.1	33,153	41,503	20.6	26.5	8.17	8.07	2.5	0.7	113.2	100.1	7.6	6.5
	Middle	13.2	28.4	29.3	53,705	50,411	35.4	32.9	8.06	8.01	0.7	0.3	83.5	99.3	5.3	6.3
	Bottom	26.7	28.5	27.9	54,354	53,641	35.9	35.4	8.04	7.89	6.1	0.3	74.5	80.6	4.7	5.2
M12	Surface	0.3	29.9	29.6	34,452	43,180	21.5	27.7	8.20	8.04	1.0	1.5	111.4	72.8	7.5	4.8
	Middle	12.1	28.4	29.4	52,993	57,340	34.9	38.1	8.04	8.11	1.6	1.1	79.4	92.7	5.1	5.7
	Bottom	24.8	28.5	29.0	54,244	59,350	35.8	39.6	8.04	8.03	5.3	0.5	75.6	88.3	4.8	5.4
M45	Surface	0.3	-	25.5	-	2,327	-	1.2	-	7.89	-	143.1	-	95.1	-	7.7
	Middle	3.7	-	25.9	-	12,860	-	7.4	-	7.82	-	124.8	-	92.0	-	7.2
	Bottom	7.2	-	28.8	-	40,418	-	25.7	-	7.85	-	78.7	-	92.7	-	6.2
M46	Surface	0.3	-	31.1	-	36,246	-	22.7	-	8.11	-	1.8	-	96.9	-	6.3
	Middle	3.3	-	29.7	-	47,656	-	30.9	-	8.03	-	1.5	-	102.0	-	6.5
	Bottom	6.8	-	29.7	-	48,115	-	31.2	-	8.00	-	8.0	-	97.8	-	6.3
Guideline values (marine water)	***PNG ER***		-		-		-		-		-		-		*>5*	
	ANZECC		-		-		-		*8.0-8.4*		-		*>90*		-	

Note: Yellow highlighted cells indicate exceedance of the ANZECC guideline values, while orange highlighted cells indicate exceedance of the PNG ER guideline values

Table 6-2 Offshore Export Pipeline Corridor – In situ Physicochemical Data

Site name	Depth Profile	Water Depth (m)	Temp		EC		Salinity		pH		Turbidity		Dissolved Oxygen			
			ºC		µS/cm		ppt		-		NTU		% sat		mg/L	
			Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
M25	Surface	0.3	28.3	30.2	52,651	40,652	34.6	25.85	8.04	7.99	3.1	0.2	99.7	104.9	6.4	6.9
	Middle	11.9	27.9	29.6	53,094	50,759	34.9	33.17	8.18	7.96	0.5	0.4	97.9	100.8	6.3	6.4
	Bottom	24.6	27.9	27.9	53,410	54,259	35.2	35.81	8.18	7.90	0.9	2.4	92.2	90.8	6.0	5.8
M26	Surface	0.3	27.9	29.7	54,944	39,719	36.3	25.21	7.93	7.96	0.0	8.2	101.1	100.5	6.5	6.6
	Middle	22.9	27.9	29.6	54,708	50,936	36.1	33.29	8.12	7.95	0.5	7.5	95.9	99.9	6.2	6.3
	Bottom	46.2	27.6	27.1	55,364	54,541	36.6	36.04	8.11	7.87	0.4	5.7	83.2	85.1	5.4	5.5
M27	Surface	0.3	27.9	29.6	54,440	41,629	36.0	26.56	7.77	7.98	3.4	2.1	99.1	100.6	6.4	6.6
	Middle	19.5	28.0	29.6	54,520	51,040	36.0	33.37	8.05	7.94	0.2	0.4	92.8	100.4	6.0	6.4
	Bottom	41.9	27.5	27.4	55,150	54,471	36.5	35.98	8.07	7.90	1.1	0.4	83.2	84.0	5.4	5.4
M28	Surface	0.3	28.0	29.7	54,114	43,128	35.7	27.63	7.90	7.94	2.5	2.5	99.4	101.1	6.4	6.6
	Middle	23.7	27.7	29.6	54,500	51,301	36.0	33.57	8.09	7.86	0.6	1.9	97.7	100.9	6.3	6.4
	Bottom	48.9	27.3	28.7	55,138	53,374	36.5	35.1	8.06	7.91	1.0	1.9	81.4	96.5	5.3	6.1
M29	Surface	0.3	28.0	29.8	54,361	40,997	35.9	26.1	7.94	7.95	0.0	1.4	98.8	101.6	6.3	6.7
	Middle	24.6	27.4	29.3	54,998	52,973	36.4	34.8	8.06	7.92	0.6	3.4	90.4	100.7	5.8	6.4
	Bottom	49.2	27.3	27.2	55,104	54,477	36.5	36.0	8.06	7.90	1.2	0.4	84.0	88.9	5.4	5.8
M30	Surface	0.3	27.9	30.0	54,170	38,899	35.7	24.6	7.91	7.99	2.4	0.8	98.9	103.3	6.4	6.8
	Middle	25.1	27.3	29.6	54,957	51,750	36.4	33.9	8.06	7.93	0.3	1.8	88.0	101.7	5.7	6.4
	Bottom	52.6	27.3	27.0	54,992	54,629	36.4	36.1	8.06	7.87	1.4	0.2	83.2	88.1	5.4	5.7
M31	Surface	0.3	27.9	30.0	54,375	40,897	35.9	26.0	7.97	7.94	0.3	1.6	98.9	103.3	6.4	6.8
	Middle	26.0	27.3	29.4	54,906	53,155	36.3	34.9	8.06	7.95	0.1	1.7	89.0	100.7	5.8	6.3
	Bottom	53.8	27.2	27.1	54,861	54,643	36.3	36.1	8.08	7.88	0.9	0.5	86.3	92.2	5.6	6.0
M32	Surface	0.3	28.2	30.2	54,729	38,694	36.2	24.5	7.68	7.98	7.2	0.4	98.3	103.3	6.3	6.8
	Middle	30.0	27.5	29.3	55,269	53,425	36.6	35.1	8.06	7.93	0.4	1.7	92.9	99.5	6.0	6.3
	Bottom	60.4	27.2	26.7	55,345	54,705	36.6	36.2	8.08	7.86	1.2	0.4	87.1	90.0	5.6	5.9

Site name	Depth Profile	Water Depth (m)	Temp		EC		Salinity		pH		Turbidity		Dissolved Oxygen			
			ºC		µS/cm		ppt		-		NTU		% sat		mg/L	
			Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
M33	Surface	0.3	28.2	30.7	54,554	37,193	36.0	23.4	7.92	7.95	0.4	1.1	97.5	104.9	6.2	6.9
	Middle	30.3	27.5	29.5	54,992	53,157	36.4	34.9	8.08	7.93	0.1	0.9	96.2	101.6	6.2	6.4
	Bottom	59.0	27.1	26.6	55,219	54,673	36.6	36.2	8.08	7.86	1.0	0.6	87.8	90.2	5.7	5.9
M34	Surface	0.3	27.5	30.0	55,260	43,363	36.6	27.8	7.74	7.92	1.9	1.4	97.6	102.5	6.3	6.7
	Middle	30.7	27.3	29.2	55,129	53,381	36.5	35.1	8.08	7.95	0.4	0.8	94.7	99.4	6.1	6.3
	Bottom	63.7	27.0	26.2	55,265	54,703	36.6	36.2	8.08	7.85	1.7	0.8	87.1	86.3	5.7	5.7
M35	Surface	0.3	27.9	30.0	54,802	42,621	36.2	27.3	8.00	7.94	1.0	2.2	97.6	102.3	6.3	6.7
	Middle	31.0	27.2	29.4	55,009	52,990	36.4	34.8	8.09	7.96	0.5	2.2	92.8	99.6	6.0	6.3
	Bottom	63.1	27.0	26.2	55,112	54,661	36.5	36.2	8.09	7.89	0.4	1.1	88.2	89.1	5.7	5.9
M36	Surface	0.3	27.9	30.2	54,721	43,468	36.2	27.9	8.00	7.96	4.5	2.1	97.8	103.7	6.3	6.7
	Middle	26.2	27.0	29.6	55,037	52,673	36.4	34.6	8.09	7.92	0.7	1.9	94.2	99.7	6.1	6.3
	Bottom	52.7	26.9	26.6	55,036	54,714	36.4	36.2	8.09	7.91	0.2	2.5	89.4	93.0	5.8	6.1
M37	Surface	0.3	27.8	30.3	54,845	44,888	36.3	28.9	7.95	7.96	1.8	5.3	97.8	103.0	6.3	6.6
	Middle	23.0	27.3	29.7	54,871	52,467	36.3	34.4	8.10	7.94	0.7	3.7	96.0	100.3	6.2	6.3
	Bottom	45.1	26.9	27.6	55,024	54,281	36.4	35.8	8.10	7.92	0.1	6.4	90.2	91.4	5.9	5.9
M38	Surface	0.3	27.1	30.2	55,652	43,535	36.9	27.9	7.82	7.97	0.4	5.2	98.2	103.5	6.4	6.7
	Middle	17.8	27.1	29.7	55,159	51,758	36.5	33.9	8.06	7.96	0.1	4.2	92.2	100.6	6.0	6.3
	Bottom	35.5	27.1	28.4	54,944	53,681	36.4	35.4	8.07	7.95	0.2	4.6	89.9	96.1	5.8	6.1
M39	Surface	0.3	27.1	30.1	54,516	44,609	36.0	28.7	8.00	7.97	2.9	1.6	99.1	100.8	6.4	6.5
	Middle	16.9	27.3	29.3	54,458	52,445	36.0	34.4	8.09	7.95	0.4	1.4	95.4	92.0	6.2	5.8
	Bottom	35.0	27.2	28.3	54,524	53,638	36.0	35.3	8.09	7.93	1.0	3.6	91.0	93.6	5.9	6.0
M40	Surface	0.3	27.4	30.0	54,039	46,186	35.7	29.8	8.02	7.93	0.0	1.5	97.9	100.9	6.4	6.5
	Middle	15.3	27.4	29.2	54,203	52,617	35.8	34.5	8.07	7.91	0.7	1.8	95.7	94.3	6.2	6.0
	Bottom	30.5	27.3	29.0	54,301	52,949	35.9	34.8	8.08	7.92	1.1	4.3	93.3	97.4	6.1	6.2
M41	Surface	0.3	27.3	30.4	54,102	52,169	35.7	34.2	8.11	8.22	1.0	4.2	98.7	101.1	6.4	6.3

Site name	Depth Profile	Water Depth (m)	Temp		EC		Salinity		pH		Turbidity		Dissolved Oxygen			
			ºC		µS/cm		ppt		-		NTU		% sat		mg/L	
			Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
	Middle	25.7	27.3	29.4	54,368	59,228	35.9	39.5	8.10	8.16	0.1	3.7	92.9	99.8	6.0	6.1
	Bottom	52.0	26.6	27.3	54,601	61,770	36.1	41.5	8.09	8.12	2.2	3.8	86.8	91.8	5.7	5.8
M42	Surface	0.3	27.0	30.3	54,349	50,957	35.9	33.3	8.03	8.21	0.3	0.7	98.8	102.2	6.4	6.4
	Middle	21.2	27.3	29.9	54,356	58,197	35.9	38.7	8.10	8.15	0.1	0.2	93.8	102.0	6.1	6.2
	Bottom	42.3	26.8	27.8	54,459	61,309	36.0	41.1	8.09	8.12	0.6	5.5	88.6	95.3	5.8	6.0
M43	Surface	0.3	27.4	28.2	53,455	51,602	35.2	33.8	8.07	8.06	0.4	0.9	98.8	100.4	6.4	6.5
	Middle	20.7	27.4	29.6	54,504	58,602	36.0	39.0	8.11	8.16	0.1	0.2	95.5	100.8	6.2	6.2
	Bottom	43.8	26.7	27.2	54,567	61,776	36.1	41.5	8.09	8.13	1.8	2.8	88.3	92.8	5.8	5.8
M44	Surface	0.3	26.8	30.3	54,330	49,445	35.9	32.2	8.09	8.22	1.0	0.6	98.1	100.0	6.4	6.3
	Middle	19.7	26.8	29.5	54,394	59,513	35.9	39.7	8.10	8.14	0.5	0.3	94.7	101.0	6.2	6.2
	Bottom	39.4	26.7	28.0	54,558	61,168	36.1	41.0	8.08	8.11	2.8	1.7	87.1	94.9	5.7	5.9
Guideline values (marine water)	***PNG ER***		-		-		-		-		-		-		*>5*	
	ANZECC		-		-		-		*8.0-8.4*		-		*>90*		-	

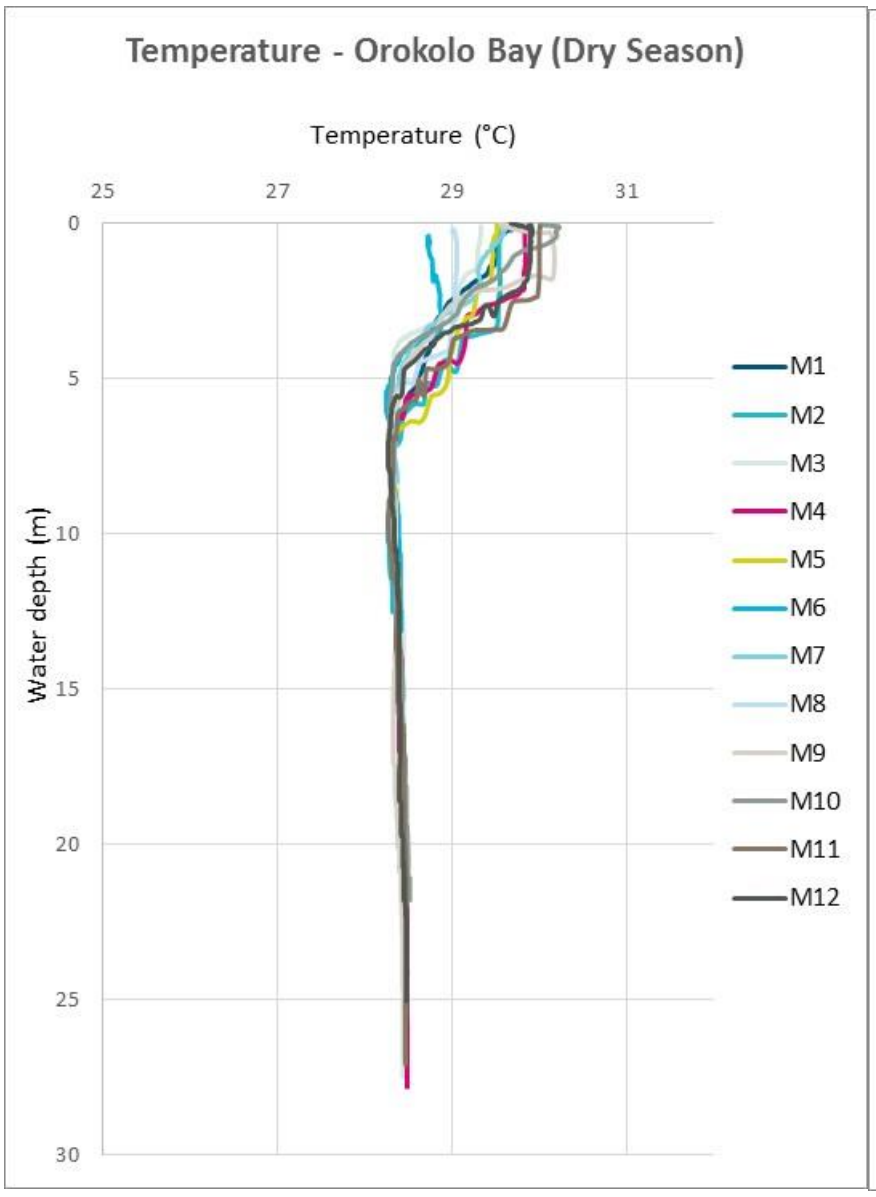
Note: Yellow highlighted cells indicate exceedance of the ANZECC guideline values, while orange highlighted cells indicate exceedance of the PNG ER guideline values

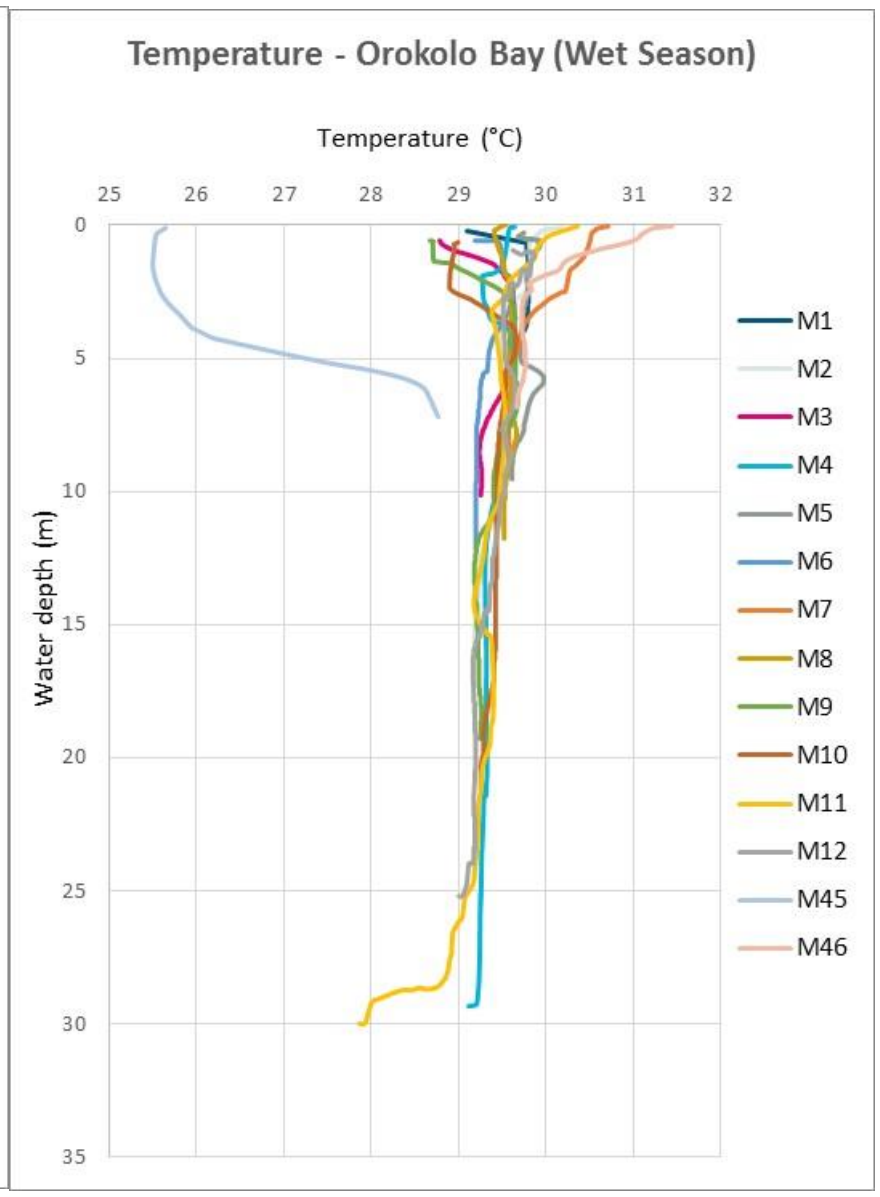
Table 6-3 Caution Bay – In situ Physicochemical Data

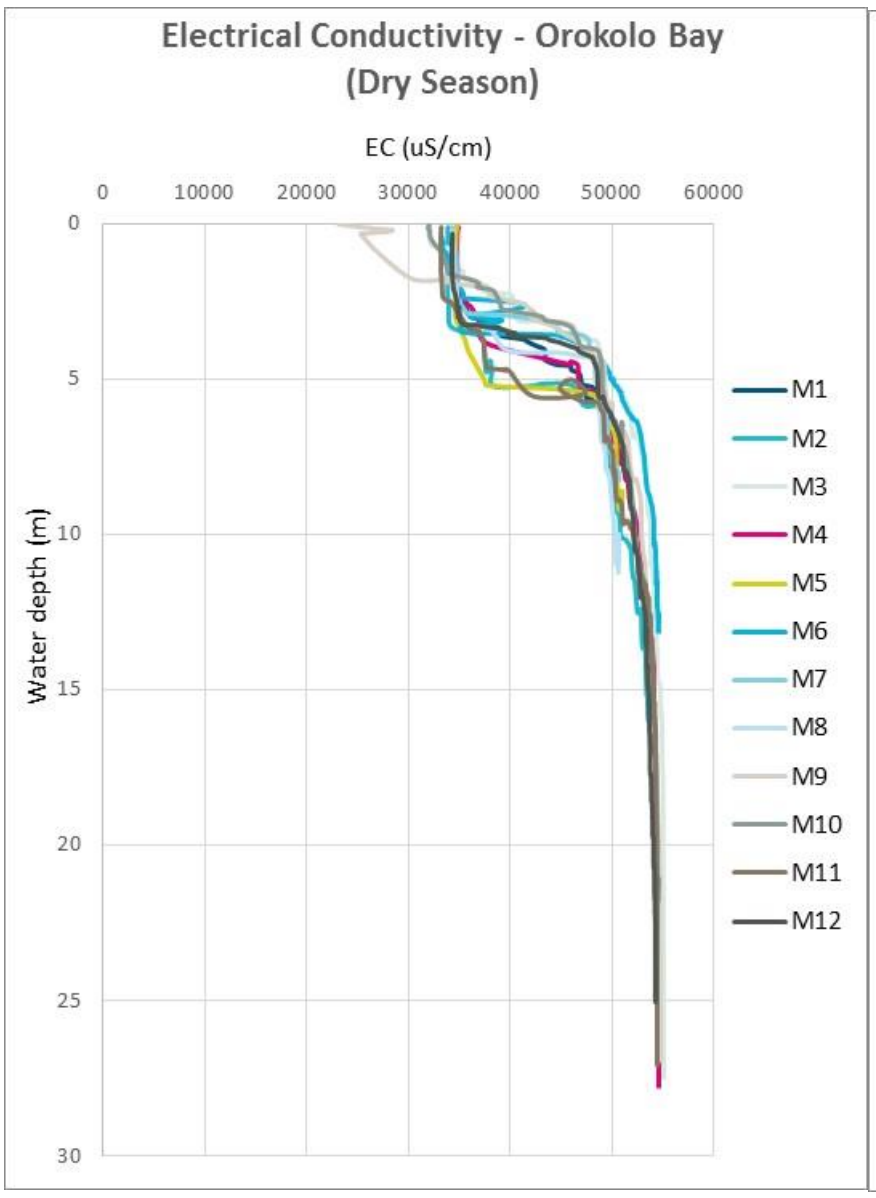
Site name	Depth Profile	Water Depth (m)	Temp		EC		Salinity		pH		Turbidity		Dissolved Oxygen			
			ºC		µS/cm		ppt		-		NTU		% sat		mg/L	
			Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
M13	Surface	0.3	27.3	30.4	53,324	48,932	35.1	31.8	8.01	8.22	1.7	2.1	98.7	101.3	6.4	6.4
	Middle	11.0	26.9	28.8	54,295	59,512	35.9	39.7	8.09	8.15	0.6	0.6	97.5	91.0	6.4	5.6
	Bottom	22.8	26.7	28.1	54,549	60,894	36.1	40.8	8.09	8.11	1.0	5.1	92.1	93.1	6.0	5.8
M14	Surface	0.3	27.1	30.5	54,273	51,218	35.8	33.5	8.08	8.22	0.1	1.1	98.5	101.7	6.4	6.3
	Middle	10.9	26.9	29.0	54,535	59,016	36.0	39.3	8.10	8.16	0.4	0.6	97.3	92.3	6.4	5.7
	Bottom	22.2	26.7	28.2	54,709	60,624	36.2	40.6	8.08	8.11	0.7	3.4	91.4	92.9	6.0	5.8
M15	Surface	0.3	27.5	29.9	53,872	48,214	35.5	31.3	8.03	8.06	1.0	2.5	97.8	99.7	6.3	6.4
	Middle	15.2	26.7	30.2	54,583	53,314	36.1	35.0	8.10	8.15	0.6	0.8	96.0	101.9	6.3	6.3
	Bottom	30.7	26.5	28.1	54,719	60,513	36.2	40.5	8.08	8.12	1.9	6.4	90.1	94.6	5.9	5.9
M16	Surface	0.3	27.2	29.4	54,211	48,499	35.8	31.5	8.05	7.99	0.4	1.0	98.4	98.4	6.4	6.3
	Middle	14.9	26.7	30.3	54,506	53,031	36.0	34.8	8.10	8.16	0.5	0.8	96.2	102.4	6.3	6.4
	Bottom	31.2	26.4	28.3	54,618	60,352	36.1	40.4	8.09	8.12	1.5	4.0	91.0	96.2	6.0	6.0
M17	Surface	0.3	-	28.7	-	54,067	-	35.6	-	8.03	-	8.0	-	98.7	-	6.3
	Middle	14.0	-	30.5	-	52,619	-	34.5	-	8.17	-	2.0	-	103.2	-	6.4
	Bottom	28.7	-	28.3	-	59,767	-	39.9	-	8.10	-	5.6	-	93.4	-	5.8
M18	Surface	0.3	-	28.4	-	54,138	-	35.7	-	7.95	-	0.8	-	97.3	-	6.2
	Middle	11.4	-	30.6	-	52,270	-	34.2	-	8.18	-	1.0	-	102.6	-	6.4
	Bottom	22.3	-	28.9	-	58,492	-	38.9	-	8.14	-	2.2	-	101.1	-	6.3
M19	Surface	0.3	-	27.9	-	54,416	-	35.9	-	8.08	-	0.8	-	97.4	-	6.3
	Middle	8.2	-	30.7	-	52,222	-	34.2	-	8.18	-	1.7	-	101.4	-	6.3
	Bottom	19.1	-	29.2	-	57,612	-	38.3	-	8.15	-	1.5	-	102.0	-	6.3
M20	Surface	0.3	26.8	30.1	54,951	52,678	36.4	34.6	8.05	8.21	0.1	0.7	94.2	98.5	6.2	6.2
	Middle	3.5	26.8	31.2	54,948	51,759	36.4	33.8	8.05	8.28	0.3	2.8	93.9	113.7	6.1	7.0
	Bottom	7.4	26.7	31.1	54,948	51,833	36.4	33.9	8.05	8.25	0.4	2.9	94.4	117.6	6.2	7.3

Site name	Depth Profile	Water Depth (m)	Temp		EC		Salinity		pH		Turbidity		Dissolved Oxygen			
			ºC		µS/cm		ppt		-		NTU		% sat		mg/L	
			Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
M21	Surface	0.3	26.8	30.9	54,606	51,513	36.1	33.7	8.09	8.24	0.6	1.0	94.5	111.0	6.2	6.9
	Middle	4.0	26.8	30.9	54,676	51,556	36.2	33.7	8.09	8.24	0.2	2.0	94.4	109.7	6.2	6.8
	Bottom	8.2	26.7	30.8	54,774	51,609	36.2	33.7	8.06	8.21	1.3	1.7	90.4	105.7	5.9	6.6
M22	Surface	0.3	26.7	29.0	54,827	53,496	36.3	35.2	8.05	8.09	0.3	0.8	96.3	100.0	6.3	6.3
	Middle	5.1	26.7	30.2	54,816	52,442	36.3	34.4	8.06	8.22	0.3	1.3	96.3	103.3	6.3	6.4
	Bottom	10.5	26.6	30.3	54,844	52,983	36.3	34.8	8.06	8.20	0.1	0.9	95.6	99.8	6.3	6.2
M23	Surface	0.3	-	29.4	-	53,661	-	35.3	-	8.15	-	3.1	-	98.4	-	6.2
	Middle	2.2	-	30.0	-	53,062	-	34.9	-	8.16	-	3.6	-	98.9	-	6.2
	Bottom	5.0	-	30.4	-	52,806	-	34.6	-	8.18	-	1.7	-	101.5	-	6.3
M24	Surface	0.3	27.0	29.5	54,403	53,999	35.9	35.6	8.11	8.07	0.7	3.6	99.8	99.8	6.5	6.3
	Middle	7.5	27.0	30.2	54,374	53,337	35.9	35.1	8.10	8.20	0.6	0.9	98.9	102.8	6.5	6.4
	Bottom	15.9	26.8	30.1	54,415	54,072	36.0	35.6	8.10	8.19	0.6	0.5	98.0	100.9	6.4	6.3
Guideline values (marine water)	***PNG ER***		-		-		-		-		-		-		*>5*	
	ANZECC		-		-		-		*8.0-8.4*		-		*>90*		-	

Note: Yellow highlighted cells indicate exceedance of the ANZECC guideline values, while orange highlighted cells indicate exceedance of the PNG ER guideline values







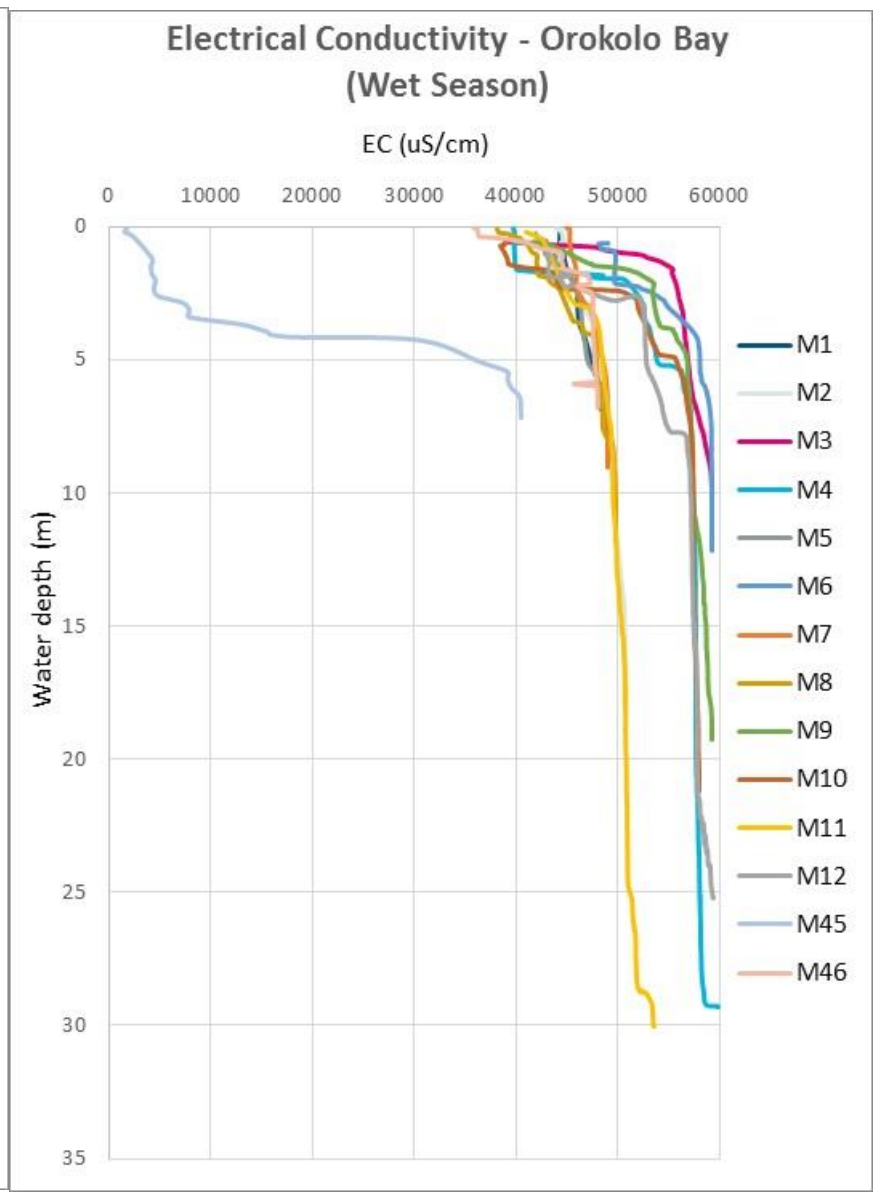
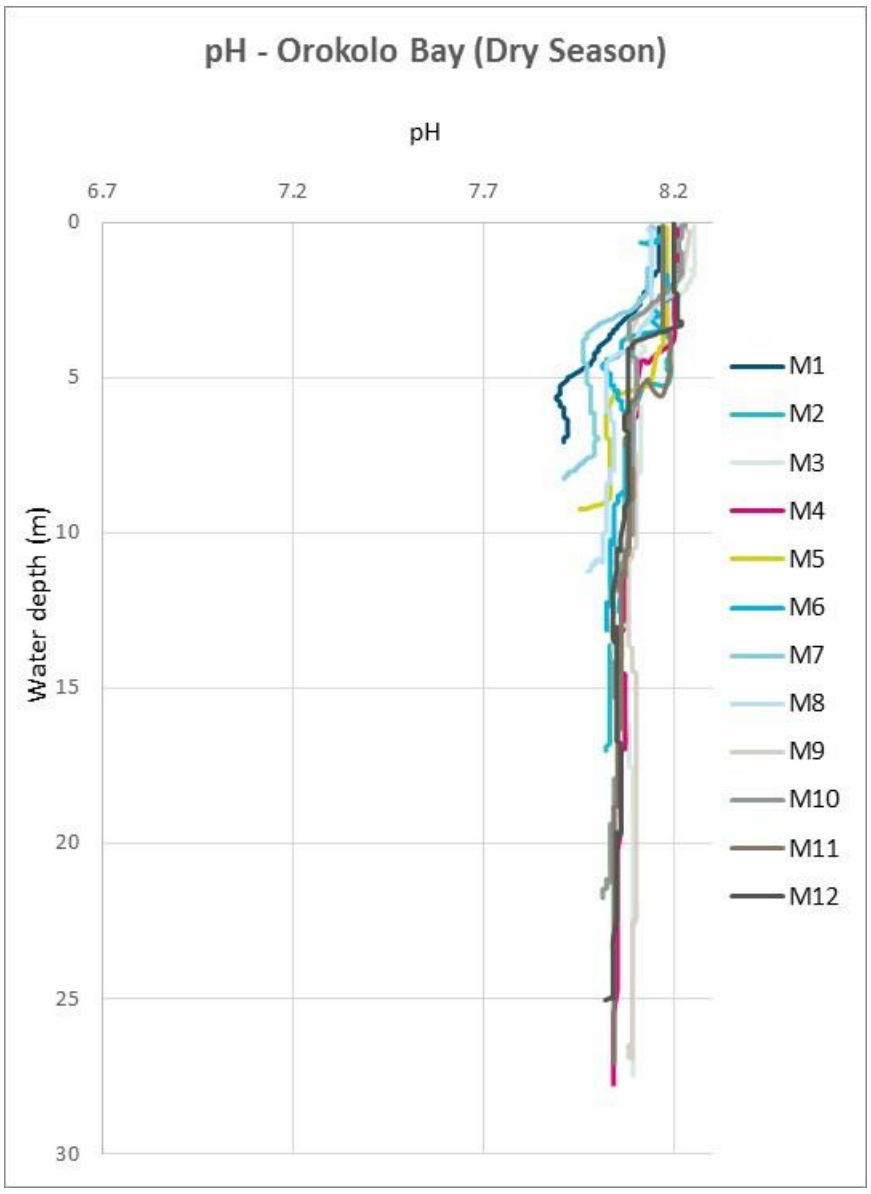
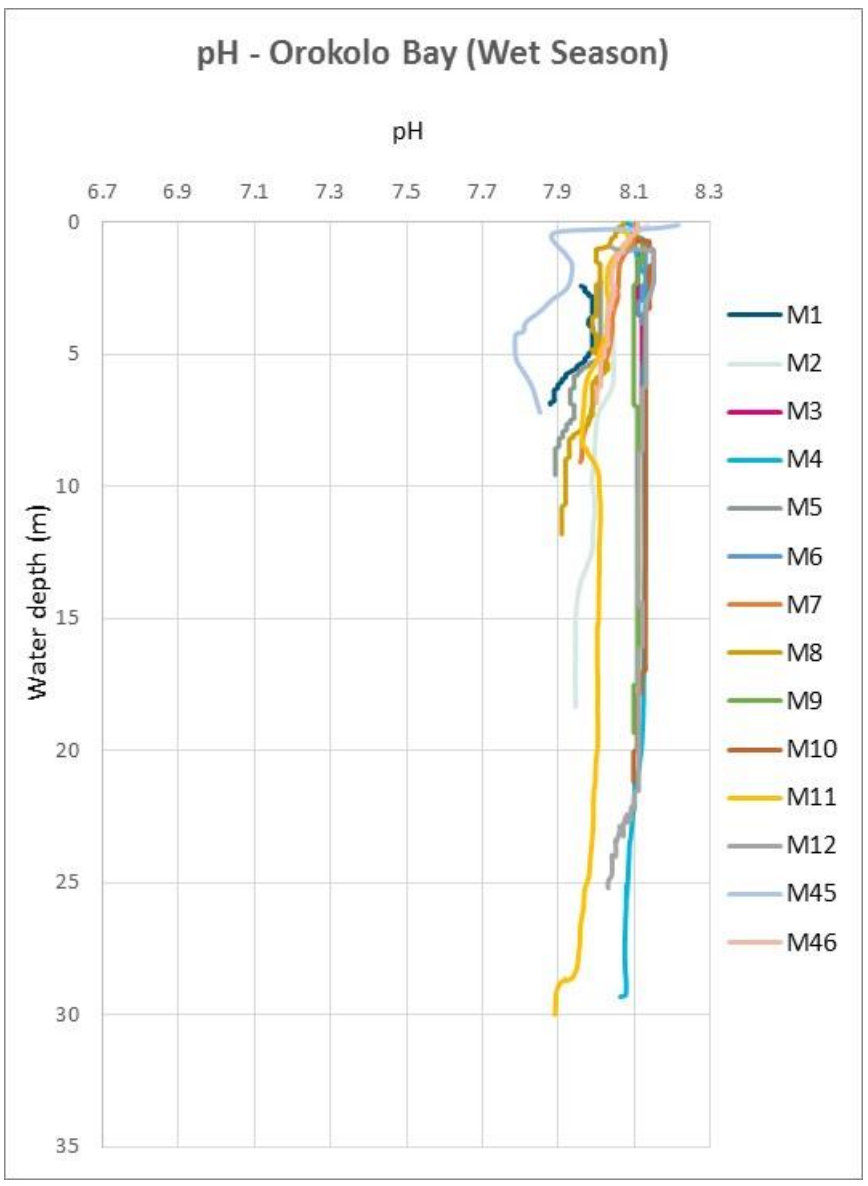
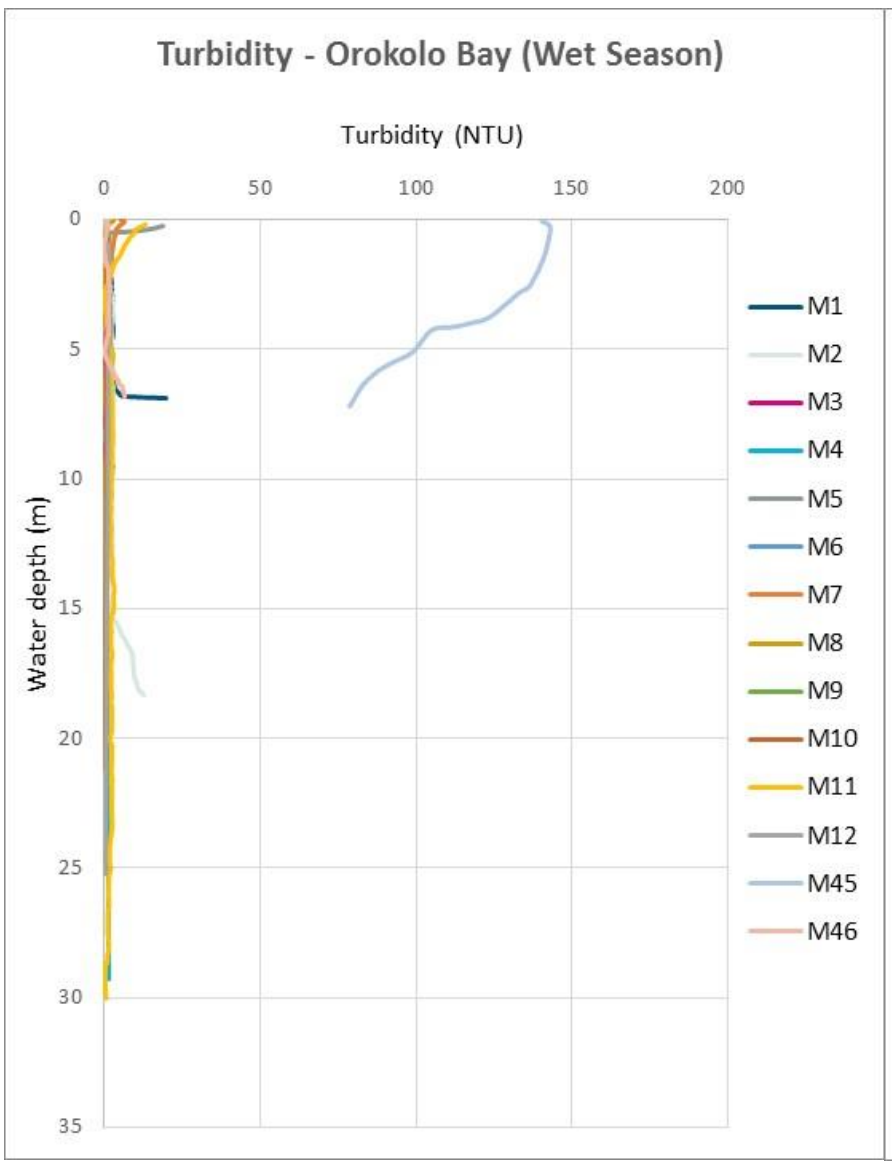


Figure 6-1 Orokolo Bay In Situ Water Quality Profiling Data – Temperature and Electrical Conductivity (Wet Season and Dry Season)







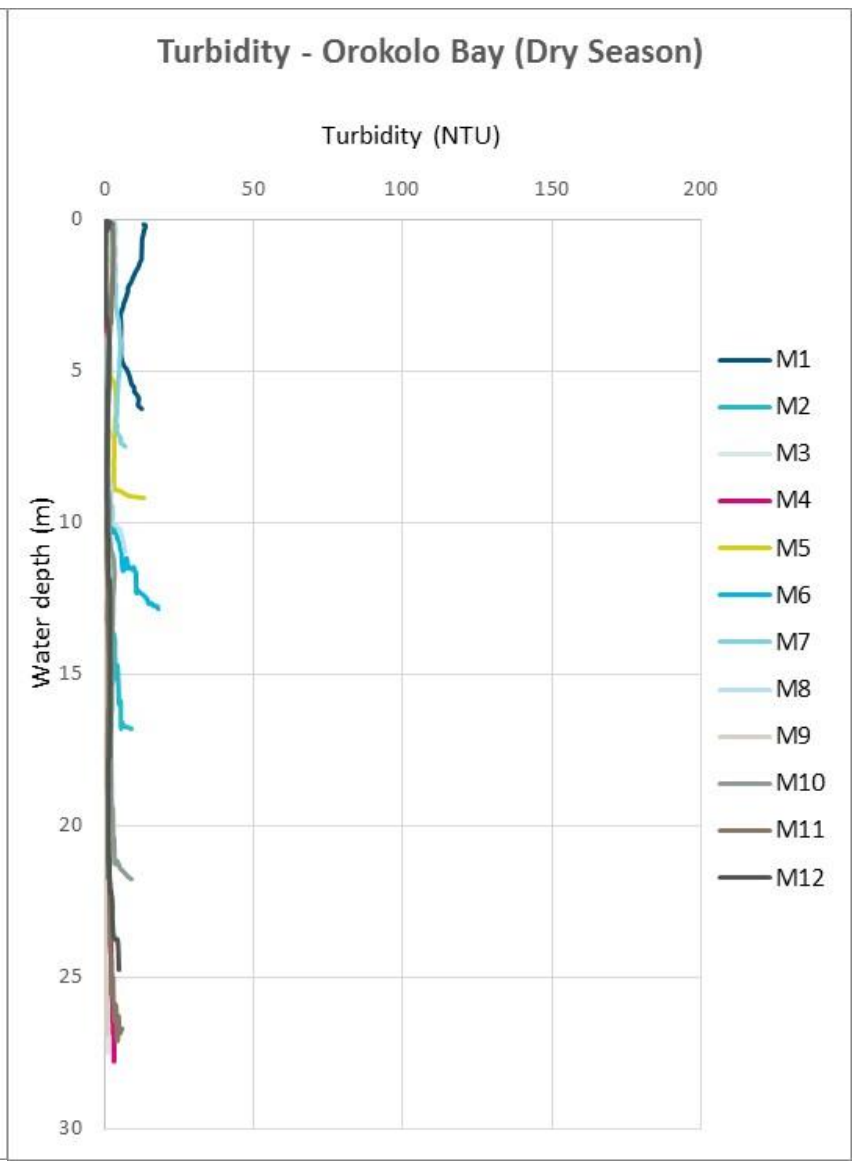


Figure 6-2 Orokolo Bay In Situ Water Quality Profiling Data – pH and Turbidity (Wet Season and Dry Season)

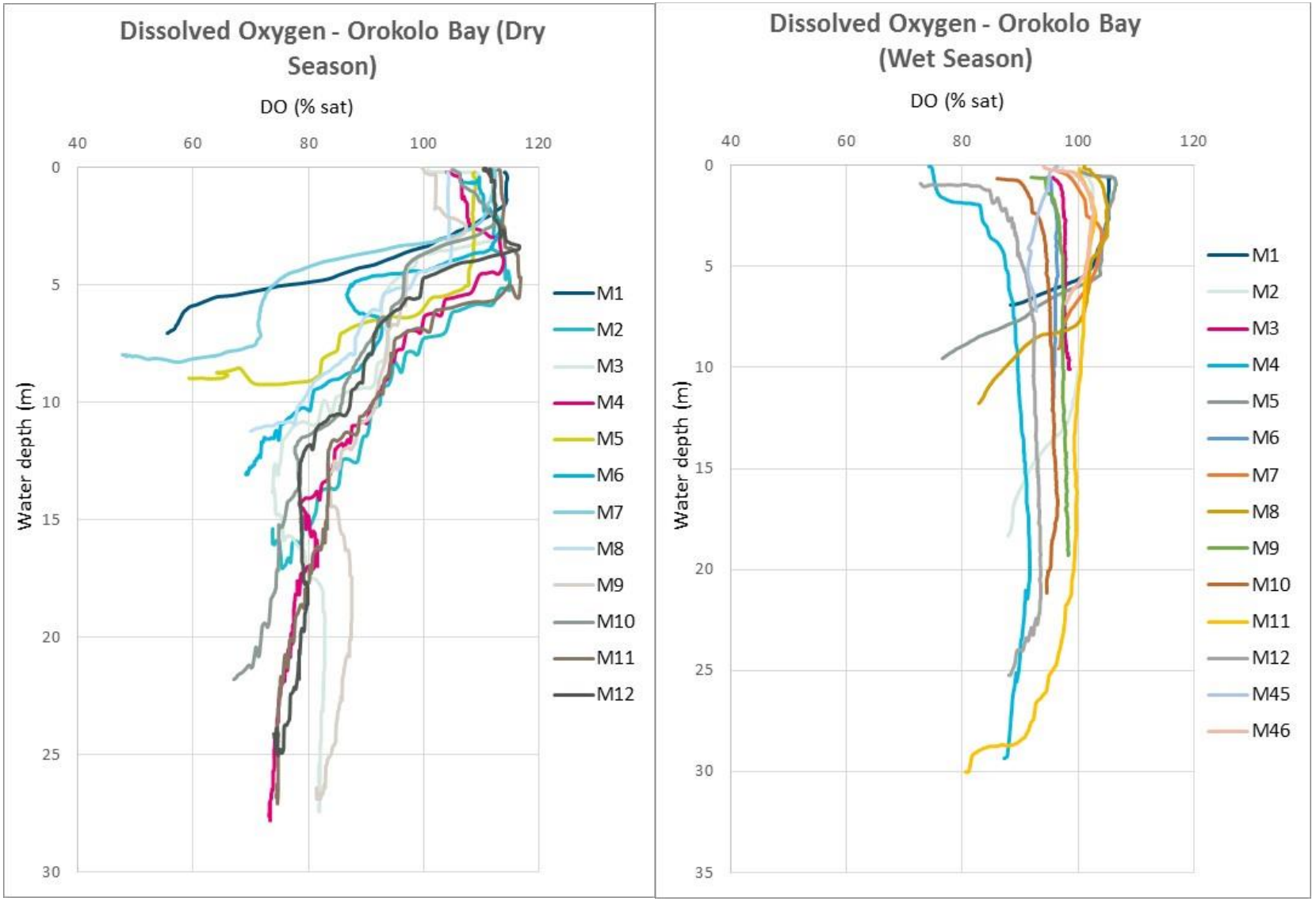


Figure 6-3 Orokolo Bay In Situ Water Quality Profiling Data – Dissolved Oxygen (Wet Season and Dry Season)

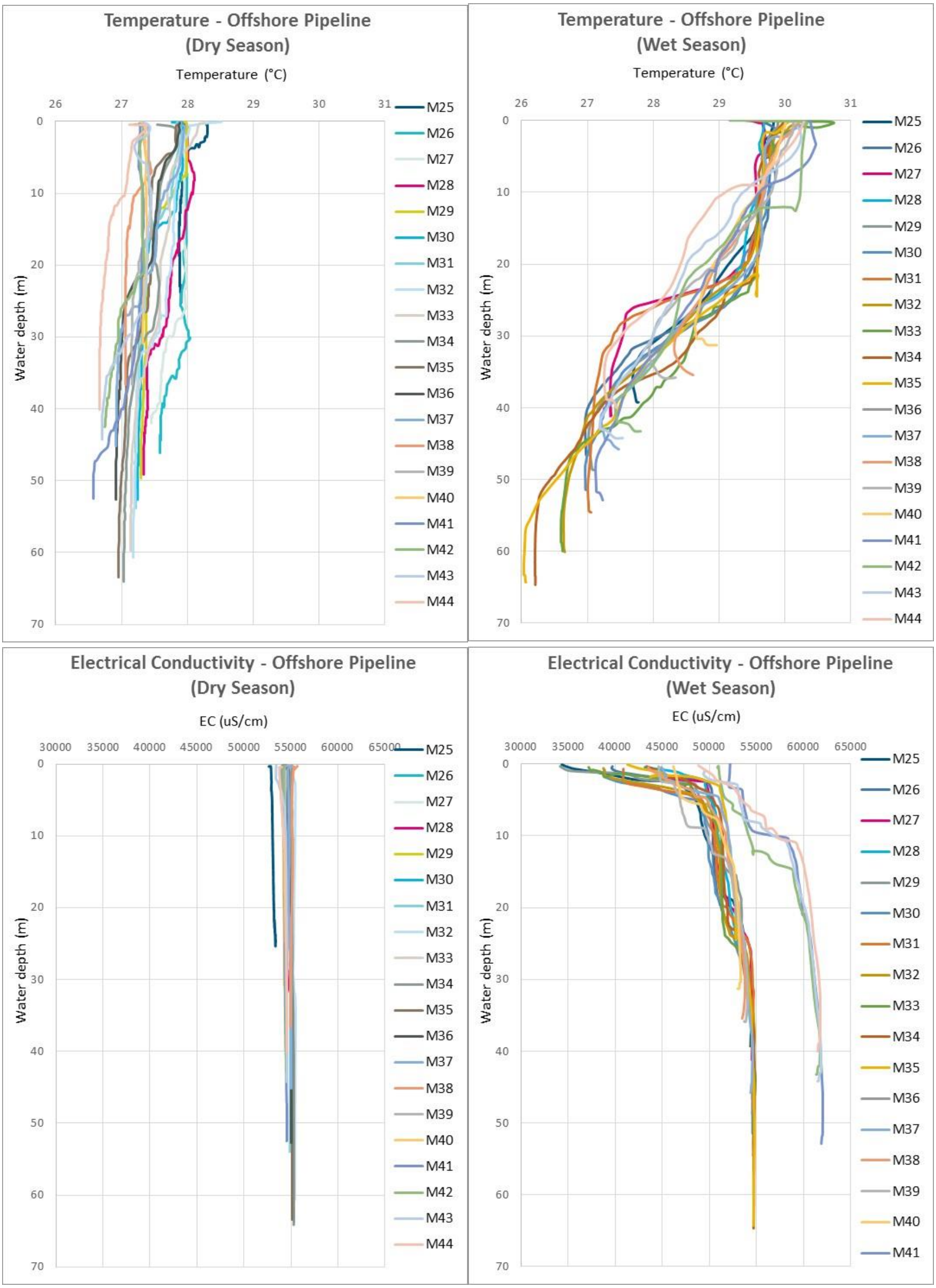
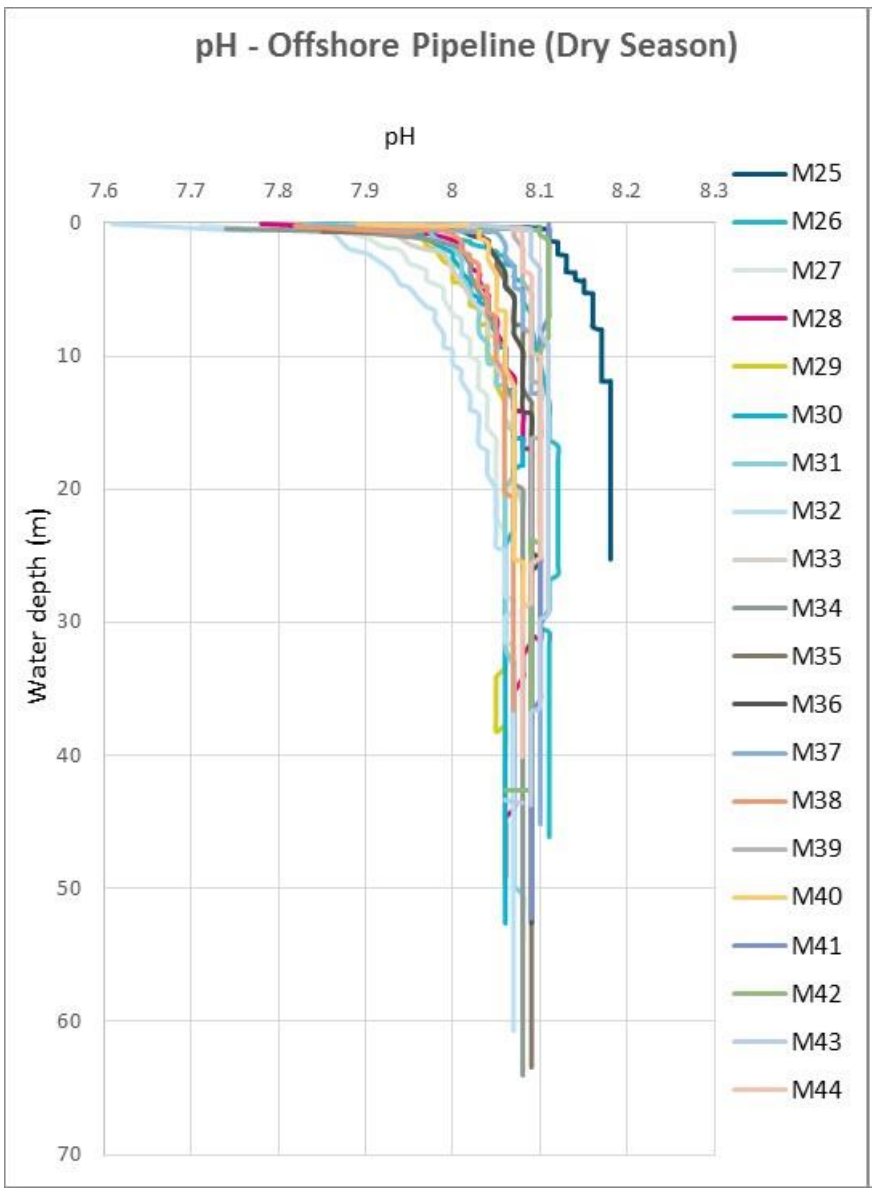
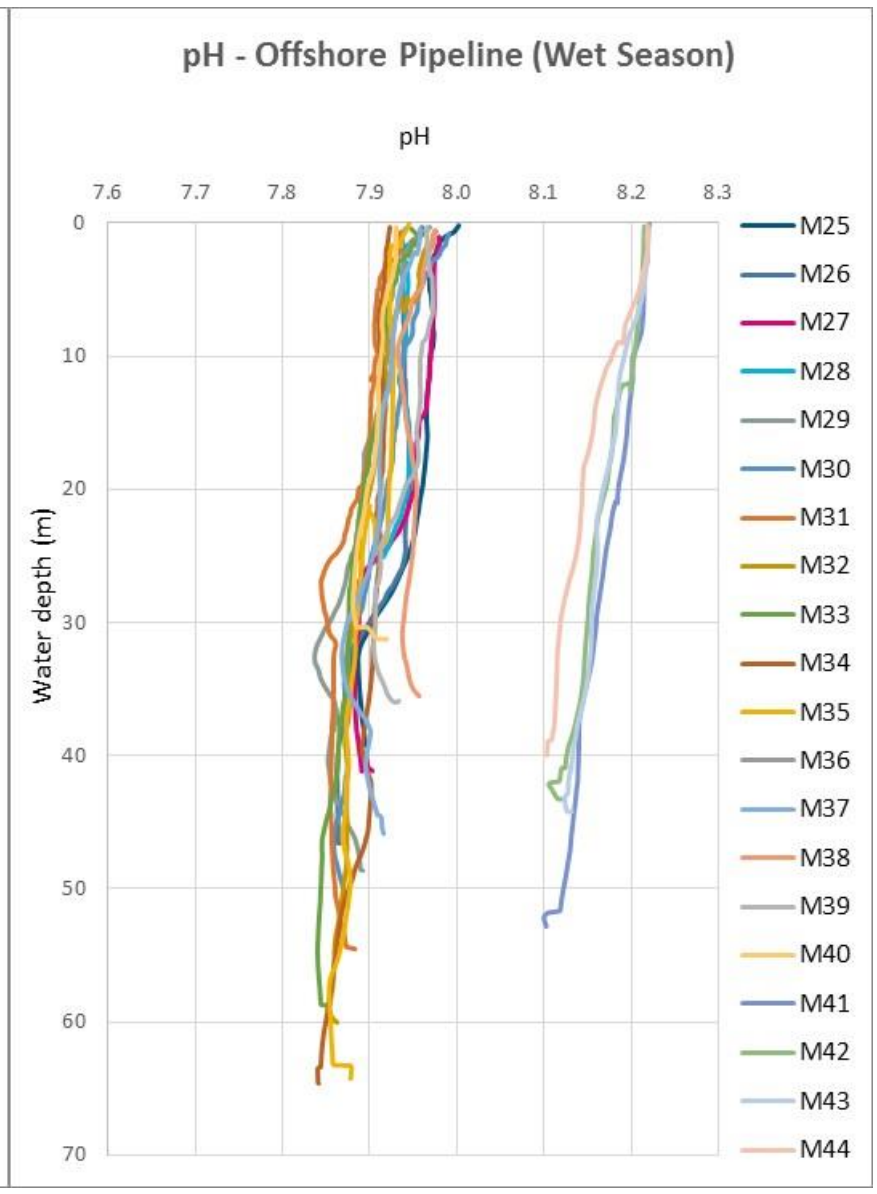
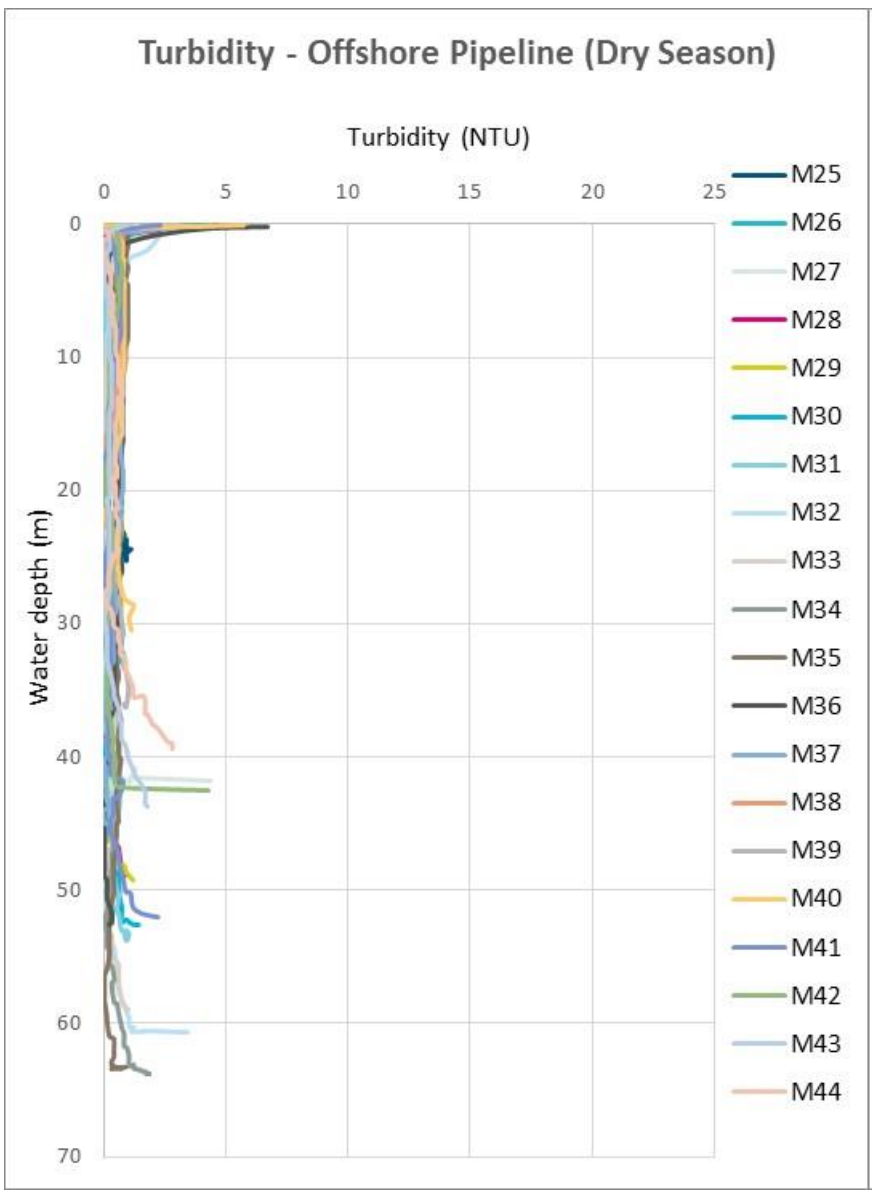


Figure 6-4 Offshore Export Pipeline Corridor In Situ Water Quality Profiling Data – Temperature and Electrical Conductivity (Wet Season and Dry Season)







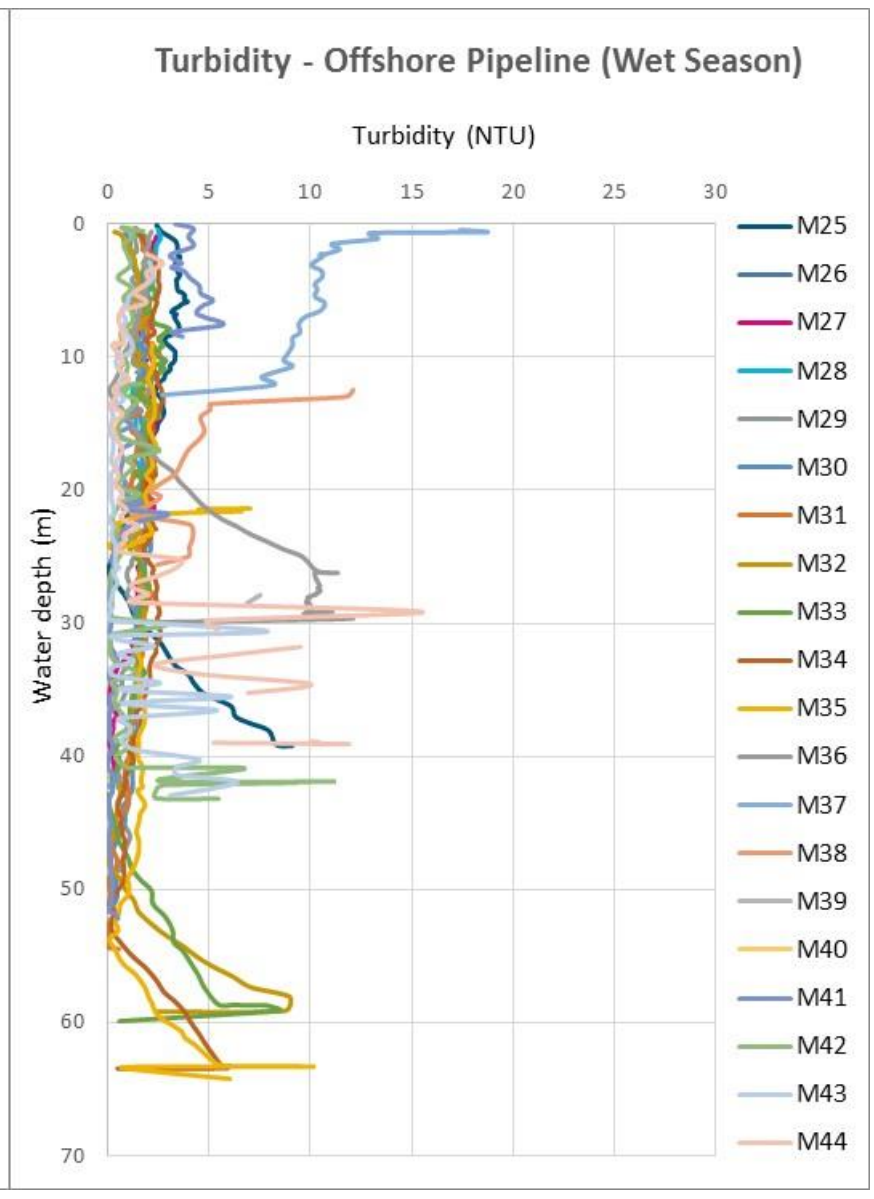


Figure 6-5 Offshore Export Pipeline Corridor In Situ Water Quality Profiling Data – pH and Turbidity (Wet Season and Dry Season)

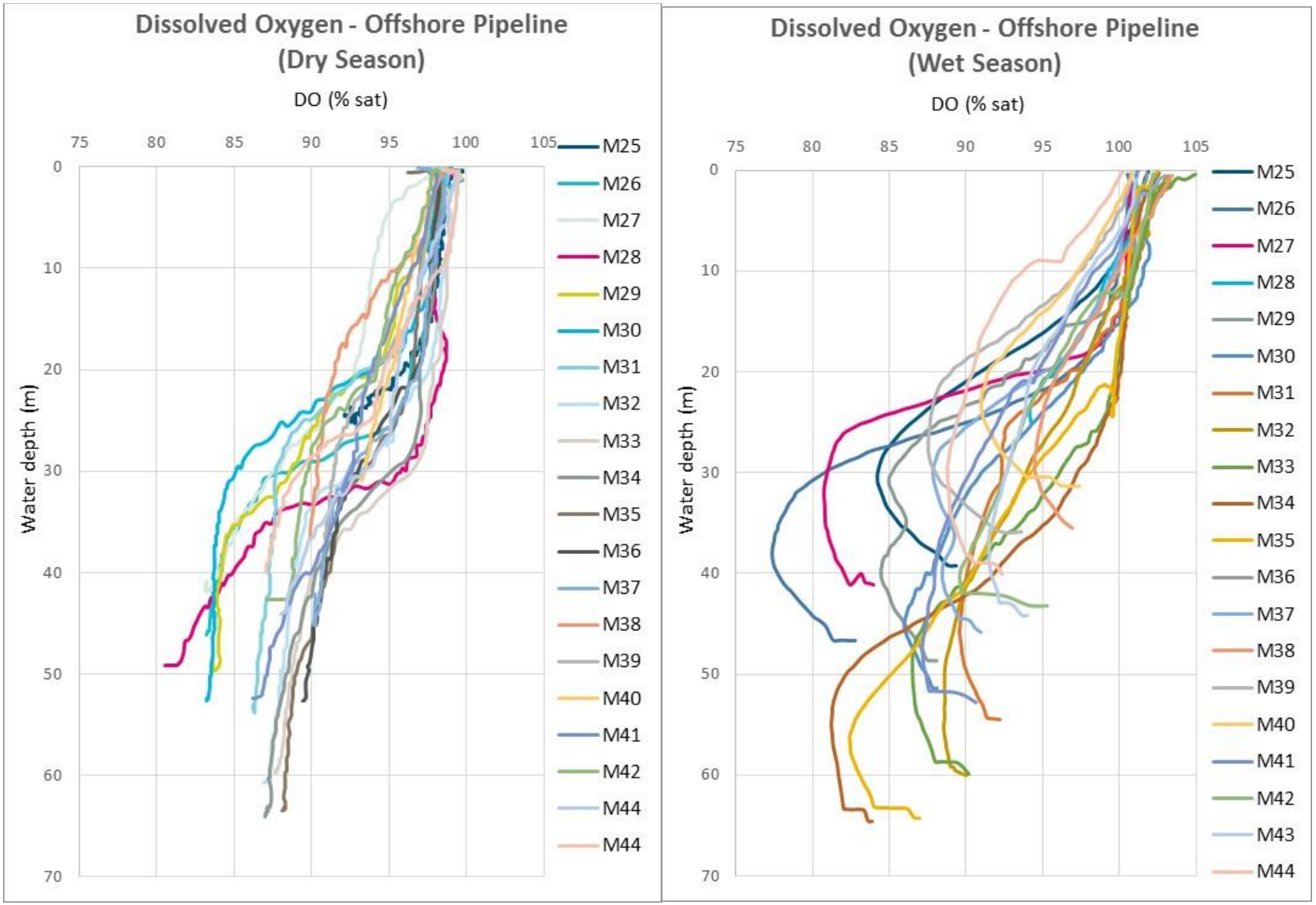


Figure 6-6 Offshore Export Pipeline Corridor In Situ Water Quality Profiling Data – Dissolved Oxygen (Wet Season and Dry Season)

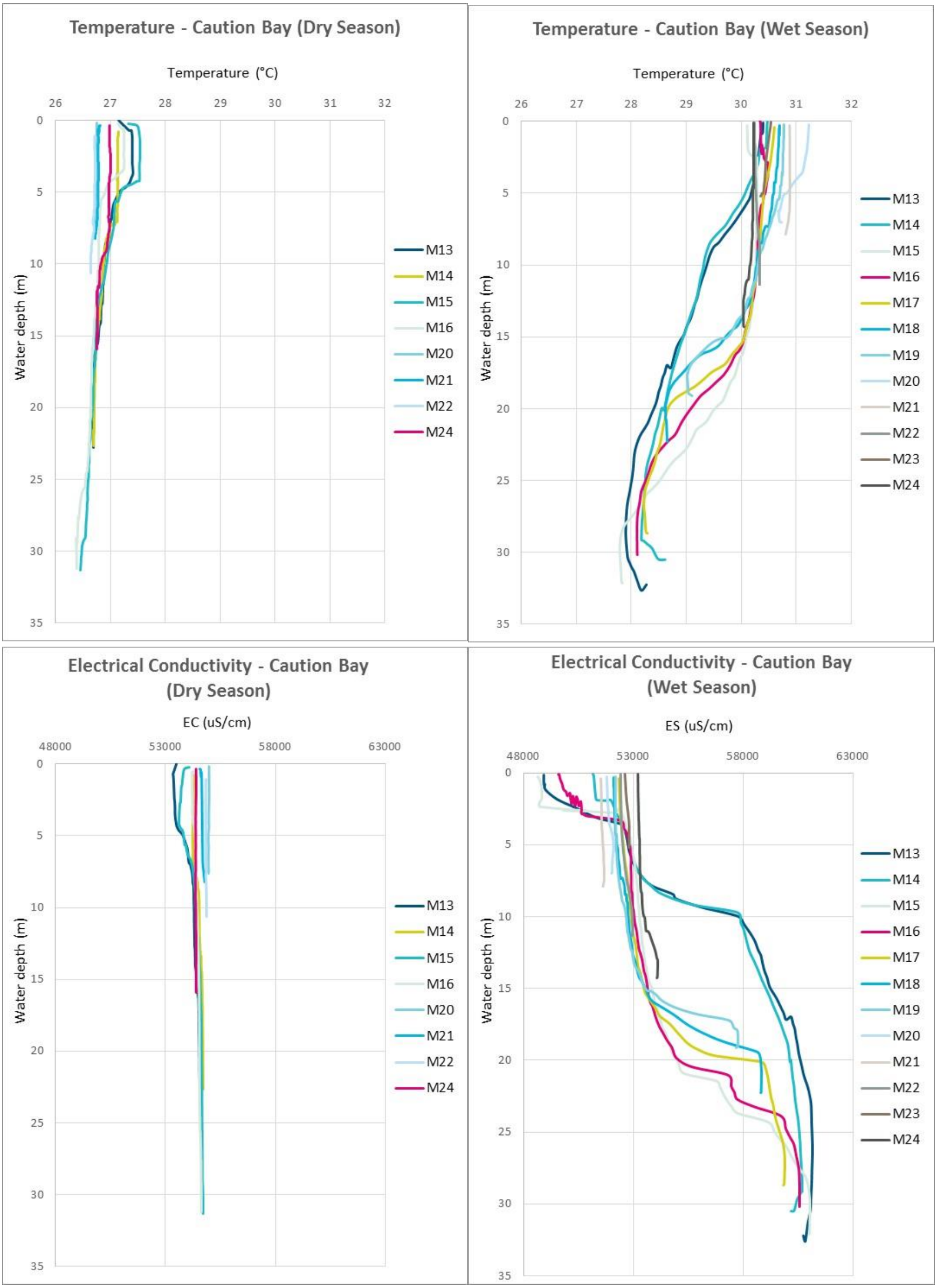


Figure 6-7 Caution Bay In Situ Water Quality Profiling Data – Temperature and Electrical Conductivity (Wet Season and Dry Season)

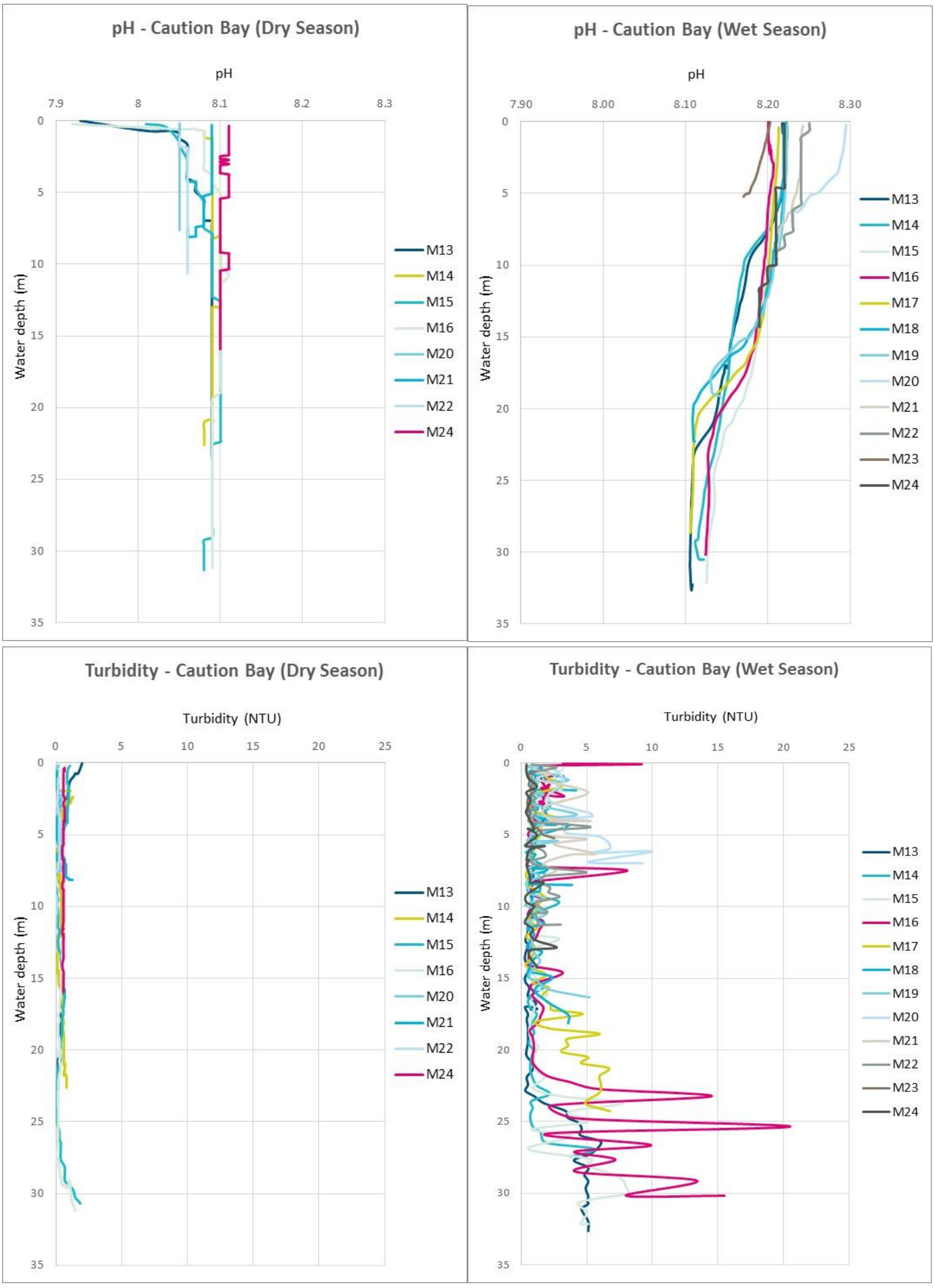


Figure 6-8 Caution Bay In Situ Water Quality Profiling Data – pH and Turbidity (Wet Season and Dry Season)

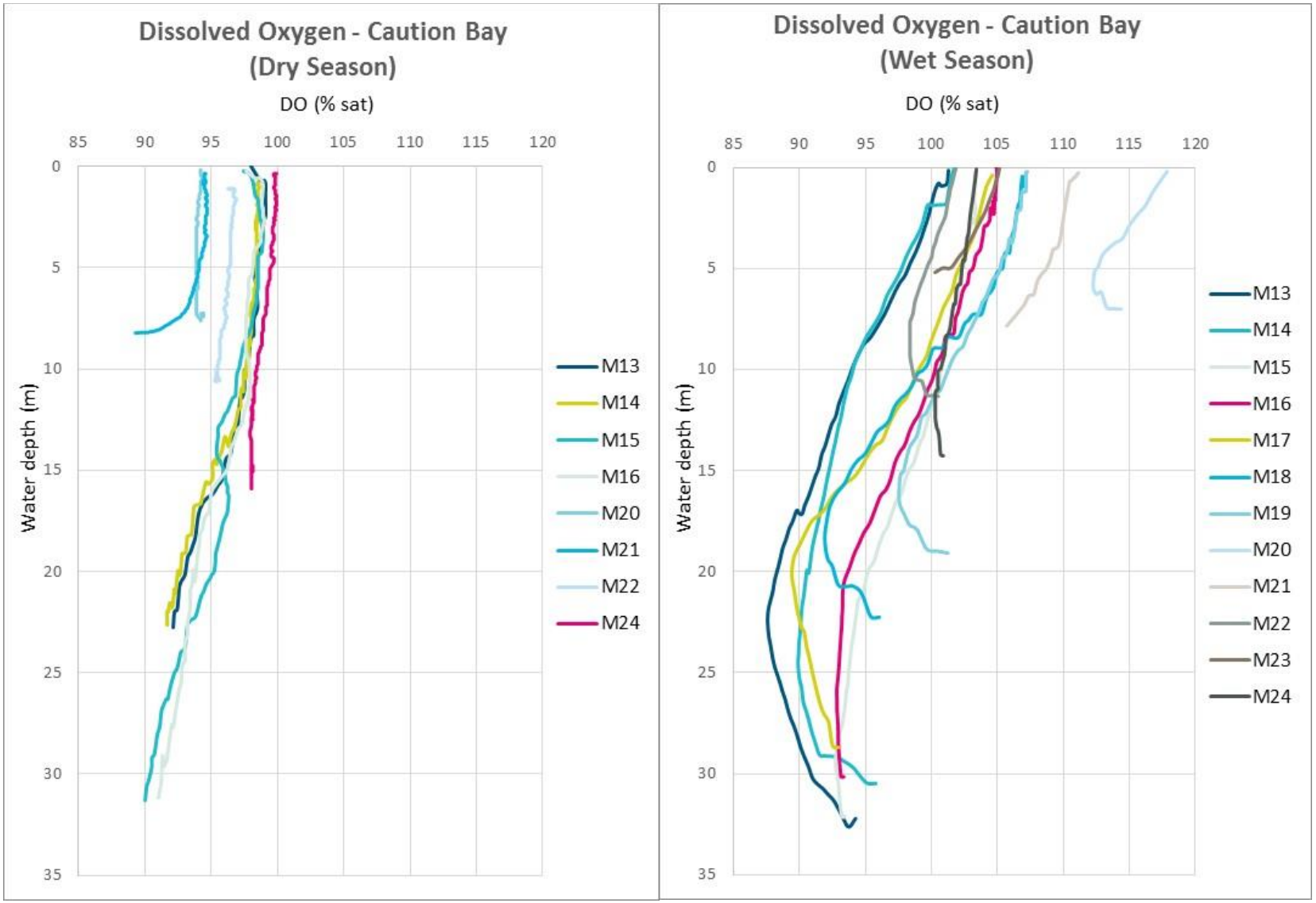


Figure 6-9 Caution Bay In Situ Water Quality Profiling Data – Dissolved Oxygen (Wet Season and Dry Season)

6.2.2 Continuous Water Quality Measurements

6.2.2.1 Turbidity

Dry Season

Turbidity data collected during the dry season survey using bottom-mounted instruments at Site A (near Site M8) and Site B (near Site M6 reef) (Figure 5-1) are presented in Figure 6-10, with minimum, median and maximum provided in Table 6-4. The turbidity data collected from the bottom-mounted instruments is generally much higher than the water quality profiling data due to the nature of profiling (though the entire water column) and timing of profiling (undertaken during calmer periods when turbidity was lower in the graphs below). The bottom-mounted instruments are also exposed to resuspended bed sediments mobilized in water currents and wave action.

Note that the turbidity sensor at Site A was not able to record turbidity measurements above 110 NTU due to this being set as the upper limit of measurement (indicated by sensor cap line in Figure 6-10). From the data collected at Site B, it is assumed that turbidity would have spiked much higher than 100 NTU, but likely less than 400 NTU (i.e. maximum value at Site B).

The data, in particular from Site B, indicates that turbidity is correlated with weather conditions. Spikes in turbidity were less evident during periods of calm winds and seas which were experienced early in the dry season survey (22 June to 28 June) compared with periods of higher winds and rougher seas which were experienced in the second week of the survey (29 June to 4 July).

Wet Season

Turbidity data collected during the wet season survey using bottom-mounted instruments at Site B (reef) and Site C (Purari River mouth) (Figure 5-1) are presented in Figure 6-11, with minimum, median and maximum provided in Table 6-4. Similar to the water profiling data, the instrument data indicates that turbidity was lower during the wet season survey compared to the dry season survey.

Turbidity at Site B (reef) generally remained below 20 NTU for the 10 days of deployment, with some occasional higher spikes. Weather conditions during the deployment period was generally calm, which is reflected in the turbidity data.

Turbidity at Site C (Purari River mouth) generally remained below 50 to 100 NTU for most of the period of deployment. However, during the last few days of deployment the turbidity spiked to about 450 NTU. Observations during the field trip were that this was due to a large slug of turbid water from rainfall in the Purari River catchment. This slug of turbid water was not picked up in the Site B turbidity data, indicating that freshwater flows from the Purari River were directed away from Site B, or otherwise were diluted or settled out by the time it reached this location.

Table 6-4 Comparison of Continuous Turbidity Data Across Sites and Seasons

Turbidity (NTU)	Site A (dry)	Site B (dry)	Site B (wet)	Site C (wet)
Minimum	14	4	1	2
Median	103	91	4	18
Maximum	110*	450	68	471

*110 NTU maximum due to sensor cap

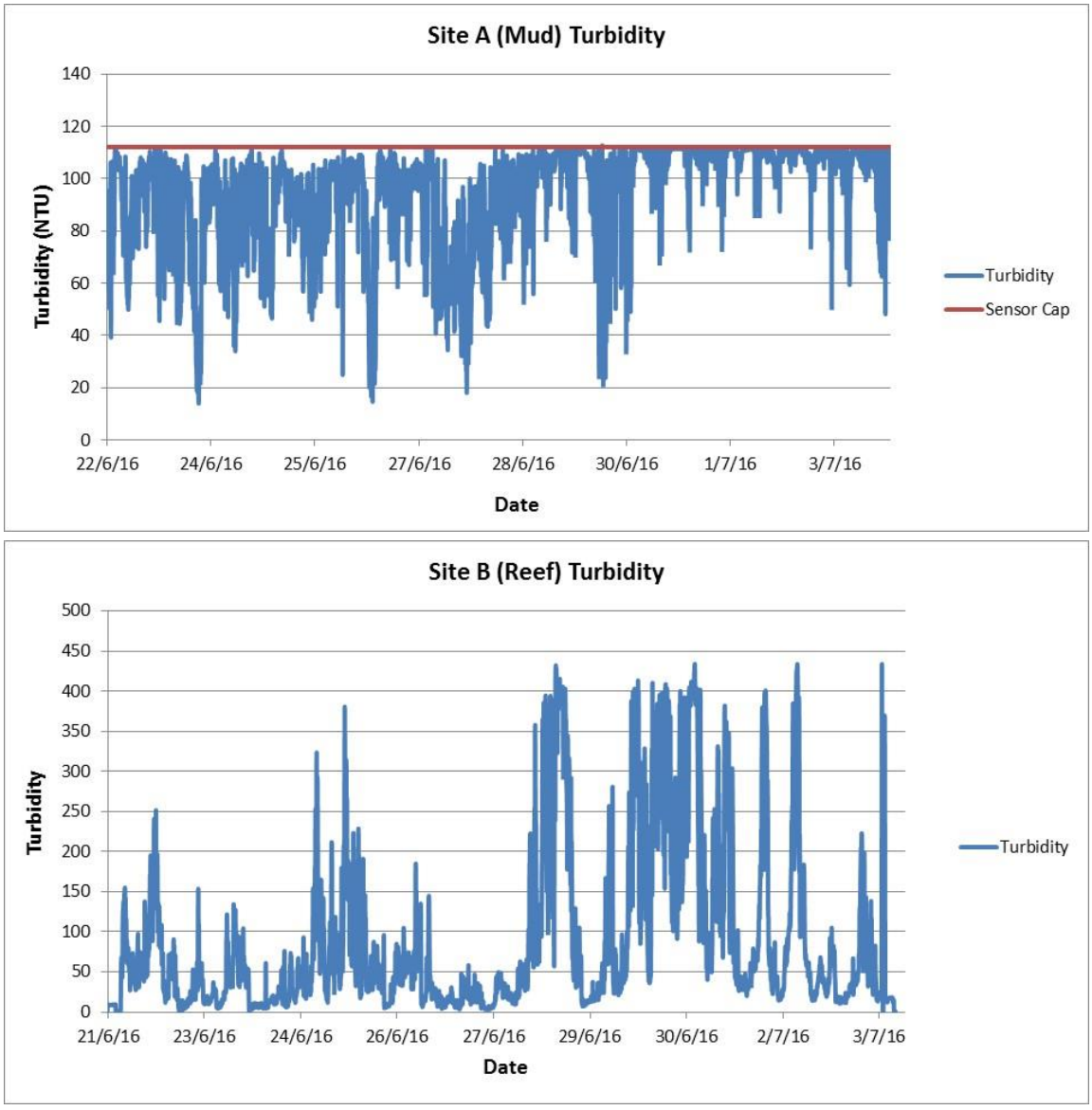


Figure 6-10 Dry Season Turbidity Data from Site A (top) and Site B (bottom)

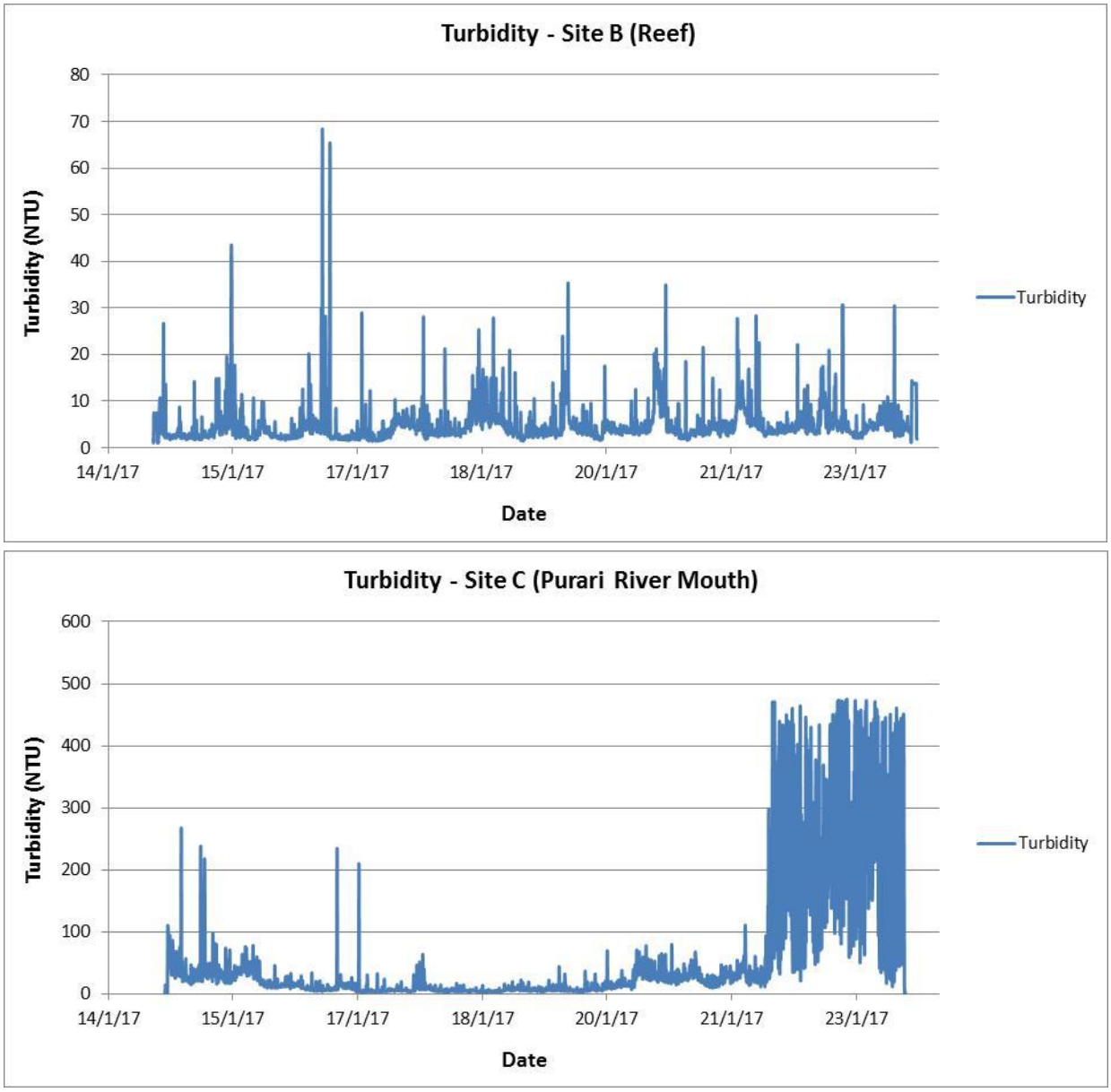


Figure 6-11 Wet Season Turbidity Data from Site B (top) and Site C (bottom)

6.2.2.2 Temperature, Conductivity, Depth

Dry Season

Coincident with turbidity instrument deployment, continuous measurements of temperature, EC and depth were collected at Site A (mud) and Site B (reef) during the dry season survey. The temperature and water depth data are presented in Figure 6-12, while the conductivity and water depth data are presented in Figure 6-13.

As shown in Figure 6-12 and Figure 6-13, the instruments were deployed on bottom-mounted frames on the sea floor in the following approximate water depths:

- ~12 m at Site A
- ~15 m at Site B.

The fluctuation in water depth in Figure 6-12 and Figure 6-13 is caused by the tide.

Figure 6-12 shows that water temperature was consistently around 28 to 29°C, with temperature decreasing slightly at both sites towards the end of the deployment period.

Figure 6-13 indicates that conductivity in lower water layers was variable at both sites, but was within a range of approximately 54,000 µS/cm to 57,000 µS/cm. The slight fluctuations in conductivity at depth may be the result of occasional mixing of less saline surface waters during varying wind or riverine flow events.

The water depth data indicates that the tidal range during the dry season survey was approximately 1 m during the neap tides and just over 2 m during the spring tides.

Wet Season

Temperature, conductivity and depth data was collected at Site B (reef) and Site C (Purari River mouth) during the wet season survey. The temperature and water depth data is presented in Figure 6-14, while the conductivity and water depth data is presented in Figure 6-15.

As shown in Figure 6-14 and Figure 6-15, the instruments were deployed on bottom-mounted frames on the sea floor in the following approximate water depths:

- ~10 m at Site C.
- ~18 m at Site B.

Figure 6-14 indicates that was water temperature maintained around 29 to 30°C at the Purari River mouth (Site C) and around 28.5 to 29.5°C in the deeper waters at Site B.

Figure 6-15 indicates that conductivity of bottom waters was slightly lower at the Purari River mouth (Site C) compared to Site B, and was variable at both sites. A decrease in EC at Site C coincided with the turbid freshwater flows in the Purari River as a result of rainfall higher up in the Purari catchment (as described above).

Similar to the dry season survey, the water depth data indicates that the tidal range during the wet season survey was approximately 1 m during the neap tides and approximately 2 m during the spring tides.

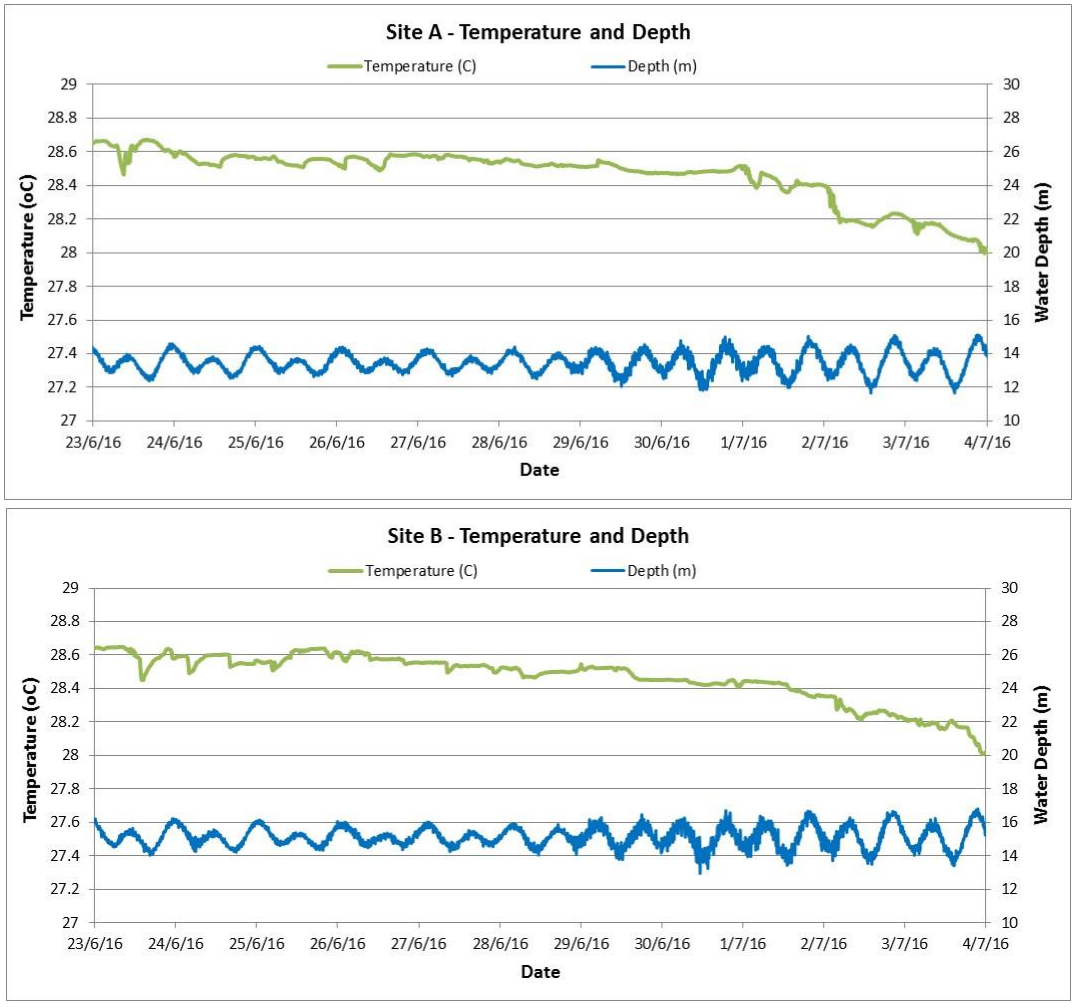


Figure 6-12 Dry Season Temperature and Water Depth Data from Site A (top) and Site B (bottom)

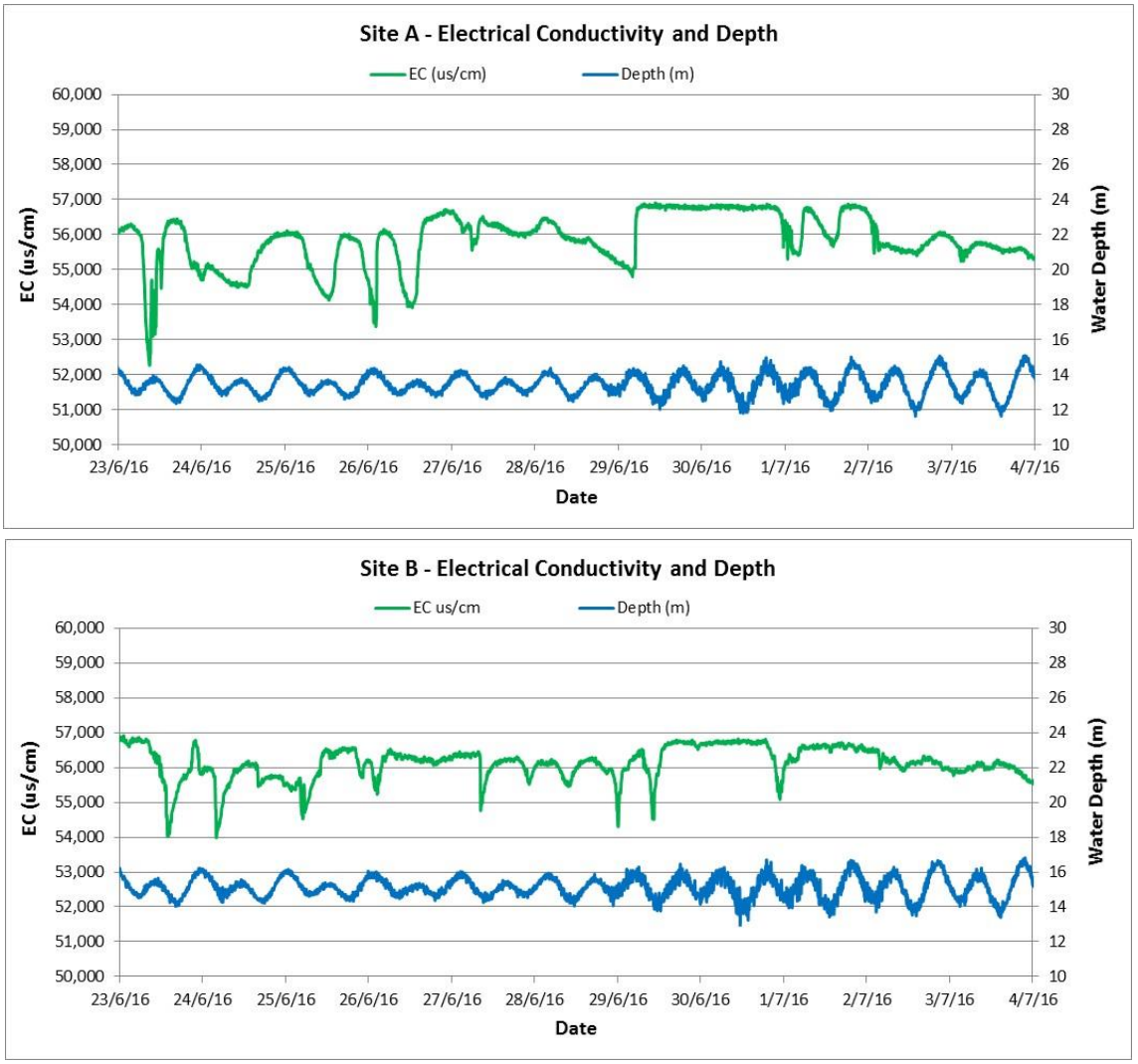


Figure 6-13 Dry Season Electrical Conductivity and Water Depth Data from Site A (top) and Site B (bottom)

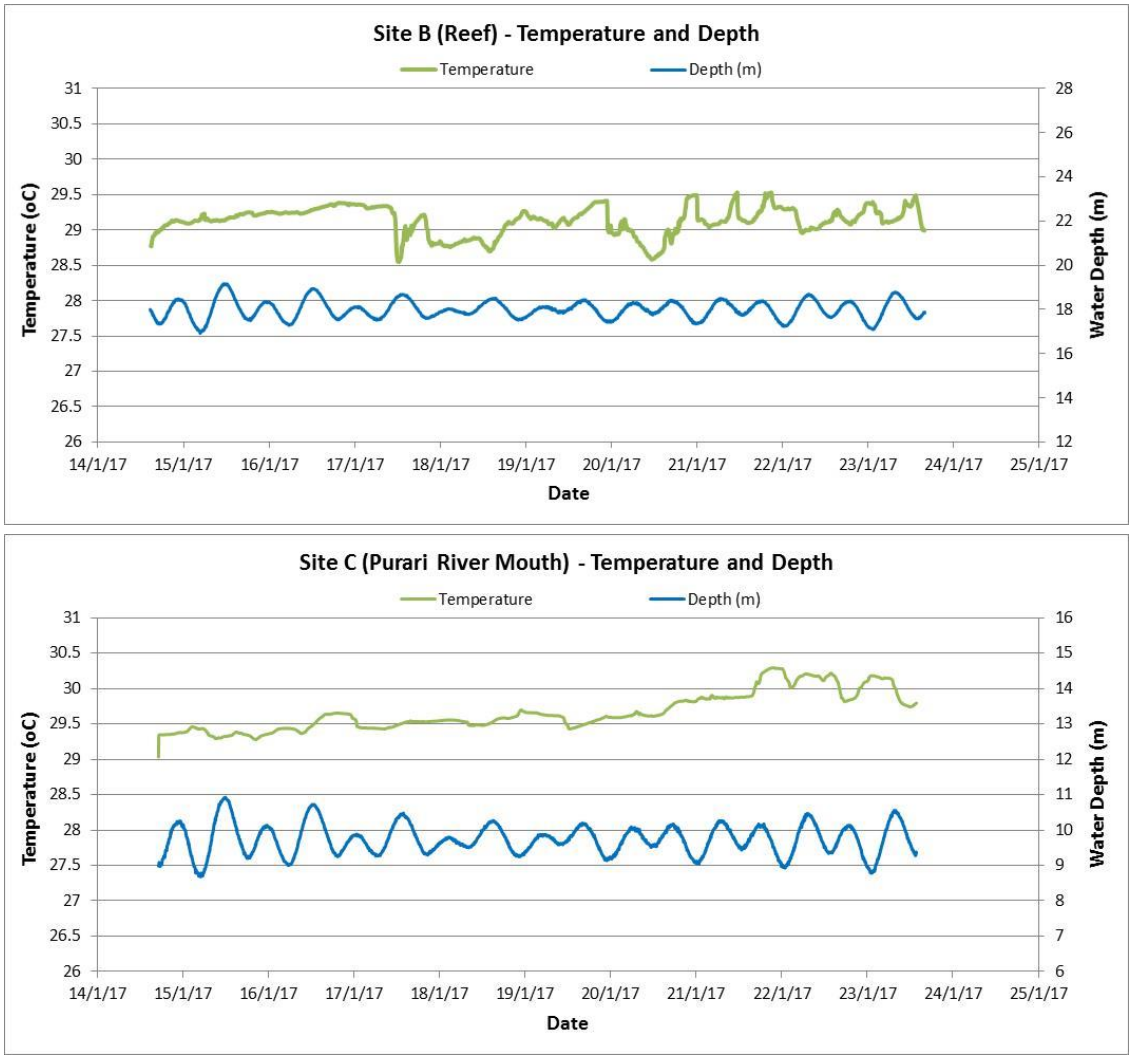


Figure 6-14 Wet Season Temperature and Water Depth Data from Site B (top) and Site C (bottom)

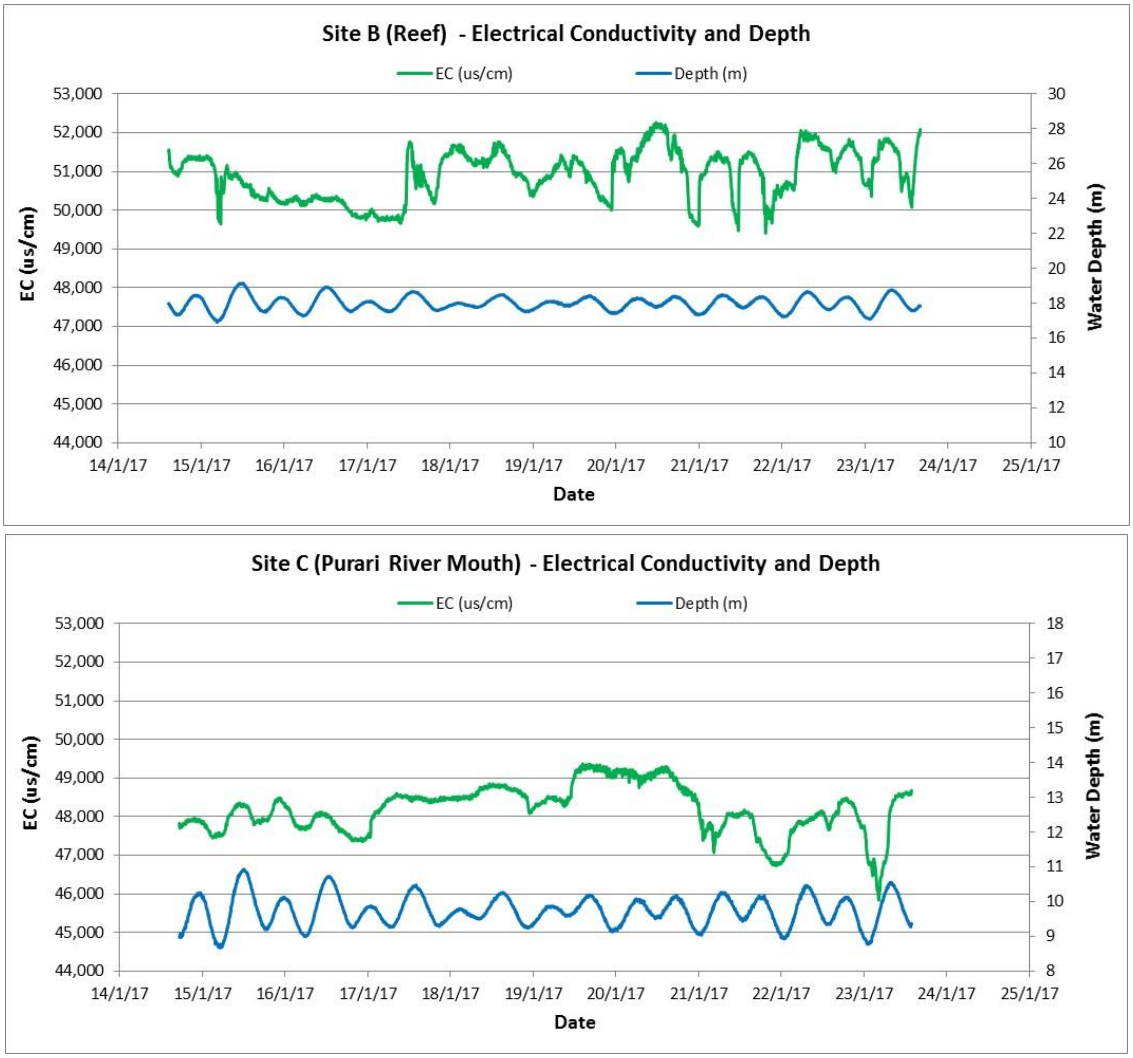


Figure 6-15 Wet Season Electrical Conductivity and Water Depth Data from Site B (top) and Site C (bottom)

6.2.3 Laboratory Data

Laboratory results from samples collected during the June-July 2016 and January 2017 surveys are presented in the following sections, and laboratory analysis reports are included in Appendix D.

6.2.3.1 Metals and Metalloids

Total and dissolved metals/metalloids data from samples collected in June-July 2016 and January 2017 are presented in Table 6-5 to Table 6-8. Water quality guideline values for dissolved metals/metalloids (filtered <0.45 µm) are included at the bottom of these tables, and dissolved concentrations that exceed any of these guideline values are highlighted.

NOTE: As the guideline values are relevant to dissolved concentrations only, total concentrations (which are sometimes substantially higher than dissolved fractions) have not been compared to the guideline values. Laboratory limits of reporting (LORs) have also been included for reference purposes.

The metals/metalloids results can be summarized as follows:

- Total and dissolved concentrations of metals/metalloids were relatively consistent between the dry season and wet season surveys and between sites along the offshore export pipeline corridor, including within Orokolo Bay and Caution Bay.
- Total concentrations were similar to dissolved concentrations for most metals/metalloids, except for aluminum (Al) and iron (Fe) which generally had higher total concentrations than dissolved concentrations.
- Dissolved concentrations of all metals/metalloids were below the ANZECC and PNG ER guideline values at all sites during both surveys, with the exception of the following:
    - Dissolved copper in surface waters at Site M6 (2 µg/L) in Orokolo Bay during the dry season survey which slightly exceeded the ANZECC guideline value (1.3 µg/L), but was below the PNG ER (30 µg/L) guideline value. Note that this concentration (2 µg/L) is close to the limit of reporting (1 µg/L), where relatively large variation in analysis results can be expected to occur (i.e., if the sample was re-analyzed it would be very possible that the result would be less than the limit of reporting and the guideline value).
    - Dissolved mercury in bottom waters at Site M10 (0.2 µg/L) in Orokolo Bay during the wet season survey which slightly exceeded the ANZECC guideline value (0.1 µg/L) and was equal to the PNG ER guideline value (0.2 µg/L). This concentration is also close to the limit of reporting (0.1 µg/L), where relatively large variation in analytical results can be expected to occur.
- Dissolved concentrations of all metals/metalloids were relatively consistent between sites, with most sites recording concentrations below the laboratory LOR. The exception to this was strontium (Sr), which is a natural constituent of seawater and therefore typically found in high concentrations in the marine environment. Strontium was found in lower concentrations in surface waters at Orokolo Bay sites during the dry season, likely due to dilution from freshwater flows from the Purari River. This is evident in surface waters in Orokolo Bay during the dry season having lower EC/salinity (Section 6.2.1). During the wet season, strontium and EC were consistent through the water column at sites in Orokolo Bay, providing further evidence that the freshwater surface lens was not as evident in the wet season survey (i.e. stratification of the water column was less pronounced - Section 6.2.1).

- In general, concentrations of metals/metalloids were relatively similar in samples collected in surface, middle and bottom layers of the water column. The exceptions were elevated total aluminum and iron concentrations in some bottom samples at Orokolo Bay. These bottom samples also had higher suspended sediment concentrations, so it is not unusual that aluminum and iron are elevated as these metals are naturally high in sediments. This is illustrated in the much higher aluminum and iron concentrations at Site M45 at the mouth of the Purari River, which also had high turbidity and suspended sediments.

Table 6-5 Orokolo Bay – Total Metals/Metalloids Data (Dry Season and Wet Season)

Site	Depth Profile (m)	Al		As		Ba		Cd		Cr		Co		Cu		Fe		Hg		Pb		Ni		Sr		Sn		V		Zn	
		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	
		Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
Total metals/metalloids *																															
M1-S	Surface (0.3)	801	17	0.9	1.3	11	11	<0.2	<0.2	1.2	<0.5	0.5	<0.2	2	<1	920	29	<0.1	<0.1	<0.2	<0.2	1.4	<0.5	4,300	6,200	<5	<5	3.7	2.9	<5	<5
M1-D	Bottom (6.3)	432	288	1.3	1.1	8	8	<0.2	<0.2	0.5	0.7	0.3	0.3	4	<1	473	360	<0.1	<0.1	<0.2	<0.2	<0.5	1	6,390	6,640	<5	<5	2.1	3.1	5	<5
M2-S	Surface (0.3)	53	10	0.7	2.1	11	11	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	1	<1	67	20	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	4,090	6,730	<5	<5	1.1	2.7	<5	<5
M2-D	Bottom (16.6)	394	<5	1.5	2	6	7	<0.2	<0.2	<0.5	<0.5	0.2	<0.2	2	<1	429	12	<0.1	<0.1	0.4	<0.2	0.5	<0.5	7,470	6,800	<5	<5	1.9	2.6	<5	<5
M3-S	Surface (0.3)	39	11	0.8	1.1	10	9	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<1	<1	65	23	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	3,850	5,630	<5	<5	0.9	2.4	<5	<5
M3-M	Middle (13.1)	19	<5	1.8	1.6	5	7	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<1	<1	33	9	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,050	6,800	<5	<5	<0.5	2.3	<5	<5
M3-D	Bottom (27.4)	65	<5	1.8	1	5	6	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<1	<1	95	24	<0.1	<0.1	<0.2	<0.2	<0.5	0.8	7,860	7,020	<5	<5	0.8	2.5	<5	<5
M4-S	Surface (0.3)	9	34	0.9	0.9	11	16	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	2	<1	15	50	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	4,300	5,370	<5	<5	0.6	2.8	<5	<5
M4-M	Middle (13.0)	25	<5	0.6	1.3	7	6	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	2	<1	46	60	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	4,600	6,810	<5	<5	<0.5	2.9	<5	<5
M4-D	Bottom (27.5)	137	19	1.7	1.7	4	6	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<1	<1	174	42	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,160	6,840	<5	<5	0.9	3	<5	<5
M5-S	Surface (0.3)	25	5	<0.5	1.5	7	11	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<1	<1	104	15	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	4,490	6,080	<5	<5	<0.5	3	<5	<5
M5-D	Bottom (8.9)	62	34	1.3	1.3	7	7	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<1	<1	93	65	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	6,390	6,540	<5	<5	<0.5	3.1	<5	<5
M6-S	Surface (0.3)	36	27	0.7	2.1	11	13	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	2	<1	50	45	<0.1	<0.1	<0.2	0.3	<0.5	<0.5	4,310	5,840	<5	<5	0.9	5.4	<5	<5
M6-D	Bottom (12.3)	487	16	1.4	1.4	6	8	<0.2	<0.2	0.7	<0.5	0.4	<0.2	<1	<1	591	32	<0.1	<0.1	<0.2	<0.2	0.9	<0.5	7,000	6,760	<5	<5	1.5	3.4	<5	<5
M7-S	Surface (0.3)	150	25	0.7	1.4	10	8	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<1	<1	198	41	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	4,260	6,220	<5	<5	1.1	2	<5	<5
M7-D	Bottom (7.5)	116	163	1	1.6	7	8	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<1	<1	162	240	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	5,920	6,870	<5	<5	0.6	2.9	<5	<5
M8-S	Surface (0.3)	37	<5	0.8	1.9	11	8	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<1	<1	46	12	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	4,380	6,730	<5	<5	0.6	4.2	13	<5
M8-D	Bottom (10.9)	98	115	1.6	1.4	8	8	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	1	<1	135	148	<0.1	<0.1	<0.2	<0.2	<0.5	0.7	7,770	7,040	<5	<5	0.7	3.8	<5	<5
M9-S	Surface (0.3)	153	13	<0.5	1.2	10	11	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<1	<1	230	29	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	2,860	6,100	<5	<5	1.2	2.4	<5	<5
M9-M	Middle (13.1)	8	<5	1.4	1.3	5	6	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	2	<1	25	13	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	6,850	6,650	<5	<5	<0.5	2.5	<5	<5
M9-D	Bottom (26.4)	23	<5	1.4	1.5	4	6	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	2	<1	44	12	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,300	6,720	<5	<5	<0.5	2.4	<5	<5
M10-S	Surface (0.3)	14	12	<0.5	1.4	11	11	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<1	<1	28	89	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	3,970	5,990	<5	<5	1	2.8	<5	<5
M10-D	Bottom (21.1)	72	<5	1.5	1.5	5	7	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	2	<1	104	13	<0.1	0.2	<0.2	<0.2	<0.5	<0.5	7,170	6,720	<5	<5	0.9	2.5	<5	<5
M11-S	Surface (0.3)	104	10	0.7	1.6	11	11	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<1	<1	137	19	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	4,120	6,450	<5	<5	1.3	2.7	26	<5
M11-M	Middle (13.2)	19	<5	1.8	2	4	6	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<1	<1	33	9	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,080	7,480	<5	<5	<0.5	2.8	<5	<5
M11-D	Bottom (26.7)	411	<5	2	1.8	5	6	<0.2	<0.2	0.6	<0.5	0.3	<0.2	<1	<1	547	10	<0.1	<0.1	<0.2	<0.2	0.6	<0.5	7,080	7,360	<5	<5	1.3	2.5	<5	<5
M12-S	Surface (0.3)	25	18	0.8	1.2	11	17	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	1	<1	33	41	<0.1	<0.1	<0.2	<0.2	<0.5	1	4,360	5,280	<5	<5	1	2.8	<5	<5
M12-M	Middle (12.1)	41	<5	1.5	1.5	5	6	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<1	<1	62	12	<0.1	<0.1	<0.2	<0.2	<0.5	1.7	6,940	6,790	<5	<5	0.6	3.1	<5	<5
M12-D	Bottom (24.8)	120	<5	1.6	1.6	5	6	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<1	<1	209	10	<0.1	<0.1	<0.2	<0.2	<0.5	0.8	7,750	6,840	<5	<5	0.6	2.7	<5	<5
M45-S	Surface (0.3)	-	3,620	-	0.7	-	23	-	<0.2	-	5.2	-	2	-	6	-	5,610	-	<0.1	-	1.5	-	5.6	-	310	-	<5	-	12.9	-	10
M45-D	Bottom (7.2)	-	2,990	-	0.8	-	38	-	<0.2	-	4.5	-	1.9	-	4	-	5,020	-	<0.1	-	1.3	-	4.8	-	995	-	<5	-	13	-	9
M46-S	Surface (0.3)	-	73	-	1.6	-	13	-	<0.2	-	<0.5	-	<0.2	-	<1	-	95	-	<0.1	-	<0.2	-	<0.5	-	5,560	-	<5	-	2.8	-	<5
M46-M	Middle (3.3)	-	31	-	1.1	-	12	-	<0.2	-	<0.5	-	<0.2	-	<1	-	42	-	<0.1	-	<0.2	-	<0.5	-	6,130	-	<5	-	2.1	-	<5
M46-D	Bottom (6.8)	-	406	-	1.4	-	8	-	<0.2	-	<0.5	-	0.3	-	<1	-	566	-	<0.1	-	<0.2	-	1	-	6,460	-	<5	-	3.9	-	<5
LORs		*5*		*0.5*		*1*		*0.2*		*0.5*		*0.2*		*1*		*5*		*0.1*		*0.2*		*0.5*		*10*		*5*		*0.5*		*5*	

*Water quality guideline values for metals/metalloids are applicable to dissolved (filtered <0.45 µm) concentrations hence are not shown in this table

Table 6-6 Orokolo Bay – Dissolved Metals/Metalloids Data (Dry Season and Wet Season)

Site	Depth Profile (m)	Al		As		Ba		Cd		Cr		Co		Cu		Fe		Hg		Pb		Ni		Sr		Sn		V		Zn	
		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	
		Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
Dissolved metals/metalloids																															
M1-S	Surface (0.3)	6	<5	0.8	1.1	11	11	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	4,400	6,110	<5	<5	2.5	2	<5	5
M1-D	Bottom (6.3)	7	12	1	1	7	8	<0.2	<0.2	<0.5	<0.5	<0.2	0.2	<1	<1	<5	6	<0.1	<0.1	<0.2	<0.2	<0.5	0.6	6,790	6,380	<5	<5	2.1	2.2	<5	<5
M2-S	Surface (0.3)	6	<5	0.8	1.1	11	12	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	1.4	4,420	5,940	<5	<5	2.2	1.6	<5	<5
M2-D	Bottom (16.6)	9	<5	1.4	1.1	5	7	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,450	6,550	<5	<5	1.8	1.7	<5	<5
M3-S	Surface (0.3)	<5	<5	0.6	1	10	11	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	4,170	6,020	<5	<5	2.2	1.8	<5	<5
M3-M	Middle (13.1)	<5	<5	1.7	1.2	5	6	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,690	6,650	<5	<5	1.6	1.6	<5	<5
M3-D	Bottom (27.4)	<5	<5	1.6	1.4	4	5	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,450	6,990	<5	<5	1.7	1.6	<5	<5
M4-S	Surface (0.3)	<5	<5	0.7	0.9	10	20	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	4,470	4,710	<5	<5	2.2	2.2	<5	<5
M4-M	Middle (13.0)	<5	<5	0.8	1.1	8	6	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	5,050	6,980	<5	<5	1.9	1.8	<5	<5
M4-D	Bottom (27.5)	<5	<5	1.6	1.3	5	7	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,760	7,030	<5	<5	1.7	1.6	<5	<5
M5-S	Surface (0.3)	<5	<5	0.7	1.3	10	11	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	4,630	6,320	<5	<5	2.2	1.8	<5	<5
M5-D	Bottom (8.9)	5	<5	1.4	1.5	6	7	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	6,990	7,040	<5	<5	1.7	1.8	<5	11
M6-S	Surface (0.3)	<5	<5	0.7	1	11	13	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	2	<1	<5	<5	<0.1	<0.1	<0.2	0.3	<0.5	<0.5	4,520	5,620	<5	<5	2.3	1.8	<5	6
M6-D	Bottom (12.3)	8	<5	1.5	1.2	6	7	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	0.2	<0.5	<0.5	7,520	6,560	<5	<5	2.1	1.6	<5	<5
M7-S	Surface (0.3)	6	<5	0.8	1	10	8	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	4,620	6,610	<5	<5	1.9	1.6	<5	<5
M7-D	Bottom (7.5)	7	<5	0.8	1.2	6	8	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	5,850	6,780	<5	<5	1.6	1.7	<5	<5
M8-S	Surface (0.3)	7	<5	0.7	0.9	10	8	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	4,640	6,330	<5	<5	2.2	1.6	<5	<5
M8-D	Bottom (10.9)	5	<5	1.4	1.4	6	7	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	6,960	6,740	<5	<5	1.9	2.1	<5	<5
M9-S	Surface (0.3)	5	<5	<0.5	1.2	9	10	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	3,070	6,290	<5	<5	2.2	1.8	<5	<5
M9-M	Middle (13.1)	<5	<5	1.6	1.4	5	6	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,350	6,740	<5	<5	1.7	1.5	<5	<5
M9-D	Bottom (26.4)	<5	<5	1.3	1.5	4	5	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,740	7,060	<5	<5	2	1.7	<5	<5
M10-S	Surface (0.3)	<5	<5	0.8	1.1	11	11	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	4,210	6,160	<5	<5	2.3	2.1	<5	<5
M10-D	Bottom (21.1)	5	<5	1.3	1.2	5	6	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	1	<5	<5	<0.1	0.2	<0.2	<0.2	<0.5	<0.5	7,670	6,940	<5	<5	1.8	1.6	<5	<5
M11-S	Surface (0.3)	6	<5	0.9	0.9	11	11	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	4,430	5,960	<5	<5	2.3	1.7	<5	<5
M11-M	Middle (13.2)	5	<5	1.4	1.3	5	6	<0.2	<0.2	<0.5	0.9	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,540	6,770	<5	<5	1.8	1.6	<5	<5
M11-D	Bottom (26.7)	8	<5	1.3	1.4	5	6	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,600	6,940	<5	<5	1.8	1.5	<5	<5
M12-S	Surface (0.3)	<5	<5	0.7	0.7	11	18	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	4,540	5,380	<5	<5	2.3	2.2	<5	<5
M12-M	Middle (12.1)	6	<5	1.6	1.3	5	6	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,490	6,800	<5	<5	1.7	1.7	<5	6
M12-D	Bottom (24.8)	6	<5	1.4	1.3	5	6	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,740	7,100	<5	<5	1.9	1.7	<5	<5
M45-S	Surface (0.3)	-	18	-	<0.5	-	14	-	<0.2	-	<0.5	-	<0.1	-	<1	-	14	-	<0.1	-	<0.2	-	<0.5	-	250	-	<5	-	2.5	-	<5
M45-D	Bottom (7.2)	-	13	-	<0.5	-	34	-	<0.2	-	<0.5	-	<0.1	-	<1	-	8	-	<0.1	-	<0.2	-	<0.5	-	911	-	<5	-	2.6	-	<5
M46-S	Surface (0.3)	-	6	-	1.1	-	13	-	<0.2	-	<0.5	-	<0.1	-	<1	-	<5	-	<0.1	-	<0.2	-	<0.5	-	5,380	-	<5	-	2	-	<5
M46-M	Middle (3.3)	-	<5	-	1.8	-	11	-	<0.2	-	<0.5	-	<0.1	-	<1	-	25	-	<0.1	-	<0.2	-	<0.5	-	5,930	-	<5	-	2.7	-	<5
M46-D	Bottom (6.8)	-	10	-	1	-	8	-	<0.2	-	<0.5	-	<0.1	-	<1	-	<5	-	<0.1	-	<0.2	-	<0.5	-	6,540	-	<5	-	1.6	-	<5
Guideline values (marine water)	***PNG ER***	-		*50*		*1,000*		*1.0*		*10*		*0.2*		*30*		*1,000*		*0.2*		*4*		*1,000*		-		*500*		-		*5,000*	
	ANZECC	-		-		-		*0.7*		*4.4*		*1.0*		*1.3*		-		*0.1*		*4.4*		*7*		-		-		*100*		*15*	
LORs		*5*		*0.5*		*1*		*0.2*		*0.5*		*0.2*		*1*		*5*		*0.1*		*0.2*		*0.5*		*10*		*5*		*0.5*		*5*	

Note: Yellow highlighted cells indicate exceedance of the ANZECC guideline values, while orange highlighted cells indicate exceedance of the PNG ER guideline values.
* WQOs/guideline values for metals/metalloids are relevant to *dissolved* (filtered <0.45 µm) concentrations only

Table 6-7 Offshore Export Pipeline Corridor – Metals/Metalloids Data (Dry Season and Wet Season)

Site	Depth Profile (m)	Al		As		Ba		Cd		Cr		Co		Cu		Fe		Hg		Pb		Ni		Sr		Sn		V		Zn	
		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	
		Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
Total metals/metalloids *																															
M25-S	Surface (0.3)	9	48	1.8	1.4	5	11	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	3	<1	15	81	<0.1	<0.1	<0.2	<0.2	0.8	<0.5	7,120	5,630	<5	<5	1.3	3.4	<5	<5
M25-M	Middle (11.9)	45	<5	1.8	1.9	5	6	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	3	<1	69	12	<0.1	<0.1	<0.2	<0.2	1.4	<0.5	7,150	7,160	<5	<5	1.6	2.7	<5	<5
M25-D	Bottom (24.6)	476	<5	2.2	2.2	5	6	<0.2	<0.2	1	<0.5	0.4	<0.2	2	<1	799	7	<0.1	<0.1	<0.2	<0.2	1.6	<0.5	7,190	7,310	<5	<5	3	3.1	<5	<5
M31-S	Surface (0.3)	30	8	1.9	1.9	5	9	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	2	<1	51	18	<0.1	<0.1	<0.2	<0.2	0.7	<0.5	7,040	5,960	<5	<5	1.6	2.5	<5	<5
M31-M	Middle (26.0)	21	<5	1.8	2	5	5	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	2	<1	43	12	<0.1	<0.1	<0.2	<0.2	0.6	<0.5	7,150	7,170	<5	<5	1.4	2.5	<5	<5
M31-D	Bottom (53.8)	37	17	2	2.3	4	4	<0.2	<0.2	<0.5	<0.5	0.3	<0.2	2	<1	66	41	<0.1	<0.1	<0.2	<0.2	<0.5	0.6	7,240	7,650	<5	<5	1.4	2.7	<5	<5
M37-S	Surface (0.3)	<5	11	1.9	1.5	5	10	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	1	<1	42	34	<0.1	<0.1	<0.2	<0.2	<0.5	0.8	7,190	6,320	<5	<5	1.3	4.7	<5	<5
M37-M	Middle (23.0)	<5	<5	1.9	1.5	5	6	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	1	<1	17	10	<0.1	<0.1	<0.2	<0.2	<0.5	0.9	7,210	7,380	<5	<5	1.2	3.4	<5	<5
M37-D	Bottom (45.1)	15	<5	1.9	2.6	4	7	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	1	<1	37	10	<0.1	<0.1	<0.2	<0.2	<0.5	0.6	7,170	7,730	<5	<5	1.2	3.2	<5	<5
M43-S	Surface (0.3)	29	39	1.8	2	6	10	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	1	<1	49	54	<0.1	<0.1	<0.2	<0.2	0.7	0.5	7,040	6,660	<5	<5	1.3	3.6	<5	<5
M43-M	Middle (20.7)	18	<5	2	1.9	5	6	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	1	<1	33	13	<0.1	<0.1	<0.2	<0.2	1.6	<0.5	7,160	7,610	<5	<5	1.2	2.8	<5	<5
M43-D	Bottom (43.8)	71	<5	2	1.7	5	6	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	1	<1	132	12	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,170	7,920	<5	<5	1.5	2.6	<5	<5
Dissolved metals/metalloids																															
M25-S	Surface (0.3)	<5	<5	1.5	0.9	5	11	<0.2	<0.2	<0.5	0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,330	5,180	<5	<5	2.4	1.8	<5	<5
M25-M	Middle (11.9)	<5	<5	1.5	1.4	5	6	<0.2	<0.2	<0.5	0.9	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	0.6	7,340	6,670	<5	<5	1.7	1.8	<5	<5
M25-D	Bottom (24.6)	<5	<5	1.6	1.4	4	6	<0.2	<0.2	<0.5	1.6	<0.2	<0.1	<1	<1	21	11	<0.1	<0.1	<0.2	<0.2	<0.5	0.7	7,440	6,800	<5	<5	1.7	1.6	<5	<5
M31-S	Surface (0.3)	10	<5	1.6	0.8	5	10	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	14	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,420	5,570	<5	<5	1.8	1.9	<5	8
M31-M	Middle (26.0)	<5	<5	1.6	1.2	4	5	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	6	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,460	6,890	<5	<5	1.6	1.8	<5	<5
M31-D	Bottom (53.8)	<5	<5	1.6	1.6	4	4	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	8	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,400	7,410	<5	<5	1.5	1.8	<5	<5
M37-S	Surface (0.3)	<5	<5	1.4	1	4	9	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,430	6,040	<5	<5	1.1	1.8	<5	<5
M37-M	Middle (23.0)	<5	<5	1.4	1.2	4	5	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1 *	<5	13	<0.1	<0.1	<0.2	<0.2	<0.5	0.9	7,510	7,200	<5	<5	0.9	1.6	<5	<5
M37-D	Bottom (45.1)	<5	<5	1.5	1.4	4	5	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,550	7,140	<5	<5	1.4	1.8	<5	<5
M43-S	Surface (0.3)	26	<5	1.4	1.2	5	8	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	0.6	7,450	6,070	<5	<5	1.5	1.7	<5	<5
M43-M	Middle (20.7)	<5	<5	1.5	1.6	4	6	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,580	7,000	<5	<5	1.1	1.9	<5	<5
M43-D	Bottom (43.8)	<5	<5	1.6	1.6	4	5	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,660	7,350	<5	<5	1.2	1.7	<5	<5
Guideline values (marine water)	***PNG ER***	-		*50*		*1,000*		*1.0*		*10*		*0.2*		*30*		*1,000*		*0.2*		*4*		*1,000*		-		*500*		-		*5,000*	
	ANZECC	-		-		-		*0.7*		*4.4*		*1.0*		*1.3*		-		*0.1*		*4.4*		*7*		-		-		*100*		*15*	
LORs		*5*		*0.5*		*1*		*0.2*		*0.5*		*0.2*		*1*		*5*		*0.1*		*0.2*		*0.5*		*10*		*5*		*0.5*		*5*	

Note: Yellow highlighted cells indicate exceedance of the ANZECC guideline values, while orange highlighted cells indicate exceedance of the PNG ER guideline values.

* WQOs/guideline values for metals/metalloids are relevant to *dissolved* (filtered <0.45 µm) concentrations only

** Dissolved copper concentration for M37-M is 10 µg/L in the laboratory data in Appendix C, however the total copper concentration for this site is <1 µg/L. Therefore, dissolve concentration is assumed to be <1 µg/L.

Table 6-8 Caution Bay – Metals/Metalloids Data (Dry Season and Wet Season)

Site	Depth Profile (m)	Al		As		Ba		Cd		Cr		Co		Cu		Fe		Hg		Pb		Ni		Sr		Sn		V		Zn	
		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	
		Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
Total metals/metalloids *																															
M13-S	Surface (0.3)	45	28	1.8	1.6	6	10	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<1	<1	67	55	<0.1	<0.1	<0.2	<0.2	0.6	<0.5	7,030	6,260	<5	<5	1.4	2.6	<5	<5
M13-M	Middle (11.0)	11	10	1.9	1.6	5	10	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<1	<1	26	21	<0.1	<0.1	<0.2	<0.2	0.6	<0.5	7,120	6,570	<5	<5	1	2.7	<5	<5
M13-D	Bottom (22.8)	19	<5	1.9	1.5	5	8	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<1	<1	48	19	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,180	7,200	<5	<5	1.2	2.8	<5	<5
M15-S	Surface (0.3)	-	37	-	1.5	-	10	-	<0.2	-	<0.5	-	<0.2	-	<1	-	69	-	<0.1	-	<0.2	-	<0.5	-	6,220	-	<5	-	2.8	-	<5
M15-M	Middle (15.2)	-	16	-	1.6	-	9	-	<0.2	-	<0.5	-	<0.2	-	<1	-	34	-	<0.1	-	<0.2	-	<0.5	-	6,670	-	<5	-	2.6	-	<5
M15-D	Bottom (30.7)	-	12	-	1.5	-	7	-	<0.2	-	<0.5	-	<0.2	-	<1	-	30	-	<0.1	-	<0.2	-	<0.5	-	7,320	-	<5	-	3	-	<5
M16-S	Surface (0.3)	-	20	-	1.3	-	9	-	<0.2	-	<0.5	-	<0.2	-	<1	-	37	-	<0.1	-	<0.2	-	<0.5	-	6,420	-	<5	-	2.3	-	<5
M16-M	Middle (14.9)	-	42	-	1.6	-	9	-	<0.2	-	<0.5	-	<0.2	-	<1	-	19	-	<0.1	-	<0.2	-	<0.5	-	6,380	-	<5	-	3.4	-	<5
M16-D	Bottom (31.2)	-	13	-	1.3	-	8	-	<0.2	-	<0.5	-	<0.2	-	<1	-	31	-	<0.1	-	<0.2	-	<0.5	-	6,240	-	<5	-	1.1	-	<5
M17-S	Surface (0.3)	30	17	1.9	2.2	5	9	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	5	<1	30	62	<0.1	<0.1	<0.2	<0.2	<0.5	0.8	7,150	6,660	<5	<5	1	3.3	<5	<5
M17-D	Bottom (28.7)	34	6	1.9	1.4	5	9	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<1	<1	67	19	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,150	6,730	<5	<5	1.1	2.4	<5	<5
M19-S	Surface (0.3)	11	6	1.9	1.4	5	8	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<1	<1	25	19	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,150	6,160	<5	<5	1.2	1.6	<5	<5
M19-D	Bottom (19.1)	18	12	1.8	1.8	5	9	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<1	<1	40	27	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,260	6,550	<5	<5	1.2	2.3	<5	<5
M20-S	Surface (0.3)	-	55	-	1.3	-	10	-	<0.2	-	<0.5	-	<0.2	-	1	-	127	-	<0.1	-	0.8	-	0.7	-	6,400	-	<5	-	2.4	-	<5
M20-D	Bottom (7.4)	-	18	-	1.8	-	12	-	<0.2	-	<0.5	-	<0.2	-	<1	-	66	-	<0.1	-	<0.2	-	<0.5	-	6,300	-	<5	-	2.2	-	<5
M21-S	Surface (0.3)	13	11	1.7	1.5	5	9	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<1	<1	30	25	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,240	6,220	<5	<5	1	2.2	<5	<5
M21-D	Bottom (8.2)	14	29	1.8	1.3	5	9	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<1	<1	60	60	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,180	6,240	<5	<5	1.1	2.6	<5	<5
M22-S	Surface (0.3)	10	10	1.8	1.4	5	9	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<1	<1	24	25	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,240	6,600	<5	<5	1.1	2.3	<5	<5
M22-D	Bottom (10.5)	14	18	1.8	2	5	9	<0.2	<0.2	<0.5	<0.5	<0.2	<0.2	<1	1	30	42	<0.1	<0.1	<0.2	<0.2	<0.5	0.7	7,180	6,630	<5	<5	1.1	2.6	<5	<5
M23-S	Surface (0.3)	-	9	-	1.3	-	9	-	<0.2	-	<0.5	-	<0.2	-	<1	-	32	-	<0.1	-	<0.2	-	<0.5	-	6,720	-	<5	-	2.5	-	<5
M23-D	Bottom (5.0)	-	8	-	1.3	-	9	-	<0.2	-	<0.5	-	<0.2	-	<1	-	37	-	<0.1	-	<0.2	-	<0.5	-	6,580	-	<5	-	2.4	-	11
M24-S	Surface (0.3)	-	6	-	1.8	-	8	-	<0.2	-	<0.5	-	<0.2	-	<1	-	14	-	<0.1	-	<0.2	-	<0.5	-	6,710	-	<5	-	3	-	<5
M24-M	Middle (7.5)	-	<5	-	1.5	-	9	-	<0.2	-	<0.5	-	<0.2	-	<1	-	21	-	<0.1	-	<0.2	-	<0.5	-	6,750	-	<5	-	2.8	-	<5
M24-D	Bottom (15.9)	-	<5	-	1.4	-	9	-	<0.2	-	<0.5	-	<0.2	-	<1	-	16	-	<0.1	-	<0.2	-	<0.5	-	6,860	-	<5	-	2.4	-	<5
Dissolved metals/metalloids																															
M13-S	Surface (0.3)	<5	<5	1.5	1.2	6	8	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	10	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,520	5,780	<5	<5	1.3	1.8	<5	<5
M13-M	Middle (11.0)	<5	<5	1.5	1.3	4	7	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,740	6,210	<5	<5	0.9	1.7	<5	<5
M13-D	Bottom (22.8)	<5	<5	1.4	1.3	4	6	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	6	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,650	6,700	<5	<5	1	1.7	<5	<5
M15-S	Surface (0.3)	-	<5	-	1.2	-	9	-	<0.2	-	<0.5	-	<0.1	-	<1	-	<5	-	<0.1	-	<0.2	-	<0.5	-	6,020	-	<5	-	1.7	-	<5
M15-M	Middle (15.2)	-	<5	-	1.3	-	7	-	<0.2	-	<0.5	-	<0.1	-	<1	-	<5	-	<0.1	-	<0.2	-	<0.5	-	6,450	-	<5	-	1.8	-	<5
M15-D	Bottom (30.7)	-	<5	-	1.4	-	6	-	<0.2	-	<0.5	-	<0.1	-	<1	-	<5	-	<0.1	-	<0.2	-	<0.5	-	6,970	-	<5	-	1.8	-	<5
M16-S	Surface (0.3)	-	<5	-	1.2	-	8	-	<0.2	-	<0.5	-	<0.1	-	<1	-	<5	-	<0.1	-	<0.2	-	<0.5	-	6,180	-	<5	-	1.7	-	<5
M16-M	Middle (14.9)	-	<5	-	1	-	8	-	<0.2	-	<0.5	-	<0.1	-	<1	-	<5	-	<0.1	-	<0.2	-	<0.5	-	6,440	-	<5	-	1.5	-	<5
M16-D	Bottom (31.2)	-	5	-	1.1	-	7	-	<0.2	-	<0.5	-	<0.1	-	<1	-	<5	-	<0.1	-	<0.2	-	<0.5	-	6,800	-	<5	-	1.7	-	<5
M17-S	Surface (0.3)	<5	<5	1.4	1	4	7	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	13	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,740	6,460	<5	<5	1.8	1.7	<5	<5
M17-D	Bottom (28.7)	<5	<5	1.6	1.1	4	8	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	12	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,850	6,380	<5	<5	1.3	1.8	<5	<5
M19-S	Surface (0.3)	<5	<5	1.4	1.2	4	7	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	<5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,770	6,340	<5	<5	1.1	1.8	<5	<5
M19-D	Bottom (19.1)	<5	<5	1.5	0.9	5	8	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	6	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,850	6,520	<5	<5	1.3	1.8	<5	<5
M20-S	Surface (0.3)	-	<5	-	1.1	-	9	-	<0.2	-	<0.5	-	<0.1	-	<1	-	<5	-	<0.1	-	<0.2	-	<0.5	-	6,460	-	<5	-	1.8	-	<5
M20-D	Bottom (7.4)	-	<5	-	1	-	8	-	<0.2	-	<0.5	-	<0.1	-	<1	-	<5	-	<0.1	-	<0.2	-	<0.5	-	6,270	-	<5	-	1.7	-	<5
M21-S	Surface (0.3)	<5	<5	1.5	1.2	5	8	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,810	6,240	<5	<5	1.4	1.7	<5	<5

Site	Depth Profile (m)	Al		As		Ba		Cd		Cr		Co		Cu		Fe		Hg		Pb		Ni		Sr		Sn		V		Zn	
		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	
		Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
M21-D	Bottom (8.2)	<5	<5	1.6	1.1	5	8	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	5	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,780	6,240	<5	<5	1.4	1.8	<5	<5
M22-S	Surface (0.3)	<5	<5	1.5	1.3	5	7	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	6	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,800	6,540	<5	<5	1.8	1.7	<5	<5
M22-D	Bottom (10.5)	<5	<5	1.6	1.2	5	7	<0.2	<0.2	<0.5	<0.5	<0.2	<0.1	<1	<1	7	<5	<0.1	<0.1	<0.2	<0.2	<0.5	<0.5	7,820	6,300	<5	<5	2.2	1.8	<5	<5
M23-S	Surface (0.3)	-	<5	-	1.3	-	7	-	<0.2	-	<0.5	-	<0.1	-	<1	-	<5	-	<0.1	-	<0.2	-	<0.5	-	6,400	-	<5	-	1.8	-	7
M23-D	Bottom (5.0)	-	15	-	1.3	-	8	-	<0.2	-	<0.5	-	<0.1	-	<1	-	<5	-	<0.1	-	0.2	-	1	-	6,410	-	<5	-	1.6	-	8
M24-S	Surface (0.3)	-	<5	-	1.2	-	8	-	<0.2	-	<0.5	-	<0.1	-	<1	-	<5	-	<0.1	-	<0.2	-	<0.5	-	6,470	-	<5	-	1.8	-	9
M24-M	Middle (7.5)	-	<5	-	1.2	-	8	-	<0.2	-	<0.5	-	<0.1	-	<1	-	<5	-	<0.1	-	<0.2	-	<0.5	-	6,540	-	<5	-	1.7	-	<5
M24-D	Bottom (15.9)	-	<5	-	1.4	-	8	-	<0.2	-	<0.5	-	<0.1	-	<1	-	<5	-	<0.1	-	<0.2	-	<0.5	-	6,440	-	<5	-	1.8	-	<5
Guideline values (marine water)	***PNG ER***	*-*		*50*		*1,000*		*1.0*		*10*		*0.2*		*30*		*1,000*		*0.2*		*4*		*1,000*		*-*		*500*		*-*		*5,000*	
	ANZECC	*-*		*-*		*-*		*0.7*		*4.4*		*1.0*		*1.3*		*-*		*0.1*		*4.4*		*7*		*-*		*-*		*100*		*15*	
LORs		*5*		*0.5*		*1*		*0.2*		*0.5*		*0.2*		*1*		*5*		*0.1*		*0.2*		*0.5*		*10*		*5*		*0.5*		*5*	

Note: Yellow highlighted cells indicate exceedance of the ANZECC guideline values, while orange highlighted cells indicate exceedance of the PNG ER guideline values.

* WQOs/guideline values for metals/metalloids are relevant to *dissolved* (filtered <0.45 µm) concentrations only

6.2.3.2 Total Suspended Solids, Nutrients and Chlorophyll

Water samples collected in June-July 2016 and January 2017 were analyzed for a range of other parameters, including total suspended solids (TSS), chlorophyll-a and nutrients, including total nitrogen (TN), ammonia, nitrogen oxides (NO_x), total Kjeldahl nitrogen (TKN), total phosphorus (TP) and filterable reactive phosphorus (FRP). The results are presented in Table 6-9 to Table 6-11 and can be summarized as follows:

- TSS levels were below 20 mg/L at all sites during the dry season survey, with Orokolo Bay sites recording the highest TSS (up to 17 mg/L) while sites in Caution Bay recorded the lowest TSS (up to 7 mg/L). This dry season spatial pattern in TSS is similar to dry season spatial patterns in turbidity described in Section 6.2.1.
- TSS levels during the wet season survey were lower than the dry season survey, with most sites below 10 mg/L (except for Site M45 at the Purari River mouth which had TSS of 100 mg/L - noting this site was only sampled during the wet season). This seasonal pattern is similar to the turbidity data described in Section 6.2.1, which indicated lower turbidity values at all three areas during the wet season survey. Furthermore, the instrument deployment data (Section 6.2.2) also supports this, with turbidity values lower during the wet season survey relative to the dry season survey in Orokolo Bay.
- All sites had relatively low concentrations of nutrients, with most results below laboratory LORs during both surveys. The exception to this was ammonia, which generally had higher concentrations during the dry season survey at Orokolo Bay sites and lower concentrations during the dry season survey at Caution Bay and offshore export pipeline corridor sites. However, ammonia concentrations were all below the ANZECC toxicity-based guideline value (0.91 mg/L), except for surface waters at Site M13 in Caution Bay which had an ammonia concentration (0.96 mg/L) that slightly exceeded the ANZECC guideline value.
- Elevated levels of nutrients can result in nuisance algal growth (depending on a number of factors) however chlorophyll-a levels, which are indicative of phytoplankton growth, were low with most results being below or close to the laboratory limit of reporting (1 µg/L). Chlorophyll-a was mostly below the laboratory LOR at all sites during both surveys, except for four sites in Orokolo Bay which had concentrations up to 3 µg/L.

6.2.3.3 Hydrocarbons

The hydrocarbon data, including polynuclear aromatic hydrocarbons (PAHs), total petroleum hydrocarbons (TPHs), total recoverable hydrocarbons (TRHs)[3] and benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN), are tabulated in Appendix A.

All results during the dry season and the wet season for all sites were below the laboratory LORs and below relevant ANZECC guideline values.

[3] TRH is the same as TPH except that the TRH carbon chain fractions are reported slightly differently to allow correlation with health screening levels in the National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No 1) (NEPM)

Table 6-9 Orokolo Bay – TSS, Nutrients and Chlorophyll Data (Dry Season and Wet Season)

Site	Depth Profile	TSS		Chlorophyll-a		Nutrients											
						Ammonia		NOx		TKN		TN		TP		FRP	
		mg/L		µg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
		Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
M1-S	Surface (0.3)	17	<1	1	<1	0.03	<0.25	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	0.06	<0.05	<0.01	<0.01
M1-D	Bottom (6.3)	16	6	1	2	0.1	<0.25	0.06	<0.01	<0.5	<0.5	<0.5	<0.5	0.06	<0.05	0.01	<0.01
M2-S	Surface (0.3)	5	<1	3	<1	0.02	0.88	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	0.06	<0.01	<0.01
M2-D	Bottom (16.6)	11	<1	<1	<1	0.19	<0.25	0.07	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.01	<0.01
M3-S	Surface (0.3)	3	1	<1	<1	0.02	<0.25	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.01	<0.01
M3-M	Middle (13.1)	1	<1	<1	<1	0.14	<0.25	0.1	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.01	<0.01
M3-D	Bottom (27.4)	6	<1	<1	<1	0.13	<0.25	0.02	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	0.23	<0.01	<0.01
M4-S	Surface (0.3)	2	2	<1	<1	0.04	0.66	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.01	<0.01
M4-M	Middle (13.0)	2	<1	<1	<1	0.06	<0.25	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.01	<0.01
M4-D	Bottom (27.5)	8	<1	<1	<1	0.15	<0.25	0.04	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.01	<0.01
M5-S	Surface (0.3)	1	<1	<1	<1	0.09	0.31	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	0.06	<0.05	<0.01	<0.01
M5-D	Bottom (8.9)	4	1	<1	1	0.1	0.31	0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.01	<0.01
M6-S	Surface (0.3)	6	<1	<1	<1	0.03	<0.25	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.01	<0.01
M6-D	Bottom (12.3)	15	1	<1	<1	0.14	<0.25	0.05	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	0.01	0.02
M7-S	Surface (0.3)	4	1	2	<1	0.03	<0.25	<0.01	0.03	<0.5	<0.5	<0.5	<0.5	<0.05	0.09	<0.01	<0.01
M7-D	Bottom (7.5)	9	4	<1	2	0.07	0.33	0.07	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	0.23	0.01	<0.01
M8-S	Surface (0.3)	3	<1	<1	<1	0.03	0.64	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	0.06	<0.05	<0.01	<0.01
M8-D	Bottom (10.9)	4	2	<1	<1	0.06	0.78	0.05	<0.01	<0.5	<0.5	<0.5	<0.5	0.06	<0.05	<0.01	<0.01
M9-S	Surface (0.3)	5	1	<1	<1	0.03	0.72	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	0.01	<0.01
M9-M	Middle (13.1)	4	<1	<1	<1	0.13	0.27	<0.01	0.05	<0.5	<0.5	<0.5	<0.5	0.11	<0.05	<0.01	<0.01
M9-D	Bottom (26.4)	4	<1	<1	<1	0.13	<0.25	0.03	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.01	<0.01

Site	Depth Profile	TSS		Chlorophyll-a		Nutrients											
						Ammonia		NOx		TKN		TN		TP		FRP	
		mg/L		µg/L		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
		Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
M10-S	Surface (0.3)	2	<1	1	<1	0.03	<0.25	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.01	<0.01
M10-D	Bottom (21.1)	6	<1	<1	<1	0.12	<0.25	0.06	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	0.02	<0.01
M11-S	Surface (0.3)	2	2	2	<1	0.02	<0.25	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	0.01	<0.01
M11-M	Middle (13.2)	5	<1	<1	<1	0.12	<0.25	0.03	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.01	<0.01
M11-D	Bottom (26.7)	15	1	<1	<1	0.13	0.74	0.04	<0.01	0.8	<0.5	0.8	<0.5	<0.05	<0.05	<0.01	<0.01
M12-S	Surface (0.3)	2	2	<1	<1	0.02	<0.25	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.01	<0.01
M12-M	Middle (12.1)	6	<1	<1	<1	0.12	<0.25	0.03	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.01	<0.01
M12-D	Bottom (24.8)	9	<1	<1	<1	0.16	<0.25	0.04	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.01	<0.01
M45-S	Surface (0.3)	-	100	-	<1	-	<0.25	-	0.04	-	0.3	-	0.3	-	0.13	-	<0.01
M45-B	Bottom (7.2)	-	99	-	<1	-	<0.25	-	0.03	-	0.2	-	0.2	-	0.08	-	0.01
M46-S	Surface (0.3)	-	1	-	<1	-	<0.25	-	<0.01	-	<0.5	-	<0.5	-	0.15	-	<0.01
M46-M	Middle (3.3)	-	<1	-	<1	-	<0.25	-	<0.01	-	<0.5	-	<0.5	-	<0.05	-	<0.01
M46-B	Bottom (6.8)	-	10	-	<1	-	<0.25	-	<0.01	-	0.5	-	0.5	-	0.26	-	<0.01
PNG ER		-		-		-		-		-		-		-		-	
ANZECC		-		-		*0.91*		-		-		-		-		-	
LORs		*1*		*1*		*0.01 (dry season)* *0.25 (wet season)*		*0.01*		*0.5*		*0.5*		*0.05*		*0.01*	

Note: Yellow highlighted cells indicate exceedance of the ANZECC guideline values, while orange highlighted cells indicate exceedance of the PNG ER guideline values.

Table 6-10 Offshore Export Pipeline Corridor – TSS, Nutrients and Chlorophyll Data (Dry Season and Wet Season)

Site	Depth Profile	TSS		Chlorophyll-a		Nutrients											
						Ammonia		NOx		TKN		TN		TP		FRP	
		mg/L		mg/m3		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
		Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
M25-S	Surface (0.3)	2	1	<1	<1	0.14	<0.25	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.01	<0.01
M25-M	Middle (11.9)	6	<1	<1	<1	0.13	0.86	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	0.12	<0.01	<0.01
M25-D	Bottom (24.6)	14	<1	<1	<1	0.15	<0.25	0.03	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.01	<0.01
M31-S	Surface (0.3)	8	<1	<1	<1	0.06	<0.25	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	0.07	<0.01	<0.01
M31-M	Middle (26.0)	6	<1	<1	<1	0.15	<0.25	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.01	<0.01
M31-D	Bottom (53.8)	1	<1	<1	<1	0.15	<0.25	<0.01	0.02	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	0.03	<0.01
M37-S	Surface (0.3)	4	<1	<1	<1	0.13	0.74	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	0.08	<0.01	<0.01
M37-M	Middle (23.0)	6	<1	<1	<1	0.14	<0.25	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.01	<0.01
M37-D	Bottom (45.1)	4	<1	<1	<1	0.17	<0.25	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.01	<0.01
M43-S	Surface (0.3)	2	2	<1	<1	0.16	<0.25	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.01	<0.01
M43-M	Middle (20.7)	1	<1	<1	<1	0.15	<0.25	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	0.13	<0.01	<0.01
M43-D	Bottom (43.8)	5	<1	<1	<1	0.14	0.35	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	0.07	<0.01	<0.01
PNG ER		-		-		-		-		-		-		-		-	
ANZECC		-		-		*0.91*		-		-		-		-		-	
LORs		*1*		*1*		*0.25*		*0.01*		*0.5*		*0.5*		*0.05*		*0.01*	

Note: Yellow highlighted cells indicate exceedance of the ANZECC guideline values, while orange highlighted cells indicate exceedance of the PNG ER guideline values.

Table 6-11 Caution Bay – TSS, Nutrients and Chlorophyll Data (Dry Season and Wet Season)

Site	Depth Profile	TSS		Chlorophyll-a		Nutrients											
						Ammonia		NOx		TKN		TN		TP		FRP	
		mg/L		mg/m3		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
		Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
M13-S	Surface (0.3)	7	<1	<1	<1	0.09	0.96	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	0.05	<0.01	0.02
M13-M	Middle (11.0)	1	<1	<1	<1	0.09	0.26	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.01	<0.01
M13-D	Bottom (22.8)	5	<1	<1	<1	0.12	0.56	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.01	<0.01
M15-S	Surface (0.3)	-	<1	-	<1	-	0.62	-	<0.01	-	<0.5	-	<0.5	-	0.12	-	<0.01
M15-M	Middle (15.2)	-	<1	-	1	-	0.68	-	<0.01	-	<0.5	-	<0.5	-	<0.05	-	<0.01
M15-B	Bottom (30.7)	-	<1	-	<1	-	0.59	-	<0.01	-	<0.5	-	<0.5	-	0.06	-	<0.01
M16-S	Surface (0.3)	-	1	-	<1	-	0.58	-	<0.01	-	<0.5	-	<0.5	-	0.32	-	<0.01
M16-M	Middle (14.9)	-	<1	-	<1	-	0.61	-	<0.01	-	<0.5	-	<0.5	-	0.42	-	<0.01
M16-B	Bottom (31.2)	-	<1	-	<1	-	0.45	-	<0.01	-	<0.5	-	<0.5	-	0.38	-	<0.01
M17-S	Surface (0.3)	3	1	<1	<1	0.13	0.5	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	0.06	<0.01	<0.01
M17-D	Bottom (28.7)	2	2	<1	<1	0.14	0.49	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	0.09	<0.01	<0.01
M19-S	Surface (0.3)	7	2	<1	<1	0.11	0.48	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.01	<0.01
M19-D	Bottom (19.1)	2	<1	<1	<1	0.11	0.45	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	0.49	<0.01	<0.01
M20-S	Surface (0.3)	-	1	-	<1	-	0.49	-	<0.01	-	<0.5	-	<0.5	-	0.05	-	<0.01
M20-B	Bottom (7.4)	-	<1	-	<1	-	0.53	-	<0.01	-	<0.5	-	<0.5	-	<0.05	-	<0.01
M21-S	Surface (0.3)	6	<1	<1	<1	0.15	0.83	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.01	<0.01
M21-D	Bottom (8.2)	4	2	<1	<1	0.12	0.42	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	<0.05	<0.01	<0.01
M22-S	Surface (0.3)	7	2	<1	<1	0.11	0.71	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	0.23	<0.01	<0.01
M22-D	Bottom (10.5)	2	2	<1	<1	0.1	0.77	<0.01	<0.01	<0.5	<0.5	<0.5	<0.5	<0.05	0.32	<0.01	<0.01
M23-S	Surface (0.3)	-	<1	-	<1	-	0.53	-	<0.01	-	<0.5	-	<0.5	-	0.43	-	0.02
M23-B	Bottom (5.0)	-	2	-	<1	-	0.62	-	<0.01	-	<0.5	-	<0.5	-	0.08	-	<0.01

Site	Depth Profile	TSS		Chlorophyll-a		Nutrients											
						Ammonia		NOx		TKN		TN		TP		FRP	
		mg/L		mg/m3		mg/L		mg/L		mg/L		mg/L		mg/L		mg/L	
		Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet	Dry	Wet
M24-S	Surface (0.3)	-	2	-	<1	-	0.63	-	<0.01	-	<0.5	-	<0.5	-	0.23	-	<0.01
M24-M	Middle (7.5)	-	<1	-	<1	-	0.62	-	<0.01	-	<0.5	-	<0.5	-	<0.05	-	<0.01
M24-B	Bottom (15.9)	-	2	-	<1	-	0.64	-	<0.01	-	<0.5	-	<0.5	-	<0.05	-	<0.01
PNG ER		-		-		-		-		-		-		-		-	
ANZECC		-		-		*0.91*		-		-		-		-		-	
LORs		*1*		*1*		*0.25*		*0.01*		*0.5*		*0.5*		*0.05*		*0.01*	

Note: Yellow highlighted cells indicate exceedance of the ANZECC guideline values, while orange highlighted cells indicate exceedance of the PNG ER guideline values.

6.2.4 Comparison to Other Studies

As noted in Section 4.1, water quality studies have previously been undertaken in and adjacent to the study area. Only one of these studies (PNG LNG Project EIS) has provided marine water quality data that overlaps with the current study. Both the PNG LNG Project EIS and the Gulf LNG Project EIS, however, provide information relevant to characterizing the marine water quality baseline within the Gulf of Papua. What is clear from these previous studies, consistent with the current study, is that while marine water quality in the gulf is representative of marine water quality found in other tropical areas, there is significant influence to water quality in nearshore areas associated with the large river systems that discharge into the gulf. This was identified for both the Omati River (CNS, 2009) and for an assessment of the rivers flowing into Kerema Bay. This is consistent with the findings of the present study which has identified the significant influence of the Purari River on water quality in nearshore areas of Orokolo Bay adjacent to the delta (i.e. freshwater flows resulting in stratification).

In comparing the results of the June-July 2016 and January 2017 surveys to the sampling activities undertaken for the PNG LNG Project EIS (December 2007 and April 2008) the following observations can be made:

- TSS measured in Caution Bay for the PNG LNG EIS was significantly higher in the dry season (April 2008) compared to the wet season (December 2007) (i.e. 26 to 68 mg/L compared to 2 to 17 mg/L), although it was acknowledged that further sampling was required to further assess this seasonal difference (CNS, 2009). The results obtained from the April 2008 survey were considered to be contrary to the higher visibility noted by divers at that time (CNS, 2008b), hence there is some uncertainty associated with the TSS results for the April 2008 survey. The present study identified higher levels of TSS in the wet season (January 2017) compared with the dry season (June-July 2016), however the difference between seasons was minor with all results less than 8 mg/L.
- In situ parameters (turbidity, pH, EC, DO and temperature) measured at Caution Bay for the PNG LNG EIS were mostly similar to those measured during the present study. The key difference was the potential for more freshwater-dominated influences noted during the PNG LNG Project EIS, contributing to EC and salinity values lower than expected for nearshore marine waters (43,000-58,000 µS/cm and 27,880-34,000 mg/L, respectively) (CNS, 2009).
- Similar to the present study, metals and metalloids analyzed were all below the ANZECC and PNG ER guideline values.

6.2.5 Summary of Water Quality Conditions

Orokolo Bay

Water quality at Orokolo Bay is strongly influenced by freshwater discharges from the Purari River. The influence of these freshwater discharges is illustrated in the water quality profiling data which indicated lower EC and salinity (~35,000 µS/cm) in surface waters at monitoring sites in Orokolo Bay, compared to bottom waters in Orokolo Bay and other sites in Caution Bay and offshore export pipeline corridor (~55,000 µS/cm).

This stratification was more pronounced during the dry season survey relative to the wet season survey, possibly due to freshwater discharges from the Purari River and the calm conditions at the time of dry season sampling. These calm conditions are reflected in the dry season profiling data for

all three areas, which generally shows more consistent water quality conditions between sites during the dry season survey relative to the wet season survey, when greater variability was evident in the data.

The influence of Purari River discharges was greatest at the mouth, which had relatively fresh surface waters (~2,000 µS/cm) and saline bottom waters (~40,000 µS/cm). This indicates the presence of a salt wedge at the mouth of the Purari River. Furthermore, during the last few days of instrument deployment near the mouth in January 2017, the turbidity spiked from about 50 NTU up to about 450 NTU. Field observations indicated this spike was the result of a large slug of turbid water from rainfall in the Purari River catchment.

Previous studies (e.g. Saint-cast and Condie, 2006) have indicated that turbidity in Orokolo Bay generated from wind and wave driven resuspension is generally highest during the dry season, while turbidity generated by fluvial delivery of terrigenous sediment is highest during the wet season. The data from bottom-mounted instrument deployments supports this, with lower turbidity during calmer weather conditions and higher turbidity during periods of higher winds and rougher seas.

Turbidity and TSS levels were mostly lower during the dry season survey compared to the wet season survey. Turbidity levels were generally higher in Orokolo Bay compared to Caution Bay and the offshore export pipeline corridor. This pattern was also indicated in the TSS data, with higher TSS levels at Orokolo Bay (up to 17 mg/L) compared to Caution Bay (up to 7 mg/L) and offshore export pipeline corridor sites (up to 14 mg/L).

The water depth data from the deployed instruments indicates that the tidal range at Orokolo Bay is approximately 1 m during neap tide and approximately 2 m during spring tide.

Water temperatures in Orokolo Bay (28 to 30˚C) were slightly warmer compared to Caution Bay and the offshore export pipeline corridor sites (26 to 30˚C).

In terms of other water quality parameters, concentrations of nutrients, metals/metalloids and hydrocarbons in Orokolo Bay were found to be low during both the dry season and wet season surveys. The only exceedances of water quality guideline values were slightly elevated concentrations of dissolved copper at one site during the dry season survey and dissolved mercury at one site during the wet season survey.

Offshore Export Pipeline Corridor

Water quality along the pipeline corridor is characterized by low turbidity (<7 NTU) and TSS (<14 mg/L), pH around 8.0, and low concentrations of metals/metalloids and nutrients. Higher turbidity and TSS were generally found in bottom waters. The only exceedance of water quality guideline values for metals/metalloids was a slight exceedance of dissolved copper at one site during the wet season survey.

Water quality during both the dry season and wet season surveys was relatively consistent throughout the water column, with DO levels greater than 80% even at water depths greater than 50 m.

Electrical conductivity and salinity at sites along the offshore export pipeline corridor were consistent through the water column during the dry season survey, but lower in surface waters during the wet season survey. This indicates that wet season freshwater flows may have diluted the surface water layers (top 10 to 20 m) in the offshore marine areas at the time of sampling.

During the wet season survey, the four monitoring sites at the eastern extent of the pipeline route had slightly different water quality to other sites, with higher EC and pH values compared to other sites along the pipeline corridor.

Caution Bay

Caution Bay sites had lower turbidity and TSS, higher DO and nutrients, and lower concentrations of metals/metalloids than sites in Orokolo Bay and the offshore export pipeline corridor. This is expected to be due to the lack of significant freshwater inputs into Caution Bay and the area being less exposed to southeast trade winds.

Water quality at Caution Bay is characterized by relatively clear waters with low turbidity (<2 NTU) and TSS (<2 mg/L) during the dry season. Levels of turbidity (up to 8 NTU) and TSS (up to 7 mg/L) were higher during the wet season survey, consistent with previous studies conducted for the PNG LNG Project EIS which found a higher suspended sediment levels during the wet season than the dry season (CNS, 2008b).

DO levels were above 90% at all sites during both surveys. Caution Bay sites also had low concentrations of nutrients, metals/metalloids and hydrocarbons, with only one slight exceedance of water quality guideline values for ammonia.

6.3 Sediment Quality Conditions

6.3.1 Particle Size Distribution

Particle size distribution (PSD) data collected in surface sediments in June-July 2016 (dry season survey) are provided in Table 6-12 and in Figure 6-16. Samples from sites M45 and M46 were collected in January 2017 (wet season survey). Samples were not collected at Caution Bay due to risk from UXOs during the present survey but were taken as part of the PNG LNG Project EIS (CNS, 2008b). Appendix A shows plates of sediment samples.

The PSD data indicates that bed sediment composition (surface sediments) at monitoring sites in the study areas of Orokolo Bay and the offshore export pipeline corridor was predominantly silts and clays, with most sites having a proportion of silts and clays greater than 90%. The remaining proportion comprised sands (~5 to 10%). The exceptions to this were sites M7 and M45 in Orokolo Bay and Site M37 along the offshore export pipeline corridor, which had a much higher proportion of sands (55 to 66%). Site M45 at the Purari River mouth had the highest proportion of sand at 90%.

The PSD data obtained for Caution Bay for the PNG LNG Project EIS indicates that the substrate is predominantly comprised of sandy sediments. The exception is areas dominated by corals where sediments are characterized by larger particle size fractions associated with coral rubble and shell debris (CNS, 2009). Sediments within the (then) proposed shipping channel, near coastal mangrove habitat, and at Idihi Island were characterized by silt. This aligns with benthic habitat mapping data collected during the January 2017 survey – see Marine Biodiversity Baseline Report (BMT WBM, 2017c).

Table 6-12 Particle Size Distribution for Orokolo Bay and Offshore Export Pipeline Corridor

Site	Clay (<2 µm)	Silt (2-60 µm)	Sand (0.06-2 mm)	Gravel (>2 mm)	Cobbles (>6 cm)
	%	%	%	%	%
Orokolo Bay					
M1	28	66	6	<1	<1
M2	45	52	3	<1	<1
M3	39	56	5	<1	<1
M4	45	52	3	<1	<1
M5	21	73	6	<1	<1
M6	27	71	2	<1	<1
M7	20	25	55	<1	<1
M8	27	64	9	<1	<1
M9	42	53	5	<1	<1
M10	33	61	6	<1	<1
M11	39	58	3	<1	<1
M12	49	49	2	<1	<1
M45^	6	3	91	<1	<1
M46^	23	74	3	<1	<1
Offshore Export Pipeline Corridor					
M25	40	56	4	<1	<1
M31	52	43	5	<1	<1
M37	22	12	66	<1	<1
M43	41	55	4	<1	<1

^ Samples at M45 and M46 were collected in January 2017. Samples from all other sites were collected in June-July 2016

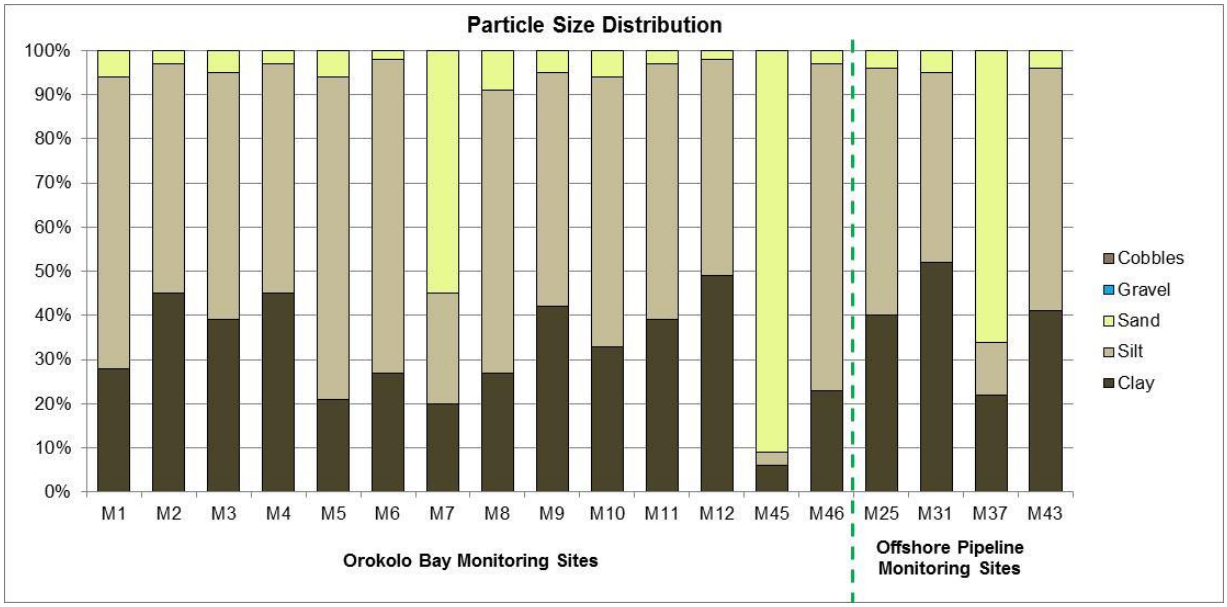


Figure 6-16 Particle Size Distribution Data for Orokolo Bay and Offshore Export Pipeline Corridor Sites

6.3.2 Metals and Metalloids

Metals/metalloids in sediment data collected in June-July 2016 (and January 2017 for sites M45 and M46) are presented in Table 6-13. These relate to sites at Orokolo Bay and the offshore export pipeline corridor.

Total metal/metalloid concentrations are compared to Simpson *et al.* (2013) sediment quality guidelines as detailed in Section 5.5. These sediment guidelines give a low value (SQGV), below which ecotoxicological effects are unlikely to occur and a high value (SQG-high), above which ecotoxicological effects are possible.

Data are also compared to criteria specified in Schedule 2 of the Marine Pollution (Sea Dumping) Regulation 2014 (PNG MPR). These criteria (which are similar to the Simpson *et al.* 2013 SQGVs) are for assessment of dredged material proposed to be placed at sea. Material that does not meet these criteria is considered to require further risk-based assessment to determine suitability for disposal at sea, or otherwise placed onshore.

Table 6-13 indicates that concentrations of metals/metalloids in sediment are relatively consistent between monitoring sites, with all concentrations below sediment quality guideline values. The exception to this is nickel, which exceeded the SQGV at all sites (however, all sites were lower than the SQG-High). However, it is not unusual for nickel concentrations in sediment in Papua New Guinea (and Australia) to exceed the guideline values, and the elevated nickel is likely attributable to naturally elevated background levels associated with geological origin.

Results for sites M7 and M45 at Orokolo Bay and Site M37 along the offshore export pipeline corridor near Yule Island are slightly different to other sites in that they had lower concentrations of some metals (e.g. Al, Cu, Fe and Ni), likely reflecting the lower proportion of fine-grained sediments at these sites (see Section 6.3.1). This reflects the tendency of trace metals/metalloids to bind more readily to finer sediment fractions than sands and gravels that are often dominated by silicates.

While no sediment sampling was undertaken as part of the present study at Caution Bay, sampling and analysis was conducted in this area as part of the PNG LNG Project EIS (CNS, 2008a; 2008b). These assessments identified the following:

- Elevated concentrations of nickel were recorded in sediment samples at Caution Bay, being close to or exceeding the ANZECC/ARMCANZ (2000) sediment guidelines at some sites.[4] This is similar to the findings of the present study at Orokolo Bay and the offshore export pipeline corridor where nickel exceeded the SQGV at all sites.
- All other metals/metalloids concentrations were within guideline limits.

[4] As the Simpson *et al.* (2013) updates were not in place at the time of the sampling for the PNG LNG Project EIS the ANZECC/ARMCANZ (2000) guidelines were adopted. For the parameters listed the only difference in guideline values is that the SQG-High for silver is 4 mg/kg in Simpson and 3.7 mg/kg in ANZECC.

Table 6-13 Total Metals/metalloids in Sediment (mg/kg)

Site	Sb	Al	As	Ba	Be	Cd	Cr	Co	Cu	Fe	Pb	Mn	Hg	Mo	Ni	Se	Ag	Sr	Tl	Sn	V	Zn
Orokolo Bay																						
M1	<0.1	32,600	11	20	0.6	<0.1	59.1	20	43.8	51,600	8	742	<0.1	0.3	44.8	<1	<0.1	35	<0.1	<5	94	84.3
M2	<0.1	35,300	11	10	0.7	<0.1	53.5	19	51.9	54,200	10.7	640	<0.1	0.4	45.5	<1	<0.1	53	<0.1	<5	94	93.2
M3	0.1	37,900	10	10	0.7	<0.1	67.7	22	61.5	55,800	11.2	708	<0.1	0.6	51.2	<1	0.6	50	<0.1	<5	108	95.6
M4	<0.1	39,400	14	20	0.7	<0.1	68.6	22	60.8	56,200	11.2	869	<0.1	0.5	51.6	<1	0.4	51	<0.1	<5	112	94.6
M5	<0.1	30,100	6	10	0.5	<0.1	57.6	20	36.4	48,100	7.3	661	<0.1	0.3	41.3	<1	<0.1	28	<0.1	<5	89	79.1
M6	<0.1	34,400	10	20	0.6	<0.1	63.7	22	39.4	54,300	8.4	708	<0.1	0.3	47.6	<1	0.1	35	<0.1	<5	100	87.9
M7	<0.1	22,200	6	10	0.4	<0.1	46.8	17	18.6	41,500	6	553	<0.1	0.1	34.4	<1	<0.1	10	<0.1	<5	81	69
M8	<0.1	30,500	6	10	0.5	<0.1	57.6	20	37	48,700	7.8	658	<0.1	0.2	42.6	<1	<0.1	32	<0.1	<5	90	79.4
M9	0.1	40,600	11	10	0.8	<0.1	64.4	21	64.6	55,600	11.8	736	<0.1	0.5	49.6	<1	0.6	52	<0.1	<5	108	95.7
M10	<0.1	40,000	11	20	0.7	<0.1	71	24	59.3	57,800	10.5	817	<0.1	0.6	51.5	<1	0.2	53	<0.1	<5	112	92.2
M11	<0.1	35,800	12	20	0.7	<0.1	54.7	20	54.9	55,600	11.1	1,080	<0.1	0.4	46.0	<1	<0.1	60	<0.1	<5	100	95.1
M12	<0.1	39,800	12	20	0.8	<0.1	63	22	53.3	59,000	11.5	810	<0.1	0.4	50.8	<1	<0.1	55	<0.1	<5	108	99.7
M45^	<0.1	20100	5	50	0.5	<0.1	41.6	22.4	22.9	41400	8.7	621	<0.1	0.2	39.8	<1	<0.1	51	<0.1	<5	84	66
M46^	0.1	33400	10	30	0.7	<0.1	56.6	21.1	53	55300	13.2	836	<0.1	0.4	46.4	<1	<0.1	88	<0.1	<5	110	93.5
Offshore Export Pipeline Corridor																						
M25	0.1	39,300	11	10	0.8	<0.1	59.2	20	46.4	55,300	11.4	698	<0.1	0.4	47.4	<1	<0.1	50	<0.1	<5	96	97.2
M31	0.2	41,000	8	20	0.8	<0.1	58.3	19	33.7	56,400	12.5	756	<0.1	0.3	50.0	<1	<0.1	74	<0.1	<5	88	97.4
M37	0.3	25,200	22	20	0.7	<0.1	49.8	14	19	44,000	8.7	675	<0.1	0.3	38.2	<1	<0.1	370	<0.1	<5	61	62.2
M43	0.4	35,900	19	30	0.7	<0.1	61.2	18	35.6	52,800	15.3	1,030	0.1	0.4	44.7	<1	<0.1	170	<0.1	<5	78	87.5
PNG MPR	*2*	*-*	*20*	*-*	*-*	*1.5*	*80*	*-*	*65*	*-*	*50*	*-*	*0.15*	*-*	*21*	*-*	*1*	*-*	*-*	*-*	*-*	*200*
SQGV	*2*	*-*	*20*	*-*	*-*	*1.5*	*80*	*-*	*65*	*-*	*50*	*-*	*0.15*	*-*	*21*	*-*	*1*	*-*	*-*	*-*	*-*	*200*
SQG-High	*25*	*-*	*70*	*-*	*-*	*10*	*370*	*-*	*270*	*-*	*220*	*-*	*1*	*-*	*52*	*-*	*4*	*-*	*-*	*-*	*-*	*410*
LORs	*0.1*	*50*	*1*	*10*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*50*	*0.1*	*0.1*	*0.1*	*0.1*	*0.1*	*1*	*0.1*	*2*	*0.1*	*5*	*1*	*0.5*

Note: Yellow highlight indicates exceedance of the SQGV / PNG MPR indicating possible ecotoxicological effects. Red highlight indicates exceedance of the SQG-High guideline value indicating likely ecotoxicological effects.
^ Samples at M45 and M46 were collected in January 2017. Samples from all other sites were collected in June-July 2016

6.3.3 Nutrients and Organic Material

Nutrients, organic matter and organic carbon data collected in June-July 2016 (and January 2017 for sites M45 and M46) are presented in Table 6-14.

This data indicates that sites with higher percentages of organic matter/carbon generally had higher concentrations of nutrients. These sites included sites M1 to M4 and M9 to M12 in Orokolo Bay, and most sites along the offshore export pipeline corridor.

The three sites which had lower proportions of silts and clays in bed sediments (sites M7, M37 and M45 – see Section 6.3.1) also had lower concentrations of nutrients and organic material.

Table 6-14 Nutrients, Total Organic Matter and Total Organic Carbon in Sediment

Site	Nutrients				Total Organic Matter	Total Organic Carbon
	Nitrogen Oxides	Total Kjeldahl Nitrogen	Total Nitrogen	Total Phosphorus		
	mg/kg	mg/kg	mg/kg	mg/kg	%	%
Orokolo Bay						
M1	<0.1	1,080	1,080	613	3.1	1.8
M2	<0.1	1,590	1,590	744	3.6	2.1
M3	<0.1	1,840	1,840	608	7.2	4.2
M4	0.1	1,810	1,810	619	5.8	3.4
M5	0.1	870	870	564	2.5	1.4
M6	<0.1	930	930	580	3.1	1.8
M7	0.2	350	350	478	0.8	<0.5
M8	<0.1	850	850	583	2.4	1.4
M9	<0.1	1,940	1,940	661	5.9	3.4
M10	<0.1	1,810	1,810	683	6.2	3.6
M11	<0.1	1,610	1,610	773	3.9	2.2
M12	0.1	1,420	1,420	714	3.9	2.3
M45^	1.5	420	420	682	0.5	<0.5
M46^	<0.1	710	710	505	3.2	1.8
Offshore Export Pipeline Corridor						
M25	<0.1	1,600	1,600	804	4.0	2.3
M31	<0.1	1,560	1,560	869	2.7	1.5
M37	<0.1	720	720	697	1.1	0.6
M43	<0.1	1,650	1,650	887	1.0	0.6
LORs	*0.1*	*20*	*20*	*2*	*0.5*	*0.5*

^ Samples at sites M45 and M46 were collected in January 2017. Samples from all other sites were collected in June-July 2016

6.3.3.1 *Hydrocarbons*

The hydrocarbon data, including PAHs, TPHs, TRHs and BTEXN, is included in Appendix C.

All data for all sites were below the laboratory LORs and below relevant sediment quality guideline values.

6.3.4 Comparison to Other Studies

As noted in Section 4.1, sediment quality studies have previously been undertaken in the study area. Results from the PNG LNG Project EIS at Caution Bay are discussed above. Other results that overlap with the study area are:

- PNG LNG Project EIS sediment sampling results for the offshore export pipeline corridor (CNS, 2009). This study also presents results from the western part of the Gulf of Papua which provide regional context for result obtained during the present study.
- Sediment particle size analysis results from a study of a potential pipeline route linking Kerema and Port Moresby. This study area intersects with part of the offshore export pipeline corridor and also provides regional information at the northern and southern ends of the eastern Gulf of Papua.

Both studies have identified sediment particle size characteristics (in surface sediments) that are similar to those identified in the June-July 2016 and January 2017 surveys. Similar sediment characteristics were also observed across most of the eastern and western gulf, i.e. predominantly silts and clays in surface sediments, with higher proportions of sands in nearshore areas, especially near mouths of large rivers.

6.3.5 Summary of Sediment Quality Conditions

Sediment quality data indicates that bed sediment composition in surface sediments at sampling sites in the study area are predominantly silts and clays, with most sites having a proportion of silts and clays greater than 90%. The remaining proportion comprises sands (~5 to 10%). The exceptions to this were sites M7 and M45 in Orokolo Bay and Site M37 along the offshore export pipeline corridor near Yule Island, which had a much higher proportion of sands (55 to 66%). Site M45 at the Purari River mouth had the highest proportion of sand at 90%.

Concentrations of metals/metalloids in sediment were relatively consistent between monitoring sites, with all concentrations below sediment quality guideline values. The exception to this is nickel, which exceeded the SQGV at all sites, and is attributed to naturally elevated background levels associated with geological origin.

Results for sites M7 and M45 at Orokolo Bay and Site M37 along the offshore export pipeline corridor near Yule Island are slightly different to other sites in that they had lower concentrations of some metals (e.g., Al, Cu, Fe and Ni), nutrients and organic material, reflecting the lower proportion of fine sediments at these sites. This reflects the tendency of trace metals/metalloids and nutrients to bind more readily to finer sediment fractions than sands and gravels that are often dominated by silicates.

Hydrocarbons were not detected above the laboratory LORs in sediments at any sites.

6.4 Quality Control Samples

As part of the quality assurance program, the following field quality control samples (water and sediment) were collected:

- *Duplicates* – Water samples were split into two duplicate sub-samples and tested as separate (blind) samples by the laboratory. Duplicates were collected at 10% of monitoring sites.
- *Triplicates* – Water samples were split into three sub-samples and tested as separate (blind) samples by the primary laboratory and a second laboratory. Triplicates were collected at 5% of monitoring sites.
- *Field Blank* – Samples taken in the field using laboratory supplied solution which is placed into sample containers the same way as normal samples (i.e. using sampling equipment such as the sample pole, syringes and filters). Field blanks are typically taken once per monitoring event, and are used to test for sample contamination from sampling personnel, equipment, or the atmosphere. One field blank was taken during each field survey.
- *Trip blanks* – Used in monitoring programs when testing for volatile substances (such as hydrocarbons) to test for sample contamination during transport of samples. One trip blank was taken during each field survey.

Relative Percent Difference

To assess whether laboratory results from primary and quality control samples were within an acceptable range, the relative percent difference (RPD) between replicate samples was determined. RPD was calculated using the following equation:

$$RPD(\%) = \frac{|X_1 - X_2|}{\overline{X}} \times 100$$

where: X_1 = primary sample, X_2 = duplicate sample, and $\overline{X}$ = mean of results

An acceptable RPD varies depending on how close the concentration is to the laboratory LOR. The closer to the LOR, the more variability is expected between results. Therefore, RPD acceptability was deemed as being:

- 0-100%+ when concentration is less than 5 times the LOR.
- 0-75% when concentration is 5 to 10 times the LOR.
- 0-50% when concentration is greater than 10 times the LOR.

The results of the RPD analysis indicated that the majority (~99%) of primary samples and quality control samples were within the acceptable RPD range for water and sediment samples. There were a few isolated exceptions including TSS, vanadium, iron, aluminum, ammonia and phosphorus outside of the acceptable RPD range in some samples.

In regard to the field blank samples, concentrations of metals/metalloids, nutrients and hydrocarbons were all below the laboratory LOR. Furthermore, the trip blank samples had concentrations of hydrocarbons all below the laboratory LOR.

Therefore, based on the overall results of field replicate and blank samples, and the internal laboratory quality control analysis results provided in the laboratory reports, data obtained is considered to be reliable.

7 Summary and Conclusions

The Papua LNG Project has the potential to cause impacts to marine water and sediment quality at coastal, nearshore and offshore areas of the Gulf of Papua, between the Purari River and Caution Bay. While some previous studies have been conducted in these areas, further studies were undertaken to describe the existing environment for a future EIS/ESHIA.

These further studies involved dry season and wet season surveys across three broad study areas, including Orokolo Bay, the offshore export pipeline corridor and Caution Bay. The level of baseline data collection was extensive, and is considered sufficient to characterize the existing marine water and sediment environment.

The findings of the present study generally reflected the findings from previous studies in and adjacent to the study area. Furthermore, data collection for the present study was undertaken during fairly typical environmental conditions.

The key findings of the baseline characterization are as follows:

- Water quality at Orokolo Bay is strongly influenced by freshwater discharges from the Purari River. The influence of these freshwater discharges is illustrated in the water quality profiling data which indicated lower EC and salinity (~35,000 µS/cm) in surface waters (top 10 m) at monitoring sites at Orokolo Bay, compared to bottom waters in Orokolo Bay and other sites along the offshore export pipeline corridor and in Caution Bay (~55,000 µS/cm). The presence of this freshwater lens in the surface water layer (i.e. stratification) was more pronounced during the dry season survey relative to the wet season survey.
- The influence of Purari River discharges was greatest at the mouth, where EC in surface layers was ~2,000 µS/cm while EC in bottom waters was ~40,000 µS/cm. This data indicates the presence of a salt wedge at the mouth of the Purari River (i.e. freshwater overlying saline water). Furthermore, large spikes in turbidity at the Purari River mouth were coincident with a large slug of turbid water from rainfall in the Purari catchment.
- The deployed instrument data indicates that turbidity in Orokolo Bay is predominantly generated from wind and wave driven resuspension, with lower turbidity during calmer weather conditions and higher turbidity during periods of higher wind weather conditions and rougher seas.
- Turbidity and TSS levels were mostly lower during the dry season survey compared to the wet season survey at all sites. Turbidity levels were generally higher in Orokolo Bay compared to Caution Bay and offshore export pipeline corridor site. This pattern was also indicated in the TSS data, with higher TSS levels at Orokolo Bay (up to 17 mg/L) compared to Caution Bay (up to 7 mg/L) and offshore export pipeline corridor sites (up to 14 mg/L).
- The tidal range in Orokolo Bay is approximately 1 m during neap tides and approximately 2 m during spring tides.
- Water temperature was fairly consistent at all sites, with temperatures between 26°C and 30°C. Slightly warmer temperatures (1 to 2°C higher) were recorded during the wet season survey, and slightly warmer temperature was recorded in surface waters at most sites.
- Concentrations of nutrients, metals/metalloids and hydrocarbons in the study area were mostly below limits of reporting or only present in low concentrations during the dry season and wet season surveys. The only exceedances of water quality guideline values were slightly elevated

concentrations of dissolved copper at one site at Orokolo Bay during the dry season survey, dissolved mercury at one site at Orokolo Bay during the wet season survey, and ammonia at one site in Caution Bay during the wet season survey. In general, ammonia concentrations were higher during the wet season survey across the study area.

- Water quality along the offshore export pipeline corridor is characterized by low turbidity (<10 NTU) and TSS (<15 mg/L), pH around 8.0, and low concentrations of metals/metalloids and nutrients. Higher turbidity and TSS were generally found in bottom waters along the offshore pipeline route. Water quality during both the dry season and wet season surveys was relatively consistent throughout the water column, with dissolved oxygen levels greater than 80% saturation even at water depths greater than 50 m.
- Electrical conductivity and salinity at sites along the offshore export pipeline corridor were consistent through the water column during the dry season survey, but lower in surface waters during the wet season survey. This indicates that wet season freshwater flows may have diluted the surface water layers (top 10 to 20 m) in the offshore marine areas at the time of sampling. During the wet season survey, the four monitoring sites at the eastern extent of the offshore export pipeline corridor had slightly different water quality to other sites, with higher EC and pH values compared to other sites along the pipeline corridor.
- Caution Bay sites had lower turbidity and TSS and higher dissolved oxygen than sites in Orokolo Bay and the offshore export pipeline corridor. This is likely due to the lack of freshwater inputs into Caution Bay and the area being more sheltered from southeast trade winds. Turbidity and TSS was higher during the wet season survey at Caution Bay.
- Dissolved oxygen levels were above 90% saturation at all sites during both surveys at Caution Bay, and all sites had low concentrations of nutrients, metals/metalloids and hydrocarbons, with only one slight exceedance of water quality guideline values for ammonia.
- Sediment quality data indicates that bed sediment composition at monitoring sites in the study area are predominantly silts and clays, with most sites having a proportion of silts and clays greater than 90%. The remaining proportion comprises sands (~5 to 10%). The exceptions were sites M7 and M45 in Orokolo Bay and Site M37 along the offshore export pipeline corridor near Yule Island, which had a much higher proportion of sands (55 to 66%). Site M45 at the Purari River mouth had the highest proportion of sand at 90%.
- Concentrations of nutrients, metals/metalloids and hydrocarbons in the study area were mostly below limits of reporting or only present in low concentrations during the dry season and wet season surveys. The only exceedances of water quality guideline values copper at one site at Orokolo Bay during the dry season survey and dissolved mercury at one site at Orokolo Bay during the wet season survey. However, the concentrations measured in these samples were just above the limit of reporting where large variations in analytical results can be expected to occur.
- Total and dissolved concentrations of metals/metalloids were relatively consistent between dry and wet season surveys and between sites, with concentrations mostly similar between total and dissolved (except for aluminum and iron) and between different dissolved metals/metalloids (except for strontium). Strontium is a natural constituent of seawater and therefore typically found in high concentrations in the marine environment. Generally, concentrations of metals/metalloids were relatively similar in samples collected in surface, middle and bottom layers of the water column.

- Sediment quality results for sites M7 and M45 at Orokolo Bay and Site M37 along the offshore export pipeline corridor near Yule Island are slightly different to other sites in that they had lower concentrations of some metals (e.g., aluminum, copper, iron and nickel) and nutrients, reflecting the lower proportion of fine-grained sediments at these sites. This reflects the tendency of metals/metalloids and nutrients to bind more readily to finer sediment fractions than sands and gravels that are often dominated by silicates.
- Hydrocarbons were not detected above the laboratory LORs in sediments at any sites.
- Overall, the study area supports a high level of water and sediment quality with no evidence of anthropogenic contamination, although with some naturally elevated concentrations of metals/metalloids. Turbidity and physicochemical properties of water is highly variable across seasons due to changes in sea state conditions and fluvial inflows, and also varies based on proximity to river mouths, such as the Purari, Vailala and Vaihua rivers.

8 Study Team

The study team responsible for the preparation of the Upstream Marine Water and Sediment Quality ESBS report are listed in Table 8-1 below.

Table 8-1 Marine Water and Sediment Quality Study Team

Personnel	Position	Qualifications
Dr Darren Richardson	Study Director	Bachelor of Applied Science (Honors) Doctor of Philosophy (Ecology)
Brad Grant	Technical Lead for Marine Water and Sediment Quality	Bachelor of Environmental Science
Jeremy Visser	Study Coordinator	Bachelor of Laws Bachelor of Environmental Management
Lyn Leger	Study Manager	Bachelor of Laws Bachelor of Science (Honors) Master of Laws

9 Glossary and Abbreviations

Units of measurement		
% sat	Percentage saturation	Measure of dissolved oxygen
CFU/100mL	Colony forming unit per 100 milliliters	Bacteriological analysis measure
mg/kg	Milligrams per kilogram	Measure of concentration in sediment
mg/L	Milligrams per liter	Measure of concentration in liquid
µg/L	Micrograms per liter	Measure of concentration in liquid
µS/cm	microSiemens per centimeter	Measure of salinity/electrical conductivity
Abbreviations and terms		
ALS	Australian Laboratory Services	
ANZECC	Used as a short-form abbreviation to reference ANZECC/ARMCANZ (2000) water quality guidelines	
ANZECC/ARMCANZ	Australian and New Zealand Environment and Conservation Council / Agriculture and Resource Management Council of Australia and New Zealand	
APHA	American Public Health Association	
BTEX	Benzene-toluene-ethylbenzene-xylene	
BTEXN	Benzene-toluene-ethylbenzene-xylene-naphthalene	
Caution Bay	Subset of the study area, including all the waters of Caution Bay	
CEPA	Conservation and Environment Protection Authority of Papua New Guinea	
CFU	Colony-forming unit	
CNS	Coffey Natural Systems	
CPF	Central Processing Facility	
DO	Dissolved oxygen	
EC	Electrical conductivity	
EHS Guideline	Environment, Health and Safety Guidelines, developed by the IFC as representation of good international industry practice	
EIS	Environmental Impact Statement	
ESBS	Environmental and Social Baseline Study	
ESHIA	Environment, Social and Health Impact Assessment	
FRP	Filterable reactive phosphorus	
GL-ENV/02/2004	*Guideline for Conduct of Environmental Impact Assessment & Preparation of Environmental Impact Statement*, prepared by (former) Department of Environment and Conservation (2004)	
GS EP ENV 120	*Environmental impact Assessment of E&P activities*, General Specification prepared by TOTAL (2007)	
GS EP ENV 111	*Environmental Baseline and Monitoring Studies: Onshore Sites*, General Specification prepared by TOTAL (2012)	
GS EP ENV 112	*Environmental Baseline and Monitoring Studies: Offshore and Nearshore Sites*, General Specification prepared by TOTAL (2012)	
IFC	International Finance Corporation	
IPIECA	International Petroleum Industry Environmental Conservation Association	
LNG	Liquid natural gas	
LOR	Limit of reporting	

NFA	National Fisheries Authority
NEPM	National Environment Protection Measures
NMSA	National Maritime Safety Authority
NTU	Nephelometric turbidity units
NOx	Nitrous oxides
OECD	Organization for Economic Cooperation and Development
Offshore export pipeline corridor	Subset of the study area based on the offshore export pipeline corridor defined for the Project
Orokolo Bay	Subset of the study area, including the waters between the Purari and Vaihua river mouths, as far seaward as the offshore export pipeline corridor
PAH	Polynuclear aromatic hydrocarbon
Papua LNG	Gas extraction, transport and processing project proposed by TEP PNG. Involves operation of Elk-Antelope gasfields in Gulf Province, and onshore and subsea pipeline via Orokolo Bay to LNG Plant at Caution Bay, Central Province
PDL	Petroleum Development License
PL	Pipeline License
PNG LNG	Gas extraction, transport and processing project operated by ExxonMobil. Involves operation of gasfields in Hela and Western Provinces, and onshore and subsea pipeline to LNG Plant at Caution Bay, Central Province
PNG ER	Used as a short-form abbreviation to reference water quality guidelines in Schedule 1 of the Environment (Water Quality Criteria) Regulation 2002
PNG MPR	Used as a short-form abbreviation to reference sediment contaminant screening levels in Schedule 2 of the Marine Pollution (Sea Dumping) Regulation 2014
PPFL	Petroleum Processing Facility License
ppt	Parts per thousand
PRL	Petroleum Retention License
Project	The Papua LNG Project
PSD	Particle size distribution
RPD	Relative percent difference
SQGV	Used as a short-form abbreviation to reference sediment quality guideline values determined by Simpson *et al.* (2013). Relates to contamination levels for sediment below which ecotoxicological effects are not expected.
SQG-High	Used as a short-form abbreviation to reference subset of sediment quality guidelines values determined by Simpson *et al.* (2013), i.e. provides concentration levels for sediment above which ecotoxicological effects are possible.
Study Area	The area which is the focus of this ESBS report, consisting of the following three subsets: (i) Orokolo Bay and waters offshore of the Purari River delta (ii) Offshore export pipeline corridor (iii) Caution Bay
TEP PNG	Total E&P Papua New Guinea
TKN	Total Kjeldahl nitrogen
TN	Total nitrogen
TP	Total phosphorus
TPH	Total petroleum hydrocarbons

TRH	Total recoverable hydrocarbons - TRH is the same as TPH except that the TRH carbon chain fractions are reported slightly differently to allow correlation with health screening levels in the National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 (No 1)
TSS	Total suspended solids
UTM	Universal Trans Mercator
USEPA	United States Environmental Protection Agency
UXO	Unexploded ordnance
WGS	World Geodetic System

10 References

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Appendix A Water and Sediment Sampling Techniques



***Browse Enterprise*, vessel used for field surveys[5]**

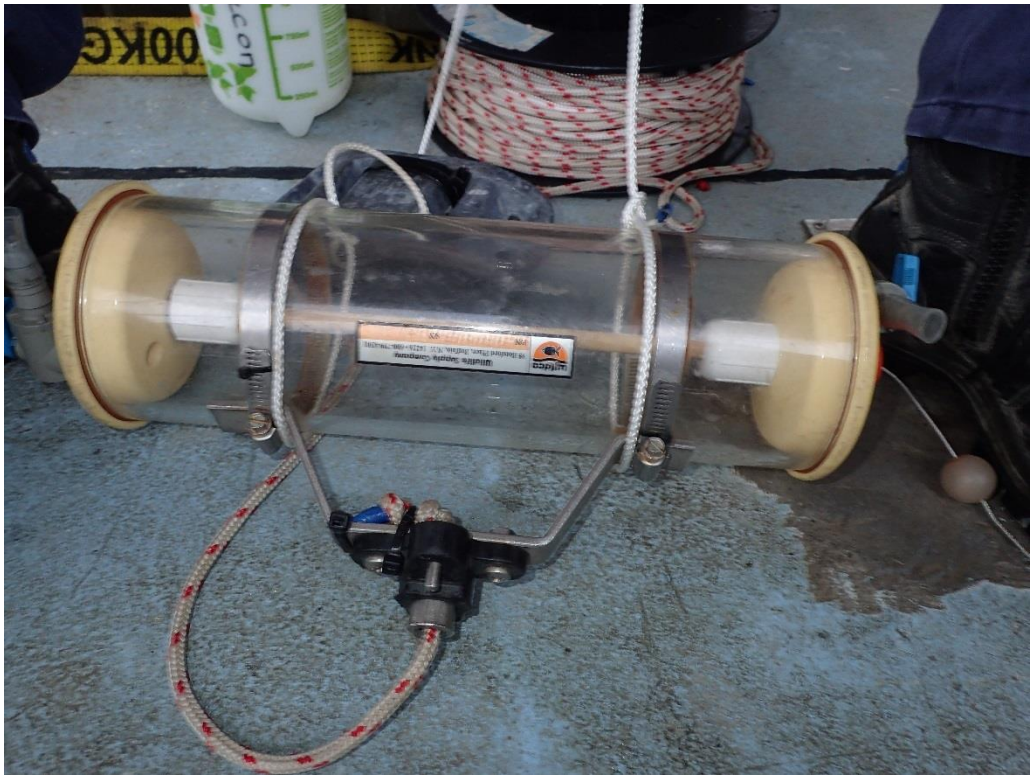


Marine sediment sampling using Van Veen grab

[5] Photo from specification sheet for vessel: http://www.questmaritimeservices.com.au/documents/specs/Quest-Maritime-Services-Browse-Enterprise-Specifications.pdf



Transfer of marine sediment sample to container



Water quality sampling container (Van Dorn – used on first survey)



Marine water sampling (mid and bottom)



Deployment of water quality instrument for continuous logging



Instrument deployment

Appendix B Hydrocarbon Data – Water

Table B-1 Orokolo Bay - PAH in Water – Dry Season

Site	Depth Profile	Polynuclear Aromatic Hydrocarbons																	
		Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b+j)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1.2.3.cd)pyrene	Dibenz(a.h)anthracene	Benzo(g.h.i)perylene	Sum of polycyclic aromatic hydrocarbons	Benzo(a)pyrene TEQ (zero)
		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
Orokolo Bay																			
M1-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M1-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M2-S	Surface	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
M2-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M3-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M3-M	Middle	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M3-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M4-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M4-M	Middle	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M4-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M5-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M5-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M6-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M6-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M7-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M7-D	Bottom	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----
M8-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M8-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M9-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M9-M	Middle	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M9-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M10-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M10-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M11-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M11-M	Middle	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M11-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M12-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M12-M	Middle	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M12-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5

NOTE: Results are not available for all sampling locations as some sample bottles were broken in transit

Table B-2 Orokolo Bay - PAH in Water – Wet Season

Site	Depth Profile	Polynuclear Aromatic Hydrocarbons																	
		Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b+j)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1.2.3.cd)pyrene	Dibenz(a.h)anthracene	Benzo(g.h.i)perylene	Sum of polycyclic aromatic hydrocarbons	Benzo(a)pyrene TEQ (zero)
		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
Orokolo Bay																			
M1-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M1-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M2-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M2-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M3-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M3-M	Middle	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M3-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M4-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M4-M	Middle	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M4-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M5-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M5-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M6-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M6-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M7-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M7-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M8-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M8-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M9-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M9-M	Middle	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M9-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M10-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M10-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M11-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M11-M	Middle	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M11-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M12-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M12-M	Middle	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M12-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M45-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M45-B	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M46-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M46-M	Middle	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M46-B	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5

Table B-3 Caution Bay - PAH in Water – Dry Season

Site	Depth Profile	Polynuclear Aromatic Hydrocarbons																	
		Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b+j)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1.2.3.cd)pyrene	Dibenz(a.h)anthracene	Benzo(g.h.i)perylene	Sum of polycyclic aromatic hydrocarbons	Benzo(a)pyrene TEQ (zero)
		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
Caution Bay																			
M13-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M13-M	Middle	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M13-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M17-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M17-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M19-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M19-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M21-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M21-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M22-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M22-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5

Table B-4 Caution Bay - PAH in Water – Wet Season

Site	Depth Profile	Polynuclear Aromatic Hydrocarbons																	
		Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b+j)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1.2.3.cd)pyrene	Dibenz(a.h)anthracene	Benzo(g.h.i)perylene	Sum of polycyclic aromatic hydrocarbons	Benzo(a)pyrene TEQ (zero)
		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
Caution Bay																			
M13-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M13-M	Middle	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M13-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M15-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M15-M	Middle	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M15-B	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M16-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M16-M	Middle	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M16-B	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M17-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M17-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M19-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M19-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M20-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M20-B	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M21-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M21-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M22-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M22-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M23-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M23-B	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M24-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M24-M	Middle	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M24-B	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5

Table B-5 Offshore Export Pipeline Corridor - PAH in Water – Dry Season

Site	Depth Profile	Polynuclear Aromatic Hydrocarbons																	
		Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b+j)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1.2.3.cd)pyrene	Dibenz(a.h)anthracene	Benzo(g.h.i)perylene	Sum of polycyclic aromatic hydrocarbons	Benzo(a)pyrene TEQ (zero)
		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
Offshore Pipeline																			
M25-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M25-M	Middle	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M25-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M31-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M31-M	Middle	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M31-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M37-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M37-M	Middle	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M37-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M43-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M43-M	Middle	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M43-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5

Table B-6 Offshore Export Pipeline Corridor - PAH in Water – Wet Season

Site	Depth Profile	Polynuclear Aromatic Hydrocarbons																	
		Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b+j)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1.2.3.cd)pyrene	Dibenz(a.h)anthracene	Benzo(g.h.i)perylene	Sum of polycyclic aromatic hydrocarbons	Benzo(a)pyrene TEQ (zero)
		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
Caution Bay																			
Offshore Pipeline																			
M25-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M25-M	Middle	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M25-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M31-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M31-M	Middle	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M31-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M37-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M37-M	Middle	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M37-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M43-S	Surface	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M43-M	Middle	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5
M43-D	Bottom	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5	<0.5

Table B-7 Orokolo Bay - TPH/TRH in Water – Dry Season

Site	Depth Profile	Total Petroleum Hydrocarbons					Total Recoverable Hydrocarbons						
		C6 - C9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction	C10 - C36 Fraction (sum)	C6 - C10 Fraction	C6 - C10 Fraction minus BTEX (F1)	>C10 - C16 Fraction	>C16 - C34 Fraction	>C34 - C40 Fraction	>C10 - C40 Fraction (sum)	>C10 - C16 Fraction minus Naphthalene (F2)
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Orokolo Bay													
M1-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M1-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M2-S	Surface	<20	----	----	----	----	<20	<20	----	----	----	----	----
M2-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M3-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M3-M	Middle	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M3-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M4-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M4-M	Middle	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M4-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M5-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M5-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M6-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M6-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M7-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M7-D	Bottom	<20	----	----	----	----	<20	<20	----	----	----	----	----
M8-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M8-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M9-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M9-M	Middle	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M9-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M10-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M10-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M11-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M11-M	Middle	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M11-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M12-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M12-M	Middle	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M12-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100

NOTE: Results are not available for all sampling locations as some sample bottles were broken in transit

Table B-8 Orokolo Bay - TPH/TRH in Water – Wet Season

Site	Depth Profile	Total Petroleum Hydrocarbons					Total Recoverable Hydrocarbons						
		C6 - C9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction	C10 - C36 Fraction (sum)	C6 - C10 Fraction	C6 - C10 Fraction minus BTEX (F1)	>C10 - C16 Fraction	>C16 - C34 Fraction	>C34 - C40 Fraction	>C10 - C40 Fraction (sum)	>C10 - C16 Fraction minus Naphthalene (F2)
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Orokolo Bay													
M1-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M1-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M2-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M2-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M3-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M3-M	Middle	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M3-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M4-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M4-M	Middle	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M4-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M5-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M5-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M6-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M6-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M7-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M7-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M8-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M8-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M9-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M9-M	Middle	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M9-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M10-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M10-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M11-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M11-M	Middle	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M11-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M12-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M12-M	Middle	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M12-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M45-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M45-B	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M46-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M46-M	Middle	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M46-B	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100

Table B-9 Caution Bay - TPH/TRH in Water – Dry Season

Site	Depth Profile	Total Petroleum Hydrocarbons					Total Recoverable Hydrocarbons						
		C6 - C9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction	C10 - C36 Fraction (sum)	C6 - C10 Fraction	C6 - C10 Fraction minus BTEX (F1)	>C10 - C16 Fraction	>C16 - C34 Fraction	>C34 - C40 Fraction	>C10 - C40 Fraction (sum)	>C10 - C16 Fraction minus Naphthalene (F2)
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Caution Bay													
M13-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M13-M	Middle	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M13-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M17-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M17-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M19-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M19-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M21-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M21-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M22-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M22-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100

Table B-10 Caution Bay - TPH/TRH in Water – Wet Season

Site	Depth Profile	Total Petroleum Hydrocarbons					Total Recoverable Hydrocarbons						
		C6 - C9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction	C10 - C36 Fraction (sum)	C6 - C10 Fraction	C6 - C10 Fraction minus BTEX (F1)	>C10 - C16 Fraction	>C16 - C34 Fraction	>C34 - C40 Fraction	>C10 - C40 Fraction (sum)	>C10 - C16 Fraction minus Naphthalene (F2)
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Caution Bay													
M13-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M13-M	Middle	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M13-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M15-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M15-M	Middle	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M15-B	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M16-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M16-M	Middle	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M16-B	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M17-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M17-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M19-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M19-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M20-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M20-B	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M21-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M21-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M22-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M22-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M23-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M23-B	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M24-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M24-M	Middle	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M24-B	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100

Table B-11 Offshore Export Pipeline corridor - TPH/TRH in Water – Dry Season

Site	Depth Profile	Total Petroleum Hydrocarbons					Total Recoverable Hydrocarbons						
		C6 - C9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction	C10 - C36 Fraction (sum)	C6 - C10 Fraction	C6 - C10 Fraction minus BTEX (F1)	>C10 - C16 Fraction	>C16 - C34 Fraction	>C34 - C40 Fraction	>C10 - C40 Fraction (sum)	>C10 - C16 Fraction minus Naphthalene (F2)
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Offshore Pipeline													
M25-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M25-M	Middle	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M25-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M31-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M31-M	Middle	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M31-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M37-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M37-M	Middle	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M37-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M43-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M43-M	Middle	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M43-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100

Table B-12 Offshore Export Pipeline Corridor - TPH/TRH in Water – Wet Season

Site	Depth Profile	Total Petroleum Hydrocarbons					Total Recoverable Hydrocarbons						
		C6 - C9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction	C10 - C36 Fraction (sum)	C6 - C10 Fraction	C6 - C10 Fraction minus BTEX (F1)	>C10 - C16 Fraction	>C16 - C34 Fraction	>C34 - C40 Fraction	>C10 - C40 Fraction (sum)	>C10 - C16 Fraction minus Naphthalene (F2)
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Offshore Pipeline													
M25-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M25-M	Middle	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M25-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M31-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M31-M	Middle	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M31-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M37-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M37-M	Middle	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M37-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M43-S	Surface	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M43-M	Middle	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
M43-D	Bottom	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100

Table B-13 BTEXN in Water – Dry Season

Site	Depth Profile	BTEXN							
		Benzene	Toluene	Ethylbenzene	meta- & para-Xylene	ortho-Xylene	Total Xylenes	Sum of BTEX	Naphthalene
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Orokolo Bay									
M1-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M1-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M2-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M2-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M3-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M3-M	Middle	<1	<2	<2	<2	<2	<2	<1	<5
M3-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M4-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M4-M	Middle	<1	<2	<2	<2	<2	<2	<1	<5
M4-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M5-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M5-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M6-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M6-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M7-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M7-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M8-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M8-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M9-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M9-M	Middle	<1	<2	<2	<2	<2	<2	<1	<5
M9-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M10-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M10-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M11-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M11-M	Middle	<1	<2	<2	<2	<2	<2	<1	<5
M11-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M12-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M12-M	Middle	<1	<2	<2	<2	<2	<2	<1	<5
M12-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
Caution Bay									
M13-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M13-M	Middle	<1	<2	<2	<2	<2	<2	<1	<5
M13-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M17-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M17-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M19-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M19-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M21-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M21-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M22-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M22-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
Offshore Pipeline									
M25-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M25-M	Middle	<1	<2	<2	<2	<2	<2	<1	<5
M25-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M31-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M31-M	Middle	<1	<2	<2	<2	<2	<2	<1	<5
M31-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M37-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M37-M	Middle	<1	<2	<2	<2	<2	<2	<1	<5
M37-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M43-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M43-M	Middle	<1	<2	<2	<2	<2	<2	<1	<5
M43-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5

Table B-14 BTEXN in Water – Wet Season

Site	Depth Profile	BTEXN							
		Benzene	Toluene	Ethylbenzene	meta- & para-Xylene	ortho-Xylene	Total Xylenes	Sum of BTEX	Naphthalene
		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Orokolo Bay									
M1-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M1-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M2-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M2-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M3-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M3-M	Middle	<1	<2	<2	<2	<2	<2	<1	<5
M3-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M4-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M4-M	Middle	<1	<2	<2	<2	<2	<2	<1	<5
M4-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M5-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M5-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M6-S	Surface	<1	3	<2	<2	<2	<2	3	<5
M6-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M7-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M7-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M8-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M8-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M9-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M9-M	Middle	<1	<2	<2	<2	<2	<2	<1	<5
M9-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M10-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M10-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M11-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M11-M	Middle	<1	<2	<2	<2	<2	<2	<1	<5
M11-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M12-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M12-M	Middle	<1	<2	<2	<2	<2	<2	<1	<5
M12-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M45-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M45-B	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M46-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M46-M	Middle	<1	<2	<2	<2	<2	<2	<1	<5
M46-B	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
Caution Bay									
M13-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M13-M	Middle	<1	<2	<2	<2	<2	<2	<1	<5
M13-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M15-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M15-M	Middle	<1	<2	<2	<2	<2	<2	<1	<5
M15-B	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M16-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M16-M	Middle	<1	<2	<2	<2	<2	<2	<1	<5
M16-B	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M17-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M17-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M19-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M19-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M20-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M20-B	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M21-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M21-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M22-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M22-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M23-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M23-B	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M24-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M24-M	Middle	<1	<2	<2	<2	<2	<2	<1	<5
M24-B	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
Offshore Pipeline									
M25-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M25-M	Middle	<1	<2	<2	<2	<2	<2	<1	<5
M25-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M31-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M31-M	Middle	<1	<2	<2	<2	<2	<2	<1	<5
M31-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M37-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M37-M	Middle	<1	<2	<2	<2	<2	<2	<1	<5
M37-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5
M43-S	Surface	<1	<2	<2	<2	<2	<2	<1	<5
M43-M	Middle	<1	<2	<2	<2	<2	<2	<1	<5
M43-D	Bottom	<1	<2	<2	<2	<2	<2	<1	<5

Appendix C Hydrocarbon Data – Sediment

Table C-1 PAH in Sediment

Site	Polynuclear Aromatic Hydrocarbons																			
	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b+j)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1.2.3.cd)pyrene	Dibenz(a.h)anthracene	Benzo(g.h.i)perylene	Sum of polycyclic aromatic hydrocarbons	Benzo(a)pyrene TEQ (zero)	Benzo(a)pyrene TEQ (half LOR)	Benzo(a)pyrene TEQ (LOR)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Orokolo Bay																				
M1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
M2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
M3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
M4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
M5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
M6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
M7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
M8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
M9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
M10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
M11	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
M12	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
Offshore Pipeline																				
M25	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
M31	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
M37	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2
M43	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2

Table C-2 TPH/TRH in Sediment

Site	Total Petroleum Hydrocarbons					Total Recoverable Hydrocarbons						
	C6 - C9 Fraction	C10 - C14 Fraction	C15 - C28 Fraction	C29 - C36 Fraction	C10 - C36 Fraction (sum)	C6 - C10 Fraction	C6 - C10 Fraction minus BTEX (F1)	>C10 - C16 Fraction	>C16 - C34 Fraction	>C34 - C40 Fraction	>C10 - C40 Fraction (sum)	>C10 - C16 Fraction minus Naphthalene (F2)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Orokolo Bay												
M1	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50
M2	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50
M3	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50
M4	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50
M5	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50
M6	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50
M7	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50
M8	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50
M9	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50
M10	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50
M11	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50
M12	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50
Offshore Pipeline												
M25	<10	<70	<100	<100	<50	<10	<10	<60	<100	<100	<50	<50
M31	<10	<70	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50
M37	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50
M43	<10	<50	<100	<100	<50	<10	<10	<50	<100	<100	<50	<50

Table C-3 BTEXN in Sediment

Site	BTEXN							
	Benzene	Toluene	Ethylbenzene	meta- & para-Xylene	ortho-Xylene	Total Xylenes	Sum of BTEX	Naphthalene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Orokolo Bay								
M1	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
M2	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
M3	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
M4	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
M5	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
M6	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
M7	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
M8	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
M9	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
M10	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
M11	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
M12	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
Offshore Pipeline								
M25	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
M31	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
M37	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1
M43	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1

Appendix D Laboratory Data

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1617699**	Page	: 1 of 78
Amendment	: **2**		
Client	: **BMT WBM GROUP LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR JEREMY VISSER	Contact	: John Pickering
Address	: PO BOX 203 SPRING HILL BRISBANE QLD 4004	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +61 07 3831 6744	Telephone	: +61 7 3552 8634
Project	: B21414 Elk	Date Samples Received	: 11-Jul-2016 12:05
Order number	: ----	Date Analysis Commenced	: 12-Jul-2016
C-O-C number	: ----	Issue Date	: 26-Jul-2016 13:59
Sampler	: CONOR JONES, DANIEL MORAN		
Site	: ----		
Quote number	: ----		
No. of samples received	: 74		
No. of samples analysed	: 73		

NATA Accredited Laboratory 825
Accredited for compliance with
ISO/IEC 17025.

NATA
WORLD RECOGNISED ACCREDITATION

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

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.

Signatories	*Position*	*Accreditation Category*
Andrew Epps	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Andrew Epps	Senior Inorganic Chemist	WB Water Lab Brisbane, Stafford, QLD
Greg Vogel	Laboratory Manager	Brisbane Inorganics, Stafford, QLD
Greg Vogel	Laboratory Manager	WB Water Lab Brisbane, Stafford, QLD
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Matt Frost	Senior Organic Chemist	Brisbane Organics, Stafford, QLD

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 sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

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.

- EK061G (Total Kjeldahl Nitrogen as N) / EK067G (Total Phosphorus as P): Samples were diluted due to matrix interference. LOR adjusted accordingly.
- EP008 (Chlorophyll a and Pheopythin a): Samples DUP3, DUP4, 18, 19, 22, 23-b, 24-b, 16 and 17 volume filtered by client 400ml. LOR adjusted accordingly.
- It is recognised that EG093-T (Total Metals in Saline Water) is less than EG093-F (Dissolved Metals in Saline Water) for some samples. However, the difference is within experimental variation of the methods.
- It is recognised that EG094-T (Total Metals in Fresh Water) is less than EG094-F (Dissolved Metals in Fresh Water) for some samples. However, the difference is within experimental variation of the methods.
- It is recognised that Total Phosphorus is less than Free Reactive Phosphorus for samples 21 and 22. However, the difference is within experimental variation of the methods.
- Amendment (22/7/16): This report has been amended following minor LIMS report formatting corrections. The correct LOR's have now been reported for Cu and Sn.
- Amendment 2 (25/7/16): This report has been amended following minor LIMS report formatting corrections. The correct LOR's have now been reported for all analytes.
- EP075(SIM): High LCS recovery deemed acceptable as all associated analyte results are less than LOR.
- 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	M1-S	M1-D	M2-S	M2-D	M3-S
				Client sampling date / time	26-Jun-2016 12:00	26-Jun-2016 12:10	25-Jun-2016 16:45	25-Jun-2016 16:55	25-Jun-2016 10:20
Compound	CAS Number	LOR	Unit		EB1617699-001	EB1617699-002	EB1617699-003	EB1617699-004	EB1617699-005
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		17	16	5	11	3
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		6	7	6	9	<5
Arsenic	7440-38-2	0.5	µg/L		0.8	1.0	0.8	1.4	0.6
Barium	7440-39-3	1	µg/L		11	7	11	5	10
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	1
Iron	7439-89-6	5	µg/L		<5	<5	<5	<5	<5
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		4400	6790	4420	7450	4170
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		2.5	2.1	2.2	1.8	2.2
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		801	432	53	394	39
Arsenic	7440-38-2	0.5	µg/L		0.9	1.3	0.7	1.5	0.8
Barium	7440-39-3	1	µg/L		11	8	11	6	10
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		1.2	0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		0.5	0.3	<0.2	0.2	<0.2
Copper	7440-50-8	1	µg/L		2	4	1	2	<1
Iron	7439-89-6	5	µg/L		920	473	67	429	65
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	0.4	<0.2
Nickel	7440-02-0	0.5	µg/L		1.4	<0.5	<0.5	0.5	<0.5
Strontium	7440-24-6	10	µg/L		4300	6390	4090	7470	3850
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		3.7	2.1	1.1	1.9	0.9

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M1-S	M1-D	M2-S	M2-D	M3-S
				Client sampling date / time	26-Jun-2016 12:00	26-Jun-2016 12:10	25-Jun-2016 16:45	25-Jun-2016 16:55	25-Jun-2016 10:20
Compound	CAS Number	LOR	Unit		EB1617699-001	EB1617699-002	EB1617699-003	EB1617699-004	EB1617699-005
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	**5**	<5	<5	<5
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	----	----	----	----
Arsenic	7440-38-2	0.2	µg/L		----	----	----	----	----
Barium	7440-39-3	0.5	µg/L		----	----	----	----	----
Cadmium	7440-43-9	0.05	µg/L		----	----	----	----	----
Chromium	7440-47-3	0.2	µg/L		----	----	----	----	----
Cobalt	7440-48-4	0.1	µg/L		----	----	----	----	----
Copper	7440-50-8	0.5	µg/L		----	----	----	----	----
Iron	7439-89-6	2	µg/L		----	----	----	----	----
Lead	7439-92-1	0.1	µg/L		----	----	----	----	----
Nickel	7440-02-0	0.5	µg/L		----	----	----	----	----
Strontium	7440-24-6	1	µg/L		----	----	----	----	----
Tin	7440-31-5	0.2	µg/L		----	----	----	----	----
Vanadium	7440-62-2	0.2	µg/L		----	----	----	----	----
Zinc	7440-66-6	1	µg/L		----	----	----	----	----
EG094T: Total metals in Fresh water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	----	----	----	----
Arsenic	7440-38-2	0.2	µg/L		----	----	----	----	----
Barium	7440-39-3	0.5	µg/L		----	----	----	----	----
Cadmium	7440-43-9	0.05	µg/L		----	----	----	----	----
Chromium	7440-47-3	0.2	µg/L		----	----	----	----	----
Cobalt	7440-48-4	0.1	µg/L		----	----	----	----	----
Copper	7440-50-8	0.5	µg/L		----	----	----	----	----
Iron	7439-89-6	2	µg/L		----	----	----	----	----
Lead	7439-92-1	0.1	µg/L		----	----	----	----	----
Nickel	7440-02-0	0.5	µg/L		----	----	----	----	----
Strontium	7440-24-6	1	µg/L		----	----	----	----	----
Tin	7440-31-5	0.2	µg/L		----	----	----	----	----
Vanadium	7440-62-2	0.2	µg/L		----	----	----	----	----
Zinc	7440-66-6	1	µg/L		----	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.03**	**0.10**	**0.02**	**0.19**	**0.02**
EK057G: Nitrite as N by Discrete Analyser									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M1-S	M1-D	M2-S	M2-D	M3-S
				Client sampling date / time	26-Jun-2016 12:00	26-Jun-2016 12:10	25-Jun-2016 16:45	25-Jun-2016 16:55	25-Jun-2016 10:20
Compound	CAS Number	LOR	Unit		EB1617699-001	EB1617699-002	EB1617699-003	EB1617699-004	EB1617699-005
					Result	Result	Result	Result	Result
EK057G: Nitrite as N by Discrete Analyser - Continued									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	**0.01**	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	**0.05**	<0.01	**0.07**	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	**0.06**	<0.01	**0.07**	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.06**	**0.06**	<0.05	<0.05	<0.05
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	**0.01**	<0.01	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		**1**	**1**	**3**	<1	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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
Benz(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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M1-S	M1-D	M2-S	M2-D	M3-S
				Client sampling date / time	26-Jun-2016 12:00	26-Jun-2016 12:10	25-Jun-2016 16:45	25-Jun-2016 16:55	25-Jun-2016 10:20
Compound	CAS Number	LOR	Unit		EB1617699-001	EB1617699-002	EB1617699-003	EB1617699-004	EB1617699-005
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	----	<50	<50
C10 - C14 Fraction	----	50	µg/L		----	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	----	<100	<100
C15 - C28 Fraction	----	100	µg/L		----	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	----	<50	<50
C29 - C36 Fraction	----	50	µg/L		----	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	----	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		----	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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
>C10 - C16 Fraction	----	100	µg/L		----	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	----	<100	<100
>C16 - C34 Fraction	----	100	µg/L		----	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	----	<100	<100
>C34 - C40 Fraction	----	100	µg/L		----	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	----	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L		----	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	----	<100	<100
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**28.9**	**31.1**	----	**33.1**	**35.8**
2-Chlorophenol-D4	93951-73-6	1	%		**69.7**	**81.9**	----	**79.4**	**82.8**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M1-S	M1-D	M2-S	M2-D	M3-S
				Client sampling date / time	26-Jun-2016 12:00	26-Jun-2016 12:10	25-Jun-2016 16:45	25-Jun-2016 16:55	25-Jun-2016 10:20
Compound	CAS Number	LOR	Unit		EB1617699-001	EB1617699-002	EB1617699-003	EB1617699-004	EB1617699-005
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2.4.6-Tribromophenol	118-79-6	1	%		66.8	79.5	----	76.9	79.7
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		92.7	104	----	107	107
Anthracene-d10	1719-06-8	1	%		66.7	79.2	----	76.6	80.7
4-Terphenyl-d14	1718-51-0	1	%		92.1	106	----	104	109
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		99.6	92.6	92.3	86.9	91.6
Toluene-D8	2037-26-5	2	%		104	98.5	99.8	98.7	99.8
4-Bromofluorobenzene	460-00-4	2	%		107	106	108	113	105

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID	M3-M	M3-D	M4-S	M4-M	M4-D
				Client sampling date / time	25-Jun-2016 10:30	25-Jun-2016 10:40	25-Jun-2016 13:45	25-Jun-2016 13:55	25-Jun-2016 14:05
					EB1617699-006	EB1617699-007	EB1617699-008	EB1617699-009	EB1617699-010
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		**1**	**6**	**2**	**2**	**8**
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	<5	<5	<5	<5
Arsenic	7440-38-2	0.5	µg/L		**1.7**	**1.6**	**0.7**	**0.8**	**1.6**
Barium	7440-39-3	1	µg/L		**5**	**4**	**10**	**8**	**5**
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Iron	7439-89-6	5	µg/L		<5	<5	<5	<5	<5
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		**7690**	**7450**	**4470**	**5050**	**7760**
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		**1.6**	**1.7**	**2.2**	**1.9**	**1.7**
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		**19**	**65**	**9**	**25**	**137**
Arsenic	7440-38-2	0.5	µg/L		**1.8**	**1.8**	**0.9**	**0.6**	**1.7**
Barium	7440-39-3	1	µg/L		**5**	**5**	**11**	**7**	**4**
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	**2**	**2**	<1
Iron	7439-89-6	5	µg/L		**33**	**95**	**15**	**46**	**174**
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		**7050**	**7860**	**4300**	**4600**	**7160**
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		<0.5	**0.8**	**0.6**	<0.5	**0.9**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M3-M	M3-D	M4-S	M4-M	M4-D
				Client sampling date / time	25-Jun-2016 10:30	25-Jun-2016 10:40	25-Jun-2016 13:45	25-Jun-2016 13:55	25-Jun-2016 14:05
Compound	CAS Number	LOR	Unit		EB1617699-006	EB1617699-007	EB1617699-008	EB1617699-009	EB1617699-010
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	----	----	----	----
Arsenic	7440-38-2	0.2	µg/L		----	----	----	----	----
Barium	7440-39-3	0.5	µg/L		----	----	----	----	----
Cadmium	7440-43-9	0.05	µg/L		----	----	----	----	----
Chromium	7440-47-3	0.2	µg/L		----	----	----	----	----
Cobalt	7440-48-4	0.1	µg/L		----	----	----	----	----
Copper	7440-50-8	0.5	µg/L		----	----	----	----	----
Iron	7439-89-6	2	µg/L		----	----	----	----	----
Lead	7439-92-1	0.1	µg/L		----	----	----	----	----
Nickel	7440-02-0	0.5	µg/L		----	----	----	----	----
Strontium	7440-24-6	1	µg/L		----	----	----	----	----
Tin	7440-31-5	0.2	µg/L		----	----	----	----	----
Vanadium	7440-62-2	0.2	µg/L		----	----	----	----	----
Zinc	7440-66-6	1	µg/L		----	----	----	----	----
EG094T: Total metals in Fresh water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	----	----	----	----
Arsenic	7440-38-2	0.2	µg/L		----	----	----	----	----
Barium	7440-39-3	0.5	µg/L		----	----	----	----	----
Cadmium	7440-43-9	0.05	µg/L		----	----	----	----	----
Chromium	7440-47-3	0.2	µg/L		----	----	----	----	----
Cobalt	7440-48-4	0.1	µg/L		----	----	----	----	----
Copper	7440-50-8	0.5	µg/L		----	----	----	----	----
Iron	7439-89-6	2	µg/L		----	----	----	----	----
Lead	7439-92-1	0.1	µg/L		----	----	----	----	----
Nickel	7440-02-0	0.5	µg/L		----	----	----	----	----
Strontium	7440-24-6	1	µg/L		----	----	----	----	----
Tin	7440-31-5	0.2	µg/L		----	----	----	----	----
Vanadium	7440-62-2	0.2	µg/L		----	----	----	----	----
Zinc	7440-66-6	1	µg/L		----	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.14**	**0.13**	**0.04**	**0.06**	**0.15**
EK057G: Nitrite as N by Discrete Analyser									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M3-M	M3-D	M4-S	M4-M	M4-D
				Client sampling date / time	25-Jun-2016 10:30	25-Jun-2016 10:40	25-Jun-2016 13:45	25-Jun-2016 13:55	25-Jun-2016 14:05
Compound	CAS Number	LOR	Unit		EB1617699-006	EB1617699-007	EB1617699-008	EB1617699-009	EB1617699-010
					Result	Result	Result	Result	Result
EK057G: Nitrite as N by Discrete Analyser - Continued									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.10**	**0.02**	<0.01	<0.01	**0.04**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.10**	**0.02**	<0.01	<0.01	**0.04**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	<1	<1	<1	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M3-M	M3-D	M4-S	M4-M	M4-D
				Client sampling date / time	25-Jun-2016 10:30	25-Jun-2016 10:40	25-Jun-2016 13:45	25-Jun-2016 13:55	25-Jun-2016 14:05
Compound	CAS Number	LOR	Unit		EB1617699-006	EB1617699-007	EB1617699-008	EB1617699-009	EB1617699-010
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C10 - C14 Fraction	----	50	µg/L		----	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
C15 - C28 Fraction	----	100	µg/L		----	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C29 - C36 Fraction	----	50	µg/L		----	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		----	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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
>C10 - C16 Fraction	----	100	µg/L		----	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L		----	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L		----	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L		----	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	<100	<100
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**26.2**	**33.1**	**29.3**	**29.3**	**35.7**
2-Chlorophenol-D4	93951-73-6	1	%		**60.5**	**72.7**	**73.9**	**71.4**	**77.0**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M3-M	M3-D	M4-S	M4-M	M4-D
				Client sampling date / time	25-Jun-2016 10:30	25-Jun-2016 10:40	25-Jun-2016 13:45	25-Jun-2016 13:55	25-Jun-2016 14:05
Compound	CAS Number	LOR	Unit		EB1617699-006	EB1617699-007	EB1617699-008	EB1617699-009	EB1617699-010
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2.4.6-Tribromophenol	118-79-6	1	%		56.3	66.7	70.2	68.6	73.6
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		80.4	92.7	97.1	95.3	101
Anthracene-d10	1719-06-8	1	%		57.5	68.6	72.8	46.0	77.1
4-Terphenyl-d14	1718-51-0	1	%		80.7	92.6	100	63.6	105
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		91.3	91.2	92.4	90.2	94.6
Toluene-D8	2037-26-5	2	%		97.6	101	94.1	101	98.9
4-Bromofluorobenzene	460-00-4	2	%		114	108	105	110	116

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M5-S	M5-D	M11-S	M11-M	M11-D
				Client sampling date / time	26-Jun-2016 10:45	26-Jun-2016 10:55	25-Jun-2016 15:45	25-Jun-2016 15:55	25-Jun-2016 16:05
Compound	CAS Number	LOR	Unit		EB1617699-011	EB1617699-012	EB1617699-013	EB1617699-014	EB1617699-015
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		1	4	2	5	15
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	5	6	5	8
Arsenic	7440-38-2	0.5	µg/L		0.7	1.4	0.9	1.4	1.3
Barium	7440-39-3	1	µg/L		10	6	11	5	5
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	1	<1	<1
Iron	7439-89-6	5	µg/L		<5	<5	<5	<5	<5
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		4630	6990	4430	7540	7600
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		2.2	1.7	2.3	1.8	1.8
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		25	62	104	19	411
Arsenic	7440-38-2	0.5	µg/L		<0.5	1.3	0.7	1.8	2.0
Barium	7440-39-3	1	µg/L		7	7	11	4	5
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	0.6
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	0.3
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Iron	7439-89-6	5	µg/L		104	93	137	33	547
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	0.6
Strontium	7440-24-6	10	µg/L		4490	6390	4120	7080	7080
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		<0.5	<0.5	1.3	<0.5	1.3

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M5-S	M5-D	M11-S	M11-M	M11-D
				Client sampling date / time	26-Jun-2016 10:45	26-Jun-2016 10:55	25-Jun-2016 15:45	25-Jun-2016 15:55	25-Jun-2016 16:05
Compound	CAS Number	LOR	Unit		EB1617699-011	EB1617699-012	EB1617699-013	EB1617699-014	EB1617699-015
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	<5	**26**	<5	<5
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	----	----	----	----
Arsenic	7440-38-2	0.2	µg/L		----	----	----	----	----
Barium	7440-39-3	0.5	µg/L		----	----	----	----	----
Cadmium	7440-43-9	0.05	µg/L		----	----	----	----	----
Chromium	7440-47-3	0.2	µg/L		----	----	----	----	----
Cobalt	7440-48-4	0.1	µg/L		----	----	----	----	----
Copper	7440-50-8	0.5	µg/L		----	----	----	----	----
Iron	7439-89-6	2	µg/L		----	----	----	----	----
Lead	7439-92-1	0.1	µg/L		----	----	----	----	----
Nickel	7440-02-0	0.5	µg/L		----	----	----	----	----
Strontium	7440-24-6	1	µg/L		----	----	----	----	----
Tin	7440-31-5	0.2	µg/L		----	----	----	----	----
Vanadium	7440-62-2	0.2	µg/L		----	----	----	----	----
Zinc	7440-66-6	1	µg/L		----	----	----	----	----
EG094T: Total metals in Fresh water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	----	----	----	----
Arsenic	7440-38-2	0.2	µg/L		----	----	----	----	----
Barium	7440-39-3	0.5	µg/L		----	----	----	----	----
Cadmium	7440-43-9	0.05	µg/L		----	----	----	----	----
Chromium	7440-47-3	0.2	µg/L		----	----	----	----	----
Cobalt	7440-48-4	0.1	µg/L		----	----	----	----	----
Copper	7440-50-8	0.5	µg/L		----	----	----	----	----
Iron	7439-89-6	2	µg/L		----	----	----	----	----
Lead	7439-92-1	0.1	µg/L		----	----	----	----	----
Nickel	7440-02-0	0.5	µg/L		----	----	----	----	----
Strontium	7440-24-6	1	µg/L		----	----	----	----	----
Tin	7440-31-5	0.2	µg/L		----	----	----	----	----
Vanadium	7440-62-2	0.2	µg/L		----	----	----	----	----
Zinc	7440-66-6	1	µg/L		----	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.09**	**0.10**	**0.02**	**0.12**	**0.13**
EK057G: Nitrite as N by Discrete Analyser									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M5-S	M5-D	M11-S	M11-M	M11-D
				Client sampling date / time	26-Jun-2016 10:45	26-Jun-2016 10:55	25-Jun-2016 15:45	25-Jun-2016 15:55	25-Jun-2016 16:05
Compound	CAS Number	LOR	Unit		EB1617699-011	EB1617699-012	EB1617699-013	EB1617699-014	EB1617699-015
					Result	Result	Result	Result	Result
EK057G: Nitrite as N by Discrete Analyser - Continued									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	**0.01**	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	<0.01	<0.01	**0.03**	**0.04**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	**0.01**	<0.01	**0.03**	**0.04**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	**0.8**
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	**0.8**
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.06**	<0.05	<0.05	<0.05	<0.05
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	**0.01**	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	<1	**2**	<1	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M5-S	M5-D	M11-S	M11-M	M11-D
				Client sampling date / time	26-Jun-2016 10:45	26-Jun-2016 10:55	25-Jun-2016 15:45	25-Jun-2016 15:55	25-Jun-2016 16:05
Compound	CAS Number	LOR	Unit		EB1617699-011	EB1617699-012	EB1617699-013	EB1617699-014	EB1617699-015
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C10 - C14 Fraction	----	50	µg/L		----	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
C15 - C28 Fraction	----	100	µg/L		----	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C29 - C36 Fraction	----	50	µg/L		----	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		----	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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
>C10 - C16 Fraction	----	100	µg/L		----	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L		----	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L		----	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L		----	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	<100	<100
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**41.2**	**24.8**	**41.9**	**42.4**	**45.2**
2-Chlorophenol-D4	93951-73-6	1	%		**81.2**	**51.2**	**81.3**	**78.0**	**84.6**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M5-S	M5-D	M11-S	M11-M	M11-D
				Client sampling date / time	26-Jun-2016 10:45	26-Jun-2016 10:55	25-Jun-2016 15:45	25-Jun-2016 15:55	25-Jun-2016 16:05
Compound	CAS Number	LOR	Unit		EB1617699-011	EB1617699-012	EB1617699-013	EB1617699-014	EB1617699-015
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2.4.6-Tribromophenol	118-79-6	1	%		81.0	48.5	84.0	79.8	85.6
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		82.0	50.6	83.6	78.8	83.5
Anthracene-d10	1719-06-8	1	%		82.6	51.0	83.6	79.4	82.2
4-Terphenyl-d14	1718-51-0	1	%		107	67.9	111	105	108
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		89.7	94.7	90.8	84.1	91.9
Toluene-D8	2037-26-5	2	%		100	104	101	99.2	98.3
4-Bromofluorobenzene	460-00-4	2	%		108	110	105	105	104

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M12-S	M12-M	M12-D	DUP1	DUP2
				Client sampling date / time	25-Jun-2016 14:45	25-Jun-2016 14:55	25-Jun-2016 15:05	[26-Jun-2016]	[26-Jun-2016]
Compound	CAS Number	LOR	Unit		EB1617699-016	EB1617699-017	EB1617699-018	EB1617699-019	EB1617699-020
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		**2**	**6**	**9**	**9**	**5**
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	**6**	**6**	**6**	**7**
Arsenic	7440-38-2	0.5	µg/L		**0.7**	**1.6**	**1.4**	**1.1**	**1.0**
Barium	7440-39-3	1	µg/L		**11**	**5**	**5**	**7**	**6**
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Iron	7439-89-6	5	µg/L		<5	<5	<5	**8**	<5
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		**4540**	**7490**	**7740**	**7000**	**6520**
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		**2.3**	**1.7**	**1.9**	**1.9**	**1.8**
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		**25**	**41**	**120**	**62**	**136**
Arsenic	7440-38-2	0.5	µg/L		**0.8**	**1.5**	**1.6**	**1.2**	**1.2**
Barium	7440-39-3	1	µg/L		**11**	**5**	**5**	**7**	**6**
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		**1**	<1	<1	<1	**1**
Iron	7439-89-6	5	µg/L		**33**	**62**	**209**	**112**	**180**
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		**4360**	**6940**	**7750**	**6720**	**6030**
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		**1.0**	**0.6**	**0.6**	**0.6**	**0.7**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M12-S	M12-M	M12-D	DUP1	DUP2
				Client sampling date / time	25-Jun-2016 14:45	25-Jun-2016 14:55	25-Jun-2016 15:05	[26-Jun-2016]	[26-Jun-2016]
Compound	CAS Number	LOR	Unit		EB1617699-016	EB1617699-017	EB1617699-018	EB1617699-019	EB1617699-020
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	----	----	----	----
Arsenic	7440-38-2	0.2	µg/L		----	----	----	----	----
Barium	7440-39-3	0.5	µg/L		----	----	----	----	----
Cadmium	7440-43-9	0.05	µg/L		----	----	----	----	----
Chromium	7440-47-3	0.2	µg/L		----	----	----	----	----
Cobalt	7440-48-4	0.1	µg/L		----	----	----	----	----
Copper	7440-50-8	0.5	µg/L		----	----	----	----	----
Iron	7439-89-6	2	µg/L		----	----	----	----	----
Lead	7439-92-1	0.1	µg/L		----	----	----	----	----
Nickel	7440-02-0	0.5	µg/L		----	----	----	----	----
Strontium	7440-24-6	1	µg/L		----	----	----	----	----
Tin	7440-31-5	0.2	µg/L		----	----	----	----	----
Vanadium	7440-62-2	0.2	µg/L		----	----	----	----	----
Zinc	7440-66-6	1	µg/L		----	----	----	----	----
EG094T: Total metals in Fresh water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	----	----	----	----
Arsenic	7440-38-2	0.2	µg/L		----	----	----	----	----
Barium	7440-39-3	0.5	µg/L		----	----	----	----	----
Cadmium	7440-43-9	0.05	µg/L		----	----	----	----	----
Chromium	7440-47-3	0.2	µg/L		----	----	----	----	----
Cobalt	7440-48-4	0.1	µg/L		----	----	----	----	----
Copper	7440-50-8	0.5	µg/L		----	----	----	----	----
Iron	7439-89-6	2	µg/L		----	----	----	----	----
Lead	7439-92-1	0.1	µg/L		----	----	----	----	----
Nickel	7440-02-0	0.5	µg/L		----	----	----	----	----
Strontium	7440-24-6	1	µg/L		----	----	----	----	----
Tin	7440-31-5	0.2	µg/L		----	----	----	----	----
Vanadium	7440-62-2	0.2	µg/L		----	----	----	----	----
Zinc	7440-66-6	1	µg/L		----	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.02**	**0.12**	**0.16**	**0.11**	**0.09**
EK057G: Nitrite as N by Discrete Analyser									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M12-S	M12-M	M12-D	DUP1	DUP2
				Client sampling date / time	25-Jun-2016 14:45	25-Jun-2016 14:55	25-Jun-2016 15:05	[26-Jun-2016]	[26-Jun-2016]
Compound	CAS Number	LOR	Unit		EB1617699-016	EB1617699-017	EB1617699-018	EB1617699-019	EB1617699-020
					Result	Result	Result	Result	Result
EK057G: Nitrite as N by Discrete Analyser - Continued									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	**0.01**
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	**0.03**	**0.04**	**0.04**	**0.03**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	**0.03**	**0.04**	**0.04**	**0.04**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	**0.02**
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	<1	<1	<1	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M12-S	M12-M	M12-D	DUP1	DUP2
				Client sampling date / time	25-Jun-2016 14:45	25-Jun-2016 14:55	25-Jun-2016 15:05	[26-Jun-2016]	[26-Jun-2016]
Compound	CAS Number	LOR	Unit		EB1617699-016	EB1617699-017	EB1617699-018	EB1617699-019	EB1617699-020
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C10 - C14 Fraction	----	50	µg/L		----	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
C15 - C28 Fraction	----	100	µg/L		----	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C29 - C36 Fraction	----	50	µg/L		----	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		----	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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
>C10 - C16 Fraction	----	100	µg/L		----	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L		----	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L		----	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L		----	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	<100	<100
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**39.9**	**39.4**	**50.7**	**28.7**	**33.7**
2-Chlorophenol-D4	93951-73-6	1	%		**84.8**	**78.3**	**91.8**	**63.2**	**86.7**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M12-S	M12-M	M12-D	DUP1	DUP2
				Client sampling date / time	25-Jun-2016 14:45	25-Jun-2016 14:55	25-Jun-2016 15:05	[26-Jun-2016]	[26-Jun-2016]
Compound	CAS Number	LOR	Unit		EB1617699-016	EB1617699-017	EB1617699-018	EB1617699-019	EB1617699-020
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2.4.6-Tribromophenol	118-79-6	1	%		89.0	79.8	92.6	75.9	94.7
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		85.0	80.5	93.9	71.3	90.2
Anthracene-d10	1719-06-8	1	%		84.7	78.5	88.6	73.4	84.8
4-Terphenyl-d14	1718-51-0	1	%		112	103	116	90.9	107
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		95.5	89.0	92.0	93.2	94.6
Toluene-D8	2037-26-5	2	%		101	96.5	110	106	99.5
4-Bromofluorobenzene	460-00-4	2	%		108	105	115	111	102

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	DUP3	TRIP1	TRIP2	DUP4	M6-S
				Client sampling date / time	[28-Jun-2016]	[26-Jun-2016]	[28-Jun-2016]	[03-Jul-2016]	25-Jun-2016 08:40
Compound	CAS Number	LOR	Unit		EB1617699-021	EB1617699-022	EB1617699-023	EB1617699-024	EB1617699-025
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		**47**	**2**	**10**	**79**	**6**
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	<5	<5	----	<5
Arsenic	7440-38-2	0.5	µg/L		----	**0.8**	<0.5	----	**0.7**
Barium	7440-39-3	1	µg/L		----	**10**	**20**	----	**11**
Cadmium	7440-43-9	0.2	µg/L		----	<0.2	<0.2	----	<0.2
Chromium	7440-47-3	0.5	µg/L		----	<0.5	<0.5	----	<0.5
Cobalt	7440-48-4	0.2	µg/L		----	<0.2	<0.2	----	<0.2
Copper	7440-50-8	1	µg/L		----	<1	<1	----	**2**
Iron	7439-89-6	5	µg/L		----	<5	**18**	----	<5
Lead	7439-92-1	0.2	µg/L		----	<0.2	<0.2	----	<0.2
Nickel	7440-02-0	0.5	µg/L		----	<0.5	<0.5	----	<0.5
Strontium	7440-24-6	10	µg/L		----	**4550**	**2090**	----	**4520**
Tin	7440-31-5	5	µg/L		----	<5	<5	----	<5
Vanadium	7440-62-2	0.5	µg/L		----	**2.2**	**2.2**	----	**2.3**
Zinc	7440-66-6	5	µg/L		----	<5	<5	----	<5
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	**19**	**369**	----	**36**
Arsenic	7440-38-2	0.5	µg/L		----	**0.7**	<0.5	----	**0.7**
Barium	7440-39-3	1	µg/L		----	**10**	**22**	----	**11**
Cadmium	7440-43-9	0.2	µg/L		----	<0.2	<0.2	----	<0.2
Chromium	7440-47-3	0.5	µg/L		----	<0.5	**0.5**	----	<0.5
Cobalt	7440-48-4	0.2	µg/L		----	<0.2	**0.4**	----	<0.2
Copper	7440-50-8	1	µg/L		----	<1	<1	----	**2**
Iron	7439-89-6	5	µg/L		----	**29**	**674**	----	**50**
Lead	7439-92-1	0.2	µg/L		----	<0.2	<0.2	----	<0.2
Nickel	7440-02-0	0.5	µg/L		----	<0.5	**0.8**	----	<0.5
Strontium	7440-24-6	10	µg/L		----	**4430**	**1990**	----	**4310**
Tin	7440-31-5	5	µg/L		----	<5	<5	----	<5
Vanadium	7440-62-2	0.5	µg/L		----	**0.8**	**2.0**	----	**0.9**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	DUP3	TRIP1	TRIP2	DUP4	M6-S
				Client sampling date / time	[28-Jun-2016]	[26-Jun-2016]	[28-Jun-2016]	[03-Jul-2016]	25-Jun-2016 08:40
Compound	CAS Number	LOR	Unit		EB1617699-021	EB1617699-022	EB1617699-023	EB1617699-024	EB1617699-025
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		----	<5	<5	----	<5
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		**20**	----	----	**36**	----
Arsenic	7440-38-2	0.2	µg/L		**0.4**	----	----	**0.3**	----
Barium	7440-39-3	0.5	µg/L		**5.6**	----	----	**5.6**	----
Cadmium	7440-43-9	0.05	µg/L		<0.05	----	----	<0.05	----
Chromium	7440-47-3	0.2	µg/L		<0.2	----	----	<0.2	----
Cobalt	7440-48-4	0.1	µg/L		<0.1	----	----	<0.1	----
Copper	7440-50-8	0.5	µg/L		**0.7**	----	----	<0.5	----
Iron	7439-89-6	2	µg/L		**62**	----	----	**52**	----
Lead	7439-92-1	0.1	µg/L		<0.1	----	----	<0.1	----
Nickel	7440-02-0	0.5	µg/L		<0.5	----	----	<0.5	----
Strontium	7440-24-6	1	µg/L		**138**	----	----	**134**	----
Tin	7440-31-5	0.2	µg/L		<0.2	----	----	<0.2	----
Vanadium	7440-62-2	0.2	µg/L		**1.3**	----	----	**0.9**	----
Zinc	7440-66-6	1	µg/L		<1	----	----	<1	----
EG094T: Total metals in Fresh water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		**1640**	----	----	**2300**	----
Arsenic	7440-38-2	0.2	µg/L		**0.7**	----	----	**0.9**	----
Barium	7440-39-3	0.5	µg/L		**10.5**	----	----	**17.0**	----
Cadmium	7440-43-9	0.05	µg/L		<0.05	----	----	<0.05	----
Chromium	7440-47-3	0.2	µg/L		**2.4**	----	----	**2.8**	----
Cobalt	7440-48-4	0.1	µg/L		**1.1**	----	----	**1.5**	----
Copper	7440-50-8	0.5	µg/L		**3.0**	----	----	**3.1**	----
Iron	7439-89-6	2	µg/L		**2350**	----	----	**3520**	----
Lead	7439-92-1	0.1	µg/L		**0.6**	----	----	**1.0**	----
Nickel	7440-02-0	0.5	µg/L		**2.1**	----	----	**2.7**	----
Strontium	7440-24-6	1	µg/L		**118**	----	----	**147**	----
Tin	7440-31-5	0.2	µg/L		<0.2	----	----	<0.2	----
Vanadium	7440-62-2	0.2	µg/L		**6.5**	----	----	**8.3**	----
Zinc	7440-66-6	1	µg/L		**5**	----	----	**7**	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.04**	**0.04**	**0.04**	**0.02**	**0.03**
EK057G: Nitrite as N by Discrete Analyser									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	DUP3	TRIP1	TRIP2	DUP4	M6-S
				Client sampling date / time	[28-Jun-2016]	[26-Jun-2016]	[28-Jun-2016]	[03-Jul-2016]	25-Jun-2016 08:40
Compound	CAS Number	LOR	Unit		EB1617699-021	EB1617699-022	EB1617699-023	EB1617699-024	EB1617699-025
					Result	Result	Result	Result	Result
EK057G: Nitrite as N by Discrete Analyser - Continued									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	**0.01**	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.04**	<0.01	**0.02**	**0.10**	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.04**	<0.01	**0.03**	**0.10**	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.05	<0.05	**0.07**	**0.06**	<0.05
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		**0.02**	<0.01	**0.06**	**0.01**	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<2	<1	**1**	<2	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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
Benz(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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	DUP3	TRIP1	TRIP2	DUP4	M6-S
				Client sampling date / time	[28-Jun-2016]	[26-Jun-2016]	[28-Jun-2016]	[03-Jul-2016]	25-Jun-2016 08:40
Compound	CAS Number	LOR	Unit		EB1617699-021	EB1617699-022	EB1617699-023	EB1617699-024	EB1617699-025
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		----	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		----	<50	<50	<50	<50
C10 - C14 Fraction	----	50	µg/L		----	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		----	<100	<100	<100	<100
C15 - C28 Fraction	----	100	µg/L		----	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		----	<50	<50	<50	<50
C29 - C36 Fraction	----	50	µg/L		----	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		----	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		----	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		----	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		----	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L		----	<100	<100	<100	<100
>C10 - C16 Fraction	----	100	µg/L		----	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		----	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L		----	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		----	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L		----	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		----	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L		----	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		----	<100	<100	<100	<100
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		----	**33.7**	**37.8**	**30.0**	**37.7**
2-Chlorophenol-D4	93951-73-6	1	%		----	**75.6**	**82.7**	**67.9**	**75.1**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	DUP3	TRIP1	TRIP2	DUP4	M6-S
				Client sampling date / time	[28-Jun-2016]	[26-Jun-2016]	[28-Jun-2016]	[03-Jul-2016]	25-Jun-2016 08:40
Compound	CAS Number	LOR	Unit		EB1617699-021	EB1617699-022	EB1617699-023	EB1617699-024	EB1617699-025
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2.4.6-Tribromophenol	118-79-6	1	%		----	77.4	85.3	73.3	80.6
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		----	83.0	85.5	74.1	81.6
Anthracene-d10	1719-06-8	1	%		----	77.0	80.5	77.5	75.2
4-Terphenyl-d14	1718-51-0	1	%		----	104	107	98.7	99.5
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		----	91.3	92.5	88.8	92.6
Toluene-D8	2037-26-5	2	%		----	104	98.6	102	100
4-Bromofluorobenzene	460-00-4	2	%		----	108	113	105	108

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID	M6-D	M7-S	M7-D	M8-S	M8-D
				Client sampling date / time	25-Jun-2016 09:00	26-Jun-2016 13:10	26-Jun-2016 13:20	26-Jun-2016 09:30	26-Jun-2016 09:40
					EB1617699-026	EB1617699-027	EB1617699-028	EB1617699-029	EB1617699-030
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		**15**	**4**	**9**	**3**	**4**
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		**8**	**6**	**7**	**7**	**5**
Arsenic	7440-38-2	0.5	µg/L		**1.5**	**0.8**	**0.8**	**0.7**	**1.4**
Barium	7440-39-3	1	µg/L		**6**	**10**	**6**	**10**	**6**
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	<1	**1**	**1**
Iron	7439-89-6	5	µg/L		<5	<5	<5	<5	<5
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		**7520**	**4620**	**5850**	**4640**	**6960**
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		**2.1**	**1.9**	**1.6**	**2.2**	**1.9**
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		**487**	**150**	**116**	**37**	**98**
Arsenic	7440-38-2	0.5	µg/L		**1.4**	**0.7**	**1.0**	**0.8**	**1.6**
Barium	7440-39-3	1	µg/L		**6**	**10**	**7**	**11**	**8**
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		**0.7**	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		**0.4**	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	**1**
Iron	7439-89-6	5	µg/L		**591**	**198**	**162**	**46**	**135**
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		**0.9**	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		**7000**	**4260**	**5920**	**4380**	**7770**
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		**1.5**	**1.1**	**0.6**	**0.6**	**0.7**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M6-D	M7-S	M7-D	M8-S	M8-D
				Client sampling date / time	25-Jun-2016 09:00	26-Jun-2016 13:10	26-Jun-2016 13:20	26-Jun-2016 09:30	26-Jun-2016 09:40
Compound	CAS Number	LOR	Unit		EB1617699-026	EB1617699-027	EB1617699-028	EB1617699-029	EB1617699-030
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	<5	<5	**13**	<5
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	----	----	----	----
Arsenic	7440-38-2	0.2	µg/L		----	----	----	----	----
Barium	7440-39-3	0.5	µg/L		----	----	----	----	----
Cadmium	7440-43-9	0.05	µg/L		----	----	----	----	----
Chromium	7440-47-3	0.2	µg/L		----	----	----	----	----
Cobalt	7440-48-4	0.1	µg/L		----	----	----	----	----
Copper	7440-50-8	0.5	µg/L		----	----	----	----	----
Iron	7439-89-6	2	µg/L		----	----	----	----	----
Lead	7439-92-1	0.1	µg/L		----	----	----	----	----
Nickel	7440-02-0	0.5	µg/L		----	----	----	----	----
Strontium	7440-24-6	1	µg/L		----	----	----	----	----
Tin	7440-31-5	0.2	µg/L		----	----	----	----	----
Vanadium	7440-62-2	0.2	µg/L		----	----	----	----	----
Zinc	7440-66-6	1	µg/L		----	----	----	----	----
EG094T: Total metals in Fresh water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	----	----	----	----
Arsenic	7440-38-2	0.2	µg/L		----	----	----	----	----
Barium	7440-39-3	0.5	µg/L		----	----	----	----	----
Cadmium	7440-43-9	0.05	µg/L		----	----	----	----	----
Chromium	7440-47-3	0.2	µg/L		----	----	----	----	----
Cobalt	7440-48-4	0.1	µg/L		----	----	----	----	----
Copper	7440-50-8	0.5	µg/L		----	----	----	----	----
Iron	7439-89-6	2	µg/L		----	----	----	----	----
Lead	7439-92-1	0.1	µg/L		----	----	----	----	----
Nickel	7440-02-0	0.5	µg/L		----	----	----	----	----
Strontium	7440-24-6	1	µg/L		----	----	----	----	----
Tin	7440-31-5	0.2	µg/L		----	----	----	----	----
Vanadium	7440-62-2	0.2	µg/L		----	----	----	----	----
Zinc	7440-66-6	1	µg/L		----	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.14**	**0.03**	**0.07**	**0.03**	**0.06**
EK057G: Nitrite as N by Discrete Analyser									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M6-D	M7-S	M7-D	M8-S	M8-D
				Client sampling date / time	25-Jun-2016 09:00	26-Jun-2016 13:10	26-Jun-2016 13:20	26-Jun-2016 09:30	26-Jun-2016 09:40
Compound	CAS Number	LOR	Unit		EB1617699-026	EB1617699-027	EB1617699-028	EB1617699-029	EB1617699-030
					Result	Result	Result	Result	Result
EK057G: Nitrite as N by Discrete Analyser - Continued									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	**0.01**	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.05**	<0.01	**0.06**	<0.01	**0.05**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.05**	<0.01	**0.07**	<0.01	**0.05**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.05	<0.05	<0.05	**0.06**	**0.06**
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		**0.01**	<0.01	**0.01**	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	**2**	<1	<1	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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
Benz(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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M6-D	M7-S	M7-D	M8-S	M8-D
				Client sampling date / time	25-Jun-2016 09:00	26-Jun-2016 13:10	26-Jun-2016 13:20	26-Jun-2016 09:30	26-Jun-2016 09:40
Compound	CAS Number	LOR	Unit		EB1617699-026	EB1617699-027	EB1617699-028	EB1617699-029	EB1617699-030
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	----	<50	<50
C10 - C14 Fraction	----	50	µg/L		----	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	----	<100	<100
C15 - C28 Fraction	----	100	µg/L		----	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	----	<50	<50
C29 - C36 Fraction	----	50	µg/L		----	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	----	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		----	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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
>C10 - C16 Fraction	----	100	µg/L		----	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	----	<100	<100
>C16 - C34 Fraction	----	100	µg/L		----	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	----	<100	<100
>C34 - C40 Fraction	----	100	µg/L		----	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	----	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L		----	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	----	<100	<100
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**44.6**	**47.4**	----	**41.3**	**40.2**
2-Chlorophenol-D4	93951-73-6	1	%		**79.0**	**88.4**	----	**76.8**	**72.5**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M6-D	M7-S	M7-D	M8-S	M8-D
				Client sampling date / time	25-Jun-2016 09:00	26-Jun-2016 13:10	26-Jun-2016 13:20	26-Jun-2016 09:30	26-Jun-2016 09:40
Compound	CAS Number	LOR	Unit		EB1617699-026	EB1617699-027	EB1617699-028	EB1617699-029	EB1617699-030
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2.4.6-Tribromophenol	118-79-6	1	%		83.2	95.8	----	80.1	74.7
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		86.0	83.4	----	85.2	75.8
Anthracene-d10	1719-06-8	1	%		77.2	83.2	----	77.9	73.3
4-Terphenyl-d14	1718-51-0	1	%		104	117	----	108	105
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		89.8	94.3	91.3	87.6	84.5
Toluene-D8	2037-26-5	2	%		97.9	101	104	100	96.4
4-Bromofluorobenzene	460-00-4	2	%		105	112	106	114	110

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID	M9-S	M9-M	M9-D	M10-S	M10-D
				Client sampling date / time	25-Jun-2016 12:00	25-Jun-2016 12:10	25-Jun-2016 12:20	25-Jun-2016 12:50	25-Jun-2016 13:10
					EB1617699-031	EB1617699-032	EB1617699-033	EB1617699-034	EB1617699-035
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		**5**	**4**	**4**	**2**	**6**
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		**5**	<5	<5	<5	**5**
Arsenic	7440-38-2	0.5	µg/L		<0.5	**1.6**	**1.3**	**0.8**	**1.3**
Barium	7440-39-3	1	µg/L		**9**	**5**	**4**	**11**	**5**
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		**1**	<1	<1	<1	<1
Iron	7439-89-6	5	µg/L		<5	<5	<5	<5	<5
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		**3070**	**7350**	**7740**	**4210**	**7670**
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		**2.2**	**1.7**	**2.0**	**2.3**	**1.8**
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		**153**	**8**	**23**	**14**	**72**
Arsenic	7440-38-2	0.5	µg/L		<0.5	**1.4**	**1.4**	<0.5	**1.5**
Barium	7440-39-3	1	µg/L		**10**	**5**	**4**	**11**	**5**
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	**2**	**2**	<1	**2**
Iron	7439-89-6	5	µg/L		**230**	**25**	**44**	**28**	**104**
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		**2860**	**6850**	**7300**	**3970**	**7170**
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		**1.2**	<0.5	<0.5	**1.0**	**0.9**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M9-S	M9-M	M9-D	M10-S	M10-D
				Client sampling date / time	25-Jun-2016 12:00	25-Jun-2016 12:10	25-Jun-2016 12:20	25-Jun-2016 12:50	25-Jun-2016 13:10
Compound	CAS Number	LOR	Unit		EB1617699-031	EB1617699-032	EB1617699-033	EB1617699-034	EB1617699-035
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	----	----	----	----
Arsenic	7440-38-2	0.2	µg/L		----	----	----	----	----
Barium	7440-39-3	0.5	µg/L		----	----	----	----	----
Cadmium	7440-43-9	0.05	µg/L		----	----	----	----	----
Chromium	7440-47-3	0.2	µg/L		----	----	----	----	----
Cobalt	7440-48-4	0.1	µg/L		----	----	----	----	----
Copper	7440-50-8	0.5	µg/L		----	----	----	----	----
Iron	7439-89-6	2	µg/L		----	----	----	----	----
Lead	7439-92-1	0.1	µg/L		----	----	----	----	----
Nickel	7440-02-0	0.5	µg/L		----	----	----	----	----
Strontium	7440-24-6	1	µg/L		----	----	----	----	----
Tin	7440-31-5	0.2	µg/L		----	----	----	----	----
Vanadium	7440-62-2	0.2	µg/L		----	----	----	----	----
Zinc	7440-66-6	1	µg/L		----	----	----	----	----
EG094T: Total metals in Fresh water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	----	----	----	----
Arsenic	7440-38-2	0.2	µg/L		----	----	----	----	----
Barium	7440-39-3	0.5	µg/L		----	----	----	----	----
Cadmium	7440-43-9	0.05	µg/L		----	----	----	----	----
Chromium	7440-47-3	0.2	µg/L		----	----	----	----	----
Cobalt	7440-48-4	0.1	µg/L		----	----	----	----	----
Copper	7440-50-8	0.5	µg/L		----	----	----	----	----
Iron	7439-89-6	2	µg/L		----	----	----	----	----
Lead	7439-92-1	0.1	µg/L		----	----	----	----	----
Nickel	7440-02-0	0.5	µg/L		----	----	----	----	----
Strontium	7440-24-6	1	µg/L		----	----	----	----	----
Tin	7440-31-5	0.2	µg/L		----	----	----	----	----
Vanadium	7440-62-2	0.2	µg/L		----	----	----	----	----
Zinc	7440-66-6	1	µg/L		----	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.03**	**0.13**	**0.13**	**0.03**	**0.12**
EK057G: Nitrite as N by Discrete Analyser									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M9-S	M9-M	M9-D	M10-S	M10-D
				Client sampling date / time	25-Jun-2016 12:00	25-Jun-2016 12:10	25-Jun-2016 12:20	25-Jun-2016 12:50	25-Jun-2016 13:10
Compound	CAS Number	LOR	Unit		EB1617699-031	EB1617699-032	EB1617699-033	EB1617699-034	EB1617699-035
					Result	Result	Result	Result	Result
EK057G: Nitrite as N by Discrete Analyser - Continued									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	<0.01	**0.03**	<0.01	**0.06**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	<0.01	**0.03**	<0.01	**0.06**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.05	**0.11**	<0.05	<0.05	<0.05
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		**0.01**	<0.01	<0.01	<0.01	**0.02**
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	<1	<1	**1**	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M9-S	M9-M	M9-D	M10-S	M10-D
				Client sampling date / time	25-Jun-2016 12:00	25-Jun-2016 12:10	25-Jun-2016 12:20	25-Jun-2016 12:50	25-Jun-2016 13:10
Compound	CAS Number	LOR	Unit		EB1617699-031	EB1617699-032	EB1617699-033	EB1617699-034	EB1617699-035
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C10 - C14 Fraction	----	50	µg/L		----	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
C15 - C28 Fraction	----	100	µg/L		----	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C29 - C36 Fraction	----	50	µg/L		----	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		----	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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
>C10 - C16 Fraction	----	100	µg/L		----	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L		----	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L		----	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L		----	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	<100	<100
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**34.9**	**34.6**	**42.6**	**37.0**	**40.4**
2-Chlorophenol-D4	93951-73-6	1	%		**78.6**	**70.8**	**86.7**	**87.2**	**84.8**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M9-S	M9-M	M9-D	M10-S	M10-D
				Client sampling date / time	25-Jun-2016 12:00	25-Jun-2016 12:10	25-Jun-2016 12:20	25-Jun-2016 12:50	25-Jun-2016 13:10
Compound	CAS Number	LOR	Unit		EB1617699-031	EB1617699-032	EB1617699-033	EB1617699-034	EB1617699-035
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2.4.6-Tribromophenol	118-79-6	1	%		**87.6**	**72.7**	**89.1**	**89.6**	**86.2**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		**82.4**	**70.9**	**78.1**	**83.0**	**82.4**
Anthracene-d10	1719-06-8	1	%		**83.5**	**71.8**	**85.6**	**83.7**	**78.6**
4-Terphenyl-d14	1718-51-0	1	%		**114**	**96.1**	**112**	**112**	**101**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**89.7**	**96.4**	**91.8**	**88.5**	**85.7**
Toluene-D8	2037-26-5	2	%		**104**	**99.4**	**105**	**101**	**104**
4-Bromofluorobenzene	460-00-4	2	%		**107**	**106**	**111**	**106**	**113**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	DUP5	M25-S	M25-M	M25-D	M31-S
				Client sampling date / time	[05-Jul-2016]	04-Jul-2016 14:00	04-Jul-2016 14:10	04-Jul-2016 14:20	05-Jul-2016 11:30
Compound	CAS Number	LOR	Unit		EB1617699-036	EB1617699-037	EB1617699-038	EB1617699-039	EB1617699-040
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		1	2	6	14	8
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	<5	<5	<5	10
Arsenic	7440-38-2	0.5	µg/L		1.4	1.5	1.5	1.6	1.6
Barium	7440-39-3	1	µg/L		4	5	5	4	5
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Iron	7439-89-6	5	µg/L		<5	<5	<5	21	14
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		7670	7330	7340	7440	7420
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		1.7	2.4	1.7	1.7	1.8
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	9	45	476	30
Arsenic	7440-38-2	0.5	µg/L		1.5	1.8	1.8	2.2	1.9
Barium	7440-39-3	1	µg/L		4	5	5	5	5
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	1.0	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	0.4	<0.2
Copper	7440-50-8	1	µg/L		<1	3	3	2	2
Iron	7439-89-6	5	µg/L		15	15	69	799	51
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	0.8	1.4	1.6	0.7
Strontium	7440-24-6	10	µg/L		7230	7120	7150	7190	7040
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		<0.5	1.3	1.6	3.0	1.6

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	DUP5	M25-S	M25-M	M25-D	M31-S
				Client sampling date / time	[05-Jul-2016]	04-Jul-2016 14:00	04-Jul-2016 14:10	04-Jul-2016 14:20	05-Jul-2016 11:30
Compound	CAS Number	LOR	Unit		EB1617699-036	EB1617699-037	EB1617699-038	EB1617699-039	EB1617699-040
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	----	----	----	----
Arsenic	7440-38-2	0.2	µg/L		----	----	----	----	----
Barium	7440-39-3	0.5	µg/L		----	----	----	----	----
Cadmium	7440-43-9	0.05	µg/L		----	----	----	----	----
Chromium	7440-47-3	0.2	µg/L		----	----	----	----	----
Cobalt	7440-48-4	0.1	µg/L		----	----	----	----	----
Copper	7440-50-8	0.5	µg/L		----	----	----	----	----
Iron	7439-89-6	2	µg/L		----	----	----	----	----
Lead	7439-92-1	0.1	µg/L		----	----	----	----	----
Nickel	7440-02-0	0.5	µg/L		----	----	----	----	----
Strontium	7440-24-6	1	µg/L		----	----	----	----	----
Tin	7440-31-5	0.2	µg/L		----	----	----	----	----
Vanadium	7440-62-2	0.2	µg/L		----	----	----	----	----
Zinc	7440-66-6	1	µg/L		----	----	----	----	----
EG094T: Total metals in Fresh water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	----	----	----	----
Arsenic	7440-38-2	0.2	µg/L		----	----	----	----	----
Barium	7440-39-3	0.5	µg/L		----	----	----	----	----
Cadmium	7440-43-9	0.05	µg/L		----	----	----	----	----
Chromium	7440-47-3	0.2	µg/L		----	----	----	----	----
Cobalt	7440-48-4	0.1	µg/L		----	----	----	----	----
Copper	7440-50-8	0.5	µg/L		----	----	----	----	----
Iron	7439-89-6	2	µg/L		----	----	----	----	----
Lead	7439-92-1	0.1	µg/L		----	----	----	----	----
Nickel	7440-02-0	0.5	µg/L		----	----	----	----	----
Strontium	7440-24-6	1	µg/L		----	----	----	----	----
Tin	7440-31-5	0.2	µg/L		----	----	----	----	----
Vanadium	7440-62-2	0.2	µg/L		----	----	----	----	----
Zinc	7440-66-6	1	µg/L		----	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.14**	**0.14**	**0.13**	**0.15**	**0.06**
EK057G: Nitrite as N by Discrete Analyser									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	DUP5	M25-S	M25-M	M25-D	M31-S
				Client sampling date / time	[05-Jul-2016]	04-Jul-2016 14:00	04-Jul-2016 14:10	04-Jul-2016 14:20	05-Jul-2016 11:30
Compound	CAS Number	LOR	Unit		EB1617699-036	EB1617699-037	EB1617699-038	EB1617699-039	EB1617699-040
					Result	Result	Result	Result	Result
EK057G: Nitrite as N by Discrete Analyser - Continued									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	<0.01	<0.01	**0.03**	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	<0.01	<0.01	**0.03**	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	<1	<1	<1	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	DUP5	M25-S	M25-M	M25-D	M31-S
				Client sampling date / time	[05-Jul-2016]	04-Jul-2016 14:00	04-Jul-2016 14:10	04-Jul-2016 14:20	05-Jul-2016 11:30
Compound	CAS Number	LOR	Unit		EB1617699-036	EB1617699-037	EB1617699-038	EB1617699-039	EB1617699-040
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C10 - C14 Fraction	----	50	µg/L		----	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
C15 - C28 Fraction	----	100	µg/L		----	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C29 - C36 Fraction	----	50	µg/L		----	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		----	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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
>C10 - C16 Fraction	----	100	µg/L		----	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L		----	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L		----	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L		----	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	<100	<100
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**38.4**	**31.7**	**49.6**	**50.2**	**46.3**
2-Chlorophenol-D4	93951-73-6	1	%		**80.6**	**75.2**	**93.6**	**82.2**	**79.0**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	DUP5	M25-S	M25-M	M25-D	M31-S
				Client sampling date / time	[05-Jul-2016]	04-Jul-2016 14:00	04-Jul-2016 14:10	04-Jul-2016 14:20	05-Jul-2016 11:30
Compound	CAS Number	LOR	Unit		EB1617699-036	EB1617699-037	EB1617699-038	EB1617699-039	EB1617699-040
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2.4.6-Tribromophenol	118-79-6	1	%		75.1	76.0	82.7	81.2	74.8
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		80.6	76.5	85.9	87.1	82.5
Anthracene-d10	1719-06-8	1	%		74.3	71.6	84.4	78.8	73.3
4-Terphenyl-d14	1718-51-0	1	%		99.4	94.6	114	102	99.5
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		91.5	94.1	93.5	98.6	89.4
Toluene-D8	2037-26-5	2	%		98.7	110	102	99.2	101
4-Bromofluorobenzene	460-00-4	2	%		102	114	106	108	111

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID	M31-M	M31-D	M37-S	M37-M	M37-D
				Client sampling date / time	05-Jul-2016 11:40	05-Jul-2016 11:50	05-Jul-2016 16:30	05-Jul-2016 16:40	05-Jul-2016 16:50
					EB1617699-041	EB1617699-042	EB1617699-043	EB1617699-044	EB1617699-045
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		**6**	**1**	**4**	**6**	**4**
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	<5	<5	<5	<5
Arsenic	7440-38-2	0.5	µg/L		**1.6**	**1.6**	**1.4**	**1.4**	**1.5**
Barium	7440-39-3	1	µg/L		**4**	**4**	**4**	**4**	**4**
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Iron	7439-89-6	5	µg/L		**6**	**8**	<5	<5	<5
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		**7460**	**7400**	**7430**	**7510**	**7550**
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		**1.6**	**1.5**	**1.1**	**0.9**	**1.4**
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		**21**	**37**	<5	<5	**15**
Arsenic	7440-38-2	0.5	µg/L		**1.8**	**2.0**	**1.9**	**1.9**	**1.9**
Barium	7440-39-3	1	µg/L		**5**	**4**	**5**	**5**	**4**
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	**0.3**	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		**2**	**2**	**1**	**1**	**1**
Iron	7439-89-6	5	µg/L		**43**	**66**	**42**	**17**	**37**
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		**0.6**	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		**7150**	**7240**	**7190**	**7210**	**7170**
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		**1.4**	**1.4**	**1.3**	**1.2**	**1.2**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M31-M	M31-D	M37-S	M37-M	M37-D
				Client sampling date / time	05-Jul-2016 11:40	05-Jul-2016 11:50	05-Jul-2016 16:30	05-Jul-2016 16:40	05-Jul-2016 16:50
Compound	CAS Number	LOR	Unit		EB1617699-041	EB1617699-042	EB1617699-043	EB1617699-044	EB1617699-045
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	----	----	----	----
Arsenic	7440-38-2	0.2	µg/L		----	----	----	----	----
Barium	7440-39-3	0.5	µg/L		----	----	----	----	----
Cadmium	7440-43-9	0.05	µg/L		----	----	----	----	----
Chromium	7440-47-3	0.2	µg/L		----	----	----	----	----
Cobalt	7440-48-4	0.1	µg/L		----	----	----	----	----
Copper	7440-50-8	0.5	µg/L		----	----	----	----	----
Iron	7439-89-6	2	µg/L		----	----	----	----	----
Lead	7439-92-1	0.1	µg/L		----	----	----	----	----
Nickel	7440-02-0	0.5	µg/L		----	----	----	----	----
Strontium	7440-24-6	1	µg/L		----	----	----	----	----
Tin	7440-31-5	0.2	µg/L		----	----	----	----	----
Vanadium	7440-62-2	0.2	µg/L		----	----	----	----	----
Zinc	7440-66-6	1	µg/L		----	----	----	----	----
EG094T: Total metals in Fresh water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	----	----	----	----
Arsenic	7440-38-2	0.2	µg/L		----	----	----	----	----
Barium	7440-39-3	0.5	µg/L		----	----	----	----	----
Cadmium	7440-43-9	0.05	µg/L		----	----	----	----	----
Chromium	7440-47-3	0.2	µg/L		----	----	----	----	----
Cobalt	7440-48-4	0.1	µg/L		----	----	----	----	----
Copper	7440-50-8	0.5	µg/L		----	----	----	----	----
Iron	7439-89-6	2	µg/L		----	----	----	----	----
Lead	7439-92-1	0.1	µg/L		----	----	----	----	----
Nickel	7440-02-0	0.5	µg/L		----	----	----	----	----
Strontium	7440-24-6	1	µg/L		----	----	----	----	----
Tin	7440-31-5	0.2	µg/L		----	----	----	----	----
Vanadium	7440-62-2	0.2	µg/L		----	----	----	----	----
Zinc	7440-66-6	1	µg/L		----	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.15**	**0.15**	**0.13**	**0.14**	**0.17**
EK057G: Nitrite as N by Discrete Analyser									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M31-M	M31-D	M37-S	M37-M	M37-D
				Client sampling date / time	05-Jul-2016 11:40	05-Jul-2016 11:50	05-Jul-2016 16:30	05-Jul-2016 16:40	05-Jul-2016 16:50
Compound	CAS Number	LOR	Unit		EB1617699-041	EB1617699-042	EB1617699-043	EB1617699-044	EB1617699-045
					Result	Result	Result	Result	Result
EK057G: Nitrite as N by Discrete Analyser - Continued									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	**0.03**	<0.01	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	<1	<1	<1	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M31-M	M31-D	M37-S	M37-M	M37-D
				Client sampling date / time	05-Jul-2016 11:40	05-Jul-2016 11:50	05-Jul-2016 16:30	05-Jul-2016 16:40	05-Jul-2016 16:50
Compound	CAS Number	LOR	Unit		EB1617699-041	EB1617699-042	EB1617699-043	EB1617699-044	EB1617699-045
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C10 - C14 Fraction	----	50	µg/L		----	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
C15 - C28 Fraction	----	100	µg/L		----	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C29 - C36 Fraction	----	50	µg/L		----	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		----	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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
>C10 - C16 Fraction	----	100	µg/L		----	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L		----	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L		----	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L		----	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	<100	<100
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**30.6**	**40.6**	**50.8**	**41.8**	**35.9**
2-Chlorophenol-D4	93951-73-6	1	%		**52.7**	**75.2**	**87.0**	**77.8**	**67.1**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M31-M	M31-D	M37-S	M37-M	M37-D
				Client sampling date / time	05-Jul-2016 11:40	05-Jul-2016 11:50	05-Jul-2016 16:30	05-Jul-2016 16:40	05-Jul-2016 16:50
Compound	CAS Number	LOR	Unit		EB1617699-041	EB1617699-042	EB1617699-043	EB1617699-044	EB1617699-045
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2.4.6-Tribromophenol	118-79-6	1	%		54.8	73.1	87.8	74.6	62.6
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		56.5	78.0	95.8	83.1	70.8
Anthracene-d10	1719-06-8	1	%		51.7	70.4	86.4	78.8	65.2
4-Terphenyl-d14	1718-51-0	1	%		71.4	90.1	115	102	86.8
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		88.7	86.7	92.2	95.5	92.6
Toluene-D8	2037-26-5	2	%		100	102	97.8	104	101
4-Bromofluorobenzene	460-00-4	2	%		109	112	108	112	113

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M43-S	M43-M	M43-D	18	19
				Client sampling date / time	06-Jul-2016 11:00	06-Jul-2016 11:10	06-Jul-2016 11:20	27-Jun-2016 09:00	27-Jun-2016 13:30
Compound	CAS Number	LOR	Unit		EB1617699-046	EB1617699-047	EB1617699-048	EB1617699-049	EB1617699-050
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		**2**	**1**	**5**	**62**	**66**
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		**26**	<5	<5	----	----
Arsenic	7440-38-2	0.5	µg/L		**1.4**	**1.5**	**1.6**	----	----
Barium	7440-39-3	1	µg/L		**5**	**4**	**4**	----	----
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	----	----
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	----	----
Copper	7440-50-8	1	µg/L		<1	<1	<1	----	----
Iron	7439-89-6	5	µg/L		<5	<5	<5	----	----
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	----	----
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Strontium	7440-24-6	10	µg/L		**7450**	**7580**	**7660**	----	----
Tin	7440-31-5	5	µg/L		<5	<5	<5	----	----
Vanadium	7440-62-2	0.5	µg/L		**1.5**	**1.1**	**1.2**	----	----
Zinc	7440-66-6	5	µg/L		<5	<5	<5	----	----
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		**29**	**18**	**71**	----	----
Arsenic	7440-38-2	0.5	µg/L		**1.8**	**2.0**	**2.0**	----	----
Barium	7440-39-3	1	µg/L		**6**	**5**	**5**	----	----
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	----	----
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	----	----
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	----	----
Copper	7440-50-8	1	µg/L		**1**	**1**	**1**	----	----
Iron	7439-89-6	5	µg/L		**49**	**33**	**132**	----	----
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	----	----
Nickel	7440-02-0	0.5	µg/L		**0.7**	**1.6**	<0.5	----	----
Strontium	7440-24-6	10	µg/L		**7040**	**7160**	**7170**	----	----
Tin	7440-31-5	5	µg/L		<5	<5	<5	----	----
Vanadium	7440-62-2	0.5	µg/L		**1.3**	**1.2**	**1.5**	----	----

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID	M43-S	M43-M	M43-D	18	19
				Client sampling date / time	06-Jul-2016 11:00	06-Jul-2016 11:10	06-Jul-2016 11:20	27-Jun-2016 09:00	27-Jun-2016 13:30
					EB1617699-046	EB1617699-047	EB1617699-048	EB1617699-049	EB1617699-050
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	<5	<5	----	----
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	----	----	**16**	**18**
Arsenic	7440-38-2	0.2	µg/L		----	----	----	**0.5**	**0.4**
Barium	7440-39-3	0.5	µg/L		----	----	----	**5.3**	**5.5**
Cadmium	7440-43-9	0.05	µg/L		----	----	----	<0.05	<0.05
Chromium	7440-47-3	0.2	µg/L		----	----	----	<0.2	<0.2
Cobalt	7440-48-4	0.1	µg/L		----	----	----	<0.1	<0.1
Copper	7440-50-8	0.5	µg/L		----	----	----	**0.7**	**0.7**
Iron	7439-89-6	2	µg/L		----	----	----	**20**	**28**
Lead	7439-92-1	0.1	µg/L		----	----	----	<0.1	<0.1
Nickel	7440-02-0	0.5	µg/L		----	----	----	<0.5	<0.5
Strontium	7440-24-6	1	µg/L		----	----	----	**105**	**111**
Tin	7440-31-5	0.2	µg/L		----	----	----	<0.2	<0.2
Vanadium	7440-62-2	0.2	µg/L		----	----	----	**2.4**	**2.5**
Zinc	7440-66-6	1	µg/L		----	----	----	<1	<1
EG094T: Total metals in Fresh water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	----	----	**2990**	**2620**
Arsenic	7440-38-2	0.2	µg/L		----	----	----	**1.1**	**0.9**
Barium	7440-39-3	0.5	µg/L		----	----	----	**16.5**	**16.8**
Cadmium	7440-43-9	0.05	µg/L		----	----	----	<0.05	<0.05
Chromium	7440-47-3	0.2	µg/L		----	----	----	**4.5**	**4.0**
Cobalt	7440-48-4	0.1	µg/L		----	----	----	**1.8**	**1.6**
Copper	7440-50-8	0.5	µg/L		----	----	----	**5.1**	**4.9**
Iron	7439-89-6	2	µg/L		----	----	----	**4270**	**3850**
Lead	7439-92-1	0.1	µg/L		----	----	----	**1.0**	**1.0**
Nickel	7440-02-0	0.5	µg/L		----	----	----	**4.0**	**3.4**
Strontium	7440-24-6	1	µg/L		----	----	----	**123**	**118**
Tin	7440-31-5	0.2	µg/L		----	----	----	<0.2	<0.2
Vanadium	7440-62-2	0.2	µg/L		----	----	----	**11.0**	**9.8**
Zinc	7440-66-6	1	µg/L		----	----	----	**9**	**6**
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.16**	**0.15**	**0.14**	<0.01	<0.01
EK057G: Nitrite as N by Discrete Analyser									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M43-S	M43-M	M43-D	18	19
				Client sampling date / time	06-Jul-2016 11:00	06-Jul-2016 11:10	06-Jul-2016 11:20	27-Jun-2016 09:00	27-Jun-2016 13:30
Compound	CAS Number	LOR	Unit		EB1617699-046	EB1617699-047	EB1617699-048	EB1617699-049	EB1617699-050
					Result	Result	Result	Result	Result
EK057G: Nitrite as N by Discrete Analyser - Continued									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	<0.01	<0.01	**0.05**	**0.04**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	<0.01	<0.01	**0.05**	**0.04**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.05	<0.05	<0.05	**0.05**	**0.10**
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	<0.01	**0.02**	**0.02**
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	<1	<1	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M43-S	M43-M	M43-D	18	19
				Client sampling date / time	06-Jul-2016 11:00	06-Jul-2016 11:10	06-Jul-2016 11:20	27-Jun-2016 09:00	27-Jun-2016 13:30
Compound	CAS Number	LOR	Unit		EB1617699-046	EB1617699-047	EB1617699-048	EB1617699-049	EB1617699-050
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	----
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	<50	----
C10 - C14 Fraction	----	50	µg/L		----	----	----	----	<50
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	<100	----
C15 - C28 Fraction	----	100	µg/L		----	----	----	----	<100
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	----
C29 - C36 Fraction	----	50	µg/L		----	----	----	----	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	<50	<50	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		----	----	----	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	----
>C10 - C16 Fraction	----	100	µg/L		<100	<100	<100	<100	----
>C10 - C16 Fraction	----	100	µg/L		----	----	----	----	<100
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	<100	----
>C16 - C34 Fraction	----	100	µg/L		----	----	----	----	<100
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	----
>C34 - C40 Fraction	----	100	µg/L		----	----	----	----	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	<100	<100	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		----	----	----	----	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	<100	----
EP080: BTEXN									
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	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**39.1**	**43.0**	**44.5**	**30.0**	**34.5**
2-Chlorophenol-D4	93951-73-6	1	%		**80.0**	**76.0**	**81.2**	**63.8**	**71.3**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M43-S	M43-M	M43-D	18	19
				Client sampling date / time	06-Jul-2016 11:00	06-Jul-2016 11:10	06-Jul-2016 11:20	27-Jun-2016 09:00	27-Jun-2016 13:30
Compound	CAS Number	LOR	Unit		EB1617699-046	EB1617699-047	EB1617699-048	EB1617699-049	EB1617699-050
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2.4.6-Tribromophenol	118-79-6	1	%		77.6	75.4	81.4	68.9	76.5
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		83.2	80.4	87.4	78.2	87.0
Anthracene-d10	1719-06-8	1	%		75.9	73.6	81.6	68.3	76.2
4-Terphenyl-d14	1718-51-0	1	%		101	95.3	119	93.3	105
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		86.8	97.2	87.6	90.8	----
Toluene-D8	2037-26-5	2	%		103	103	103	106	----
4-Bromofluorobenzene	460-00-4	2	%		117	108	110	104	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	21	22	20	23-b	24-b
				Client sampling date / time	28-Jun-2016 09:00	28-Jun-2016 14:00	29-Jun-2016 09:00	02-Jul-2016 09:00	02-Jul-2016 14:00
Compound	CAS Number	LOR	Unit		EB1617699-051	EB1617699-052	EB1617699-053	EB1617699-054	EB1617699-055
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		**9**	**49**	**8**	**49**	**40**
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	----	<5	<5	----
Arsenic	7440-38-2	0.5	µg/L		<0.5	----	<0.5	<0.5	----
Barium	7440-39-3	1	µg/L		**20**	----	**17**	**34**	----
Cadmium	7440-43-9	0.2	µg/L		<0.2	----	<0.2	<0.2	----
Chromium	7440-47-3	0.5	µg/L		<0.5	----	<0.5	<0.5	----
Cobalt	7440-48-4	0.2	µg/L		<0.2	----	<0.2	<0.2	----
Copper	7440-50-8	1	µg/L		<1	----	<1	<1	----
Iron	7439-89-6	5	µg/L		**21**	----	**12**	<5	----
Lead	7439-92-1	0.2	µg/L		<0.2	----	<0.2	<0.2	----
Nickel	7440-02-0	0.5	µg/L		<0.5	----	<0.5	<0.5	----
Strontium	7440-24-6	10	µg/L		**2090**	----	**2870**	**1270**	----
Tin	7440-31-5	5	µg/L		<5	----	<5	<5	----
Vanadium	7440-62-2	0.5	µg/L		**0.7**	----	<0.5	**0.5**	----
Zinc	7440-66-6	5	µg/L		<5	----	<5	<5	----
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		**281**	----	**166**	**1210**	----
Arsenic	7440-38-2	0.5	µg/L		<0.5	----	<0.5	<0.5	----
Barium	7440-39-3	1	µg/L		**18**	----	**16**	**36**	----
Cadmium	7440-43-9	0.2	µg/L		<0.2	----	<0.2	<0.2	----
Chromium	7440-47-3	0.5	µg/L		<0.5	----	<0.5	**1.9**	----
Cobalt	7440-48-4	0.2	µg/L		**0.4**	----	**0.4**	**1.1**	----
Copper	7440-50-8	1	µg/L		<1	----	<1	<1	----
Iron	7439-89-6	5	µg/L		**789**	----	**720**	**2330**	----
Lead	7439-92-1	0.2	µg/L		<0.2	----	<0.2	**0.5**	----
Nickel	7440-02-0	0.5	µg/L		<0.5	----	<0.5	**1.8**	----
Strontium	7440-24-6	10	µg/L		**1560**	----	**2530**	**1220**	----
Tin	7440-31-5	5	µg/L		<5	----	<5	<5	----
Vanadium	7440-62-2	0.5	µg/L		**1.0**	----	<0.5	**4.6**	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	21	22	20	23-b	24-b
				Client sampling date / time	28-Jun-2016 09:00	28-Jun-2016 14:00	29-Jun-2016 09:00	02-Jul-2016 09:00	02-Jul-2016 14:00
Compound	CAS Number	LOR	Unit		EB1617699-051	EB1617699-052	EB1617699-053	EB1617699-054	EB1617699-055
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	----	<5	<5	----
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	**11**	----	----	**9**
Arsenic	7440-38-2	0.2	µg/L		----	**0.5**	----	----	**0.5**
Barium	7440-39-3	0.5	µg/L		----	**5.9**	----	----	**6.7**
Cadmium	7440-43-9	0.05	µg/L		----	<0.05	----	----	<0.05
Chromium	7440-47-3	0.2	µg/L		----	<0.2	----	----	<0.2
Cobalt	7440-48-4	0.1	µg/L		----	<0.1	----	----	<0.1
Copper	7440-50-8	0.5	µg/L		----	**0.8**	----	----	**0.6**
Iron	7439-89-6	2	µg/L		----	**13**	----	----	**17**
Lead	7439-92-1	0.1	µg/L		----	<0.1	----	----	<0.1
Nickel	7440-02-0	0.5	µg/L		----	<0.5	----	----	<0.5
Strontium	7440-24-6	1	µg/L		----	**140**	----	----	**115**
Tin	7440-31-5	0.2	µg/L		----	<0.2	----	----	<0.2
Vanadium	7440-62-2	0.2	µg/L		----	**2.4**	----	----	**2.4**
Zinc	7440-66-6	1	µg/L		----	<1	----	----	<1
EG094T: Total metals in Fresh water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	**1510**	----	----	**1610**
Arsenic	7440-38-2	0.2	µg/L		----	**0.7**	----	----	**0.8**
Barium	7440-39-3	0.5	µg/L		----	**10.2**	----	----	**13.4**
Cadmium	7440-43-9	0.05	µg/L		----	<0.05	----	----	<0.05
Chromium	7440-47-3	0.2	µg/L		----	**2.4**	----	----	**2.4**
Cobalt	7440-48-4	0.1	µg/L		----	**1.0**	----	----	**1.0**
Copper	7440-50-8	0.5	µg/L		----	**3.2**	----	----	**2.8**
Iron	7439-89-6	2	µg/L		----	**2370**	----	----	**2420**
Lead	7439-92-1	0.1	µg/L		----	**0.6**	----	----	**0.6**
Nickel	7440-02-0	0.5	µg/L		----	**2.2**	----	----	**2.1**
Strontium	7440-24-6	1	µg/L		----	**119**	----	----	**125**
Tin	7440-31-5	0.2	µg/L		----	<0.2	----	----	<0.2
Vanadium	7440-62-2	0.2	µg/L		----	**6.7**	----	----	**7.2**
Zinc	7440-66-6	1	µg/L		----	**4**	----	----	**4**
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.04**	**0.02**	**0.04**	**0.07**	**0.02**
EK057G: Nitrite as N by Discrete Analyser									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	21	22	20	23-b	24-b
				Client sampling date / time	28-Jun-2016 09:00	28-Jun-2016 14:00	29-Jun-2016 09:00	02-Jul-2016 09:00	02-Jul-2016 14:00
Compound	CAS Number	LOR	Unit		EB1617699-051	EB1617699-052	EB1617699-053	EB1617699-054	EB1617699-055
					Result	Result	Result	Result	Result
EK057G: Nitrite as N by Discrete Analyser - Continued									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.03**	**0.04**	**0.01**	**0.12**	**0.03**
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.03**	**0.04**	**0.01**	**0.12**	**0.03**
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.06**	<0.05	<0.05	<0.05	<0.05
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		**0.07**	**0.08**	**0.03**	**0.03**	**0.02**
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	<2	**2**	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1	µg/L		----	----	----	----	----
Acenaphthylene	208-96-8	1	µg/L		----	----	----	----	----
Acenaphthene	83-32-9	1	µg/L		----	----	----	----	----
Fluorene	86-73-7	1	µg/L		----	----	----	----	----
Phenanthrene	85-01-8	1	µg/L		----	----	----	----	----
Anthracene	120-12-7	1	µg/L		----	----	----	----	----
Fluoranthene	206-44-0	1	µg/L		----	----	----	----	----
Pyrene	129-00-0	1	µg/L		----	----	----	----	----
Benz(a)anthracene	56-55-3	1	µg/L		----	----	----	----	----
Chrysene	218-01-9	1	µg/L		----	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L		----	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1	µg/L		----	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		----	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L		----	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1	µg/L		----	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1	µg/L		----	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L		----	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L		----	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	21	22	20	23-b	24-b
				Client sampling date / time	28-Jun-2016 09:00	28-Jun-2016 14:00	29-Jun-2016 09:00	02-Jul-2016 09:00	02-Jul-2016 14:00
Compound	CAS Number	LOR	Unit		EB1617699-051	EB1617699-052	EB1617699-053	EB1617699-054	EB1617699-055
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	<20	----	<20
C10 - C14 Fraction	----	50	µg/L		----	----	----	----	----
C10 - C14 Fraction	----	50	µg/L		----	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		----	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		----	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		----	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		----	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		----	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		----	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	<20	----	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	----	<20	----	<20
>C10 - C16 Fraction	----	100	µg/L		----	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		----	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		----	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		----	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		----	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		----	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		----	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		----	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		----	----	----	----	----
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		----	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1	%		----	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	21	22	20	23-b	24-b
				Client sampling date / time	28-Jun-2016 09:00	28-Jun-2016 14:00	29-Jun-2016 09:00	02-Jul-2016 09:00	02-Jul-2016 14:00
Compound	CAS Number	LOR	Unit		EB1617699-051	EB1617699-052	EB1617699-053	EB1617699-054	EB1617699-055
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2.4.6-Tribromophenol	118-79-6	1	%		----	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		----	----	----	----	----
Anthracene-d10	1719-06-8	1	%		----	----	----	----	----
4-Terphenyl-d14	1718-51-0	1	%		----	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**84.3**	----	**86.3**	----	**89.0**
Toluene-D8	2037-26-5	2	%		**104**	----	**95.7**	----	**102**
4-Bromofluorobenzene	460-00-4	2	%		**110**	----	**107**	----	**108**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	16	17	28	29	TRIP3
				Client sampling date / time	03-Jul-2016 10:00	03-Jul-2016 14:00	07-Jul-2016 10:00	07-Jul-2016 10:30	[07-Jul-2016]
Compound	CAS Number	LOR	Unit		EB1617699-056	EB1617699-057	EB1617699-058	EB1617699-059	EB1617699-060
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		55	74	9	10	8
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	----	<5	7	<5
Arsenic	7440-38-2	0.5	µg/L		----	----	1.6	1.4	1.6
Barium	7440-39-3	1	µg/L		----	----	6	9	5
Cadmium	7440-43-9	0.2	µg/L		----	----	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		----	----	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		----	----	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		----	----	<1	<1	<1
Iron	7439-89-6	5	µg/L		----	----	6	7	<5
Lead	7439-92-1	0.2	µg/L		----	----	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		----	----	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		----	----	7870	8010	7640
Tin	7440-31-5	5	µg/L		----	----	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		----	----	2.2	1.9	1.4
Zinc	7440-66-6	5	µg/L		----	----	<5	<5	<5
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	----	74	97	8
Arsenic	7440-38-2	0.5	µg/L		----	----	1.8	1.8	1.9
Barium	7440-39-3	1	µg/L		----	----	6	9	5
Cadmium	7440-43-9	0.2	µg/L		----	----	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		----	----	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		----	----	0.2	0.3	<0.2
Copper	7440-50-8	1	µg/L		----	----	<1	2	1
Iron	7439-89-6	5	µg/L		----	----	112	142	22
Lead	7439-92-1	0.2	µg/L		----	----	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		----	----	0.9	1.3	0.7
Strontium	7440-24-6	10	µg/L		----	----	7460	7660	7420
Tin	7440-31-5	5	µg/L		----	----	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		----	----	1.8	2.3	1.4

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	16	17	28	29	TRIP3
				Client sampling date / time	03-Jul-2016 10:00	03-Jul-2016 14:00	07-Jul-2016 10:00	07-Jul-2016 10:30	[07-Jul-2016]
Compound	CAS Number	LOR	Unit		EB1617699-056	EB1617699-057	EB1617699-058	EB1617699-059	EB1617699-060
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		----	----	<5	<5	<5
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		19	16	----	----	----
Arsenic	7440-38-2	0.2	µg/L		0.4	0.4	----	----	----
Barium	7440-39-3	0.5	µg/L		6.0	6.2	----	----	----
Cadmium	7440-43-9	0.05	µg/L		<0.05	<0.05	----	----	----
Chromium	7440-47-3	0.2	µg/L		<0.2	<0.2	----	----	----
Cobalt	7440-48-4	0.1	µg/L		<0.1	<0.1	----	----	----
Copper	7440-50-8	0.5	µg/L		0.5	0.5	----	----	----
Iron	7439-89-6	2	µg/L		18	13	----	----	----
Lead	7439-92-1	0.1	µg/L		<0.1	<0.1	----	----	----
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	----	----	----
Strontium	7440-24-6	1	µg/L		127	130	----	----	----
Tin	7440-31-5	0.2	µg/L		<0.2	<0.2	----	----	----
Vanadium	7440-62-2	0.2	µg/L		1.9	1.8	----	----	----
Zinc	7440-66-6	1	µg/L		<1	<1	----	----	----
EG094T: Total metals in Fresh water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		1930	3030	----	----	----
Arsenic	7440-38-2	0.2	µg/L		0.7	1.0	----	----	----
Barium	7440-39-3	0.5	µg/L		14.5	20.1	----	----	----
Cadmium	7440-43-9	0.05	µg/L		<0.05	<0.05	----	----	----
Chromium	7440-47-3	0.2	µg/L		2.5	4.0	----	----	----
Cobalt	7440-48-4	0.1	µg/L		1.1	2.0	----	----	----
Copper	7440-50-8	0.5	µg/L		2.6	4.3	----	----	----
Iron	7439-89-6	2	µg/L		2600	4380	----	----	----
Lead	7439-92-1	0.1	µg/L		0.7	1.2	----	----	----
Nickel	7440-02-0	0.5	µg/L		2.1	3.7	----	----	----
Strontium	7440-24-6	1	µg/L		143	153	----	----	----
Tin	7440-31-5	0.2	µg/L		<0.2	<0.2	----	----	----
Vanadium	7440-62-2	0.2	µg/L		7.3	10.8	----	----	----
Zinc	7440-66-6	1	µg/L		4	8	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		0.02	0.02	0.16	0.14	0.14
EK057G: Nitrite as N by Discrete Analyser									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	16	17	28	29	TRIP3
				Client sampling date / time	03-Jul-2016 10:00	03-Jul-2016 14:00	07-Jul-2016 10:00	07-Jul-2016 10:30	[07-Jul-2016]
Compound	CAS Number	LOR	Unit		EB1617699-056	EB1617699-057	EB1617699-058	EB1617699-059	EB1617699-060
					Result	Result	Result	Result	Result
EK057G: Nitrite as N by Discrete Analyser - Continued									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.05**	**0.07**	<0.01	<0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.05**	**0.07**	<0.01	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.15**	**0.11**	**0.06**	<0.05	<0.05
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		**0.02**	**0.02**	<0.01	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<2	<2	<1	**4**	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	16	17	28	29	TRIP3
				Client sampling date / time	03-Jul-2016 10:00	03-Jul-2016 14:00	07-Jul-2016 10:00	07-Jul-2016 10:30	[07-Jul-2016]
Compound	CAS Number	LOR	Unit		EB1617699-056	EB1617699-057	EB1617699-058	EB1617699-059	EB1617699-060
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C10 - C14 Fraction	----	50	µg/L		----	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
C15 - C28 Fraction	----	100	µg/L		----	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C29 - C36 Fraction	----	50	µg/L		----	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		----	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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
>C10 - C16 Fraction	----	100	µg/L		----	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L		----	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L		----	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L		----	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	<100	<100
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**34.1**	**30.5**	**33.8**	**36.3**	**34.6**
2-Chlorophenol-D4	93951-73-6	1	%		**75.1**	**67.1**	**74.0**	**79.9**	**76.3**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	16	17	28	29	TRIP3
				Client sampling date / time	03-Jul-2016 10:00	03-Jul-2016 14:00	07-Jul-2016 10:00	07-Jul-2016 10:30	[07-Jul-2016]
Compound	CAS Number	LOR	Unit		EB1617699-056	EB1617699-057	EB1617699-058	EB1617699-059	EB1617699-060
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2.4.6-Tribromophenol	118-79-6	1	%		84.2	72.4	78.6	86.5	78.8
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		90.3	80.7	97.5	102	101
Anthracene-d10	1719-06-8	1	%		80.4	71.4	75.8	81.9	77.6
4-Terphenyl-d14	1718-51-0	1	%		106	93.4	102	110	105
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		90.8	85.4	87.2	85.7	88.1
Toluene-D8	2037-26-5	2	%		103	104	105	106	101
4-Bromofluorobenzene	460-00-4	2	%		106	110	108	111	112

Analytical Results

Sub-Matrix: **WATER**
(Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID	M13-S	M13-M	M13-D	M19-S	M19-D
				Client sampling date / time	06-Jul-2016 12:30	06-Jul-2016 12:40	06-Jul-2016 12:50	07-Jul-2016 09:10	07-Jul-2016 09:20
					EB1617699-061	EB1617699-062	EB1617699-063	EB1617699-064	EB1617699-065
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		**7**	**1**	**5**	**7**	**2**
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	<5	<5	<5	<5
Arsenic	7440-38-2	0.5	µg/L		**1.5**	**1.5**	**1.4**	**1.4**	**1.5**
Barium	7440-39-3	1	µg/L		**6**	**4**	**4**	**4**	**5**
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Iron	7439-89-6	5	µg/L		**10**	**5**	**6**	<5	**6**
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		**7520**	**7740**	**7650**	**7770**	**7850**
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		**1.3**	**0.9**	**1.0**	**1.1**	**1.3**
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		**45**	**11**	**19**	**11**	**18**
Arsenic	7440-38-2	0.5	µg/L		**1.8**	**1.9**	**1.9**	**1.9**	**1.8**
Barium	7440-39-3	1	µg/L		**6**	**5**	**5**	**5**	**5**
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Iron	7439-89-6	5	µg/L		**67**	**26**	**48**	**25**	**40**
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		**0.6**	**0.6**	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		**7030**	**7120**	**7180**	**7150**	**7260**
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		**1.4**	**1.0**	**1.2**	**1.2**	**1.2**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M13-S	M13-M	M13-D	M19-S	M19-D
				Client sampling date / time	06-Jul-2016 12:30	06-Jul-2016 12:40	06-Jul-2016 12:50	07-Jul-2016 09:10	07-Jul-2016 09:20
Compound	CAS Number	LOR	Unit		EB1617699-061	EB1617699-062	EB1617699-063	EB1617699-064	EB1617699-065
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	----	----	----	----
Arsenic	7440-38-2	0.2	µg/L		----	----	----	----	----
Barium	7440-39-3	0.5	µg/L		----	----	----	----	----
Cadmium	7440-43-9	0.05	µg/L		----	----	----	----	----
Chromium	7440-47-3	0.2	µg/L		----	----	----	----	----
Cobalt	7440-48-4	0.1	µg/L		----	----	----	----	----
Copper	7440-50-8	0.5	µg/L		----	----	----	----	----
Iron	7439-89-6	2	µg/L		----	----	----	----	----
Lead	7439-92-1	0.1	µg/L		----	----	----	----	----
Nickel	7440-02-0	0.5	µg/L		----	----	----	----	----
Strontium	7440-24-6	1	µg/L		----	----	----	----	----
Tin	7440-31-5	0.2	µg/L		----	----	----	----	----
Vanadium	7440-62-2	0.2	µg/L		----	----	----	----	----
Zinc	7440-66-6	1	µg/L		----	----	----	----	----
EG094T: Total metals in Fresh water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	----	----	----	----
Arsenic	7440-38-2	0.2	µg/L		----	----	----	----	----
Barium	7440-39-3	0.5	µg/L		----	----	----	----	----
Cadmium	7440-43-9	0.05	µg/L		----	----	----	----	----
Chromium	7440-47-3	0.2	µg/L		----	----	----	----	----
Cobalt	7440-48-4	0.1	µg/L		----	----	----	----	----
Copper	7440-50-8	0.5	µg/L		----	----	----	----	----
Iron	7439-89-6	2	µg/L		----	----	----	----	----
Lead	7439-92-1	0.1	µg/L		----	----	----	----	----
Nickel	7440-02-0	0.5	µg/L		----	----	----	----	----
Strontium	7440-24-6	1	µg/L		----	----	----	----	----
Tin	7440-31-5	0.2	µg/L		----	----	----	----	----
Vanadium	7440-62-2	0.2	µg/L		----	----	----	----	----
Zinc	7440-66-6	1	µg/L		----	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.09**	**0.09**	**0.12**	**0.11**	**0.11**
EK057G: Nitrite as N by Discrete Analyser									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M13-S	M13-M	M13-D	M19-S	M19-D
				Client sampling date / time	06-Jul-2016 12:30	06-Jul-2016 12:40	06-Jul-2016 12:50	07-Jul-2016 09:10	07-Jul-2016 09:20
Compound	CAS Number	LOR	Unit		EB1617699-061	EB1617699-062	EB1617699-063	EB1617699-064	EB1617699-065
					Result	Result	Result	Result	Result
EK057G: Nitrite as N by Discrete Analyser - Continued									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	<1	<1	<1	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M13-S	M13-M	M13-D	M19-S	M19-D
				Client sampling date / time	06-Jul-2016 12:30	06-Jul-2016 12:40	06-Jul-2016 12:50	07-Jul-2016 09:10	07-Jul-2016 09:20
Compound	CAS Number	LOR	Unit		EB1617699-061	EB1617699-062	EB1617699-063	EB1617699-064	EB1617699-065
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C10 - C14 Fraction	----	50	µg/L		----	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
C15 - C28 Fraction	----	100	µg/L		----	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C29 - C36 Fraction	----	50	µg/L		----	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		<50	<50	<50	<50	<50
^ **C10 - C36 Fraction (sum)**	----	50	µg/L		----	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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
>C10 - C16 Fraction	----	100	µg/L		----	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L		----	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L		----	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		<100	<100	<100	<100	<100
^ **>C10 - C40 Fraction (sum)**	----	100	µg/L		----	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	100	µg/L		<100	<100	<100	<100	<100
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**34.5**	**33.4**	**35.9**	**33.9**	**28.6**
2-Chlorophenol-D4	93951-73-6	1	%		**76.5**	**76.0**	**79.3**	**74.9**	**65.3**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M13-S	M13-M	M13-D	M19-S	M19-D
				Client sampling date / time	06-Jul-2016 12:30	06-Jul-2016 12:40	06-Jul-2016 12:50	07-Jul-2016 09:10	07-Jul-2016 09:20
Compound	CAS Number	LOR	Unit		EB1617699-061	EB1617699-062	EB1617699-063	EB1617699-064	EB1617699-065
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2.4.6-Tribromophenol	118-79-6	1	%		83.4	76.9	83.3	78.9	65.8
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		100	95.6	99.8	94.8	84.6
Anthracene-d10	1719-06-8	1	%		79.6	76.6	80.0	74.7	66.7
4-Terphenyl-d14	1718-51-0	1	%		107	100	106	99.0	89.7
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		87.5	88.9	88.5	91.2	91.8
Toluene-D8	2037-26-5	2	%		102	98.9	97.3	101	98.6
4-Bromofluorobenzene	460-00-4	2	%		106	111	110	107	110

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M17-S	M17-D	M21-S	M21-D	M22-S
				Client sampling date / time	07-Jul-2016 08:30	07-Jul-2016 08:40	07-Jul-2016 10:20	07-Jul-2016 10:30	07-Jul-2016 12:30
Compound	CAS Number	LOR	Unit		EB1617699-066	EB1617699-067	EB1617699-068	EB1617699-069	EB1617699-070
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		3	2	6	4	7
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	<5	<5	<5	<5
Arsenic	7440-38-2	0.5	µg/L		1.4	1.6	1.5	1.6	1.5
Barium	7440-39-3	1	µg/L		4	4	5	5	5
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Iron	7439-89-6	5	µg/L		13	12	5	5	6
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		7740	7850	7810	7780	7800
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		1.8	1.3	1.4	1.4	1.8
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		30	34	13	14	10
Arsenic	7440-38-2	0.5	µg/L		1.9	1.9	1.7	1.8	1.8
Barium	7440-39-3	1	µg/L		5	5	5	5	5
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		5	<1	<1	<1	<1
Iron	7439-89-6	5	µg/L		30	67	30	60	24
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		7150	7150	7240	7180	7240
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		1.0	1.1	1.0	1.1	1.1

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M17-S	M17-D	M21-S	M21-D	M22-S
				Client sampling date / time	07-Jul-2016 08:30	07-Jul-2016 08:40	07-Jul-2016 10:20	07-Jul-2016 10:30	07-Jul-2016 12:30
Compound	CAS Number	LOR	Unit		EB1617699-066	EB1617699-067	EB1617699-068	EB1617699-069	EB1617699-070
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	----	----	----	----
Arsenic	7440-38-2	0.2	µg/L		----	----	----	----	----
Barium	7440-39-3	0.5	µg/L		----	----	----	----	----
Cadmium	7440-43-9	0.05	µg/L		----	----	----	----	----
Chromium	7440-47-3	0.2	µg/L		----	----	----	----	----
Cobalt	7440-48-4	0.1	µg/L		----	----	----	----	----
Copper	7440-50-8	0.5	µg/L		----	----	----	----	----
Iron	7439-89-6	2	µg/L		----	----	----	----	----
Lead	7439-92-1	0.1	µg/L		----	----	----	----	----
Nickel	7440-02-0	0.5	µg/L		----	----	----	----	----
Strontium	7440-24-6	1	µg/L		----	----	----	----	----
Tin	7440-31-5	0.2	µg/L		----	----	----	----	----
Vanadium	7440-62-2	0.2	µg/L		----	----	----	----	----
Zinc	7440-66-6	1	µg/L		----	----	----	----	----
EG094T: Total metals in Fresh water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	----	----	----	----
Arsenic	7440-38-2	0.2	µg/L		----	----	----	----	----
Barium	7440-39-3	0.5	µg/L		----	----	----	----	----
Cadmium	7440-43-9	0.05	µg/L		----	----	----	----	----
Chromium	7440-47-3	0.2	µg/L		----	----	----	----	----
Cobalt	7440-48-4	0.1	µg/L		----	----	----	----	----
Copper	7440-50-8	0.5	µg/L		----	----	----	----	----
Iron	7439-89-6	2	µg/L		----	----	----	----	----
Lead	7439-92-1	0.1	µg/L		----	----	----	----	----
Nickel	7440-02-0	0.5	µg/L		----	----	----	----	----
Strontium	7440-24-6	1	µg/L		----	----	----	----	----
Tin	7440-31-5	0.2	µg/L		----	----	----	----	----
Vanadium	7440-62-2	0.2	µg/L		----	----	----	----	----
Zinc	7440-66-6	1	µg/L		----	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.13**	**0.14**	**0.15**	**0.12**	**0.11**
EK057G: Nitrite as N by Discrete Analyser									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M17-S	M17-D	M21-S	M21-D	M22-S
				Client sampling date / time	07-Jul-2016 08:30	07-Jul-2016 08:40	07-Jul-2016 10:20	07-Jul-2016 10:30	07-Jul-2016 12:30
Compound	CAS Number	LOR	Unit		EB1617699-066	EB1617699-067	EB1617699-068	EB1617699-069	EB1617699-070
					Result	Result	Result	Result	Result
EK057G: Nitrite as N by Discrete Analyser - Continued									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	<1	<1	<1	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M17-S	M17-D	M21-S	M21-D	M22-S
				Client sampling date / time	07-Jul-2016 08:30	07-Jul-2016 08:40	07-Jul-2016 10:20	07-Jul-2016 10:30	07-Jul-2016 12:30
Compound	CAS Number	LOR	Unit		EB1617699-066	EB1617699-067	EB1617699-068	EB1617699-069	EB1617699-070
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C10 - C14 Fraction	----	50	µg/L		----	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
C15 - C28 Fraction	----	100	µg/L		----	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
C29 - C36 Fraction	----	50	µg/L		----	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		----	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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
>C10 - C16 Fraction	----	100	µg/L		----	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L		----	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L		----	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L		----	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	<100	<100
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**29.0**	**33.4**	**30.8**	**27.4**	**34.2**
2-Chlorophenol-D4	93951-73-6	1	%		**68.0**	**74.2**	**71.1**	**64.4**	**77.4**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M17-S	M17-D	M21-S	M21-D	M22-S
				Client sampling date / time	07-Jul-2016 08:30	07-Jul-2016 08:40	07-Jul-2016 10:20	07-Jul-2016 10:30	07-Jul-2016 12:30
Compound	CAS Number	LOR	Unit		EB1617699-066	EB1617699-067	EB1617699-068	EB1617699-069	EB1617699-070
					Result	Result	Result	Result	Result
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2.4.6-Tribromophenol	118-79-6	1	%		65.6	74.5	71.5	61.9	78.0
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		93.6	94.1	89.5	84.6	99.3
Anthracene-d10	1719-06-8	1	%		46.0	73.6	70.6	64.5	77.9
4-Terphenyl-d14	1718-51-0	1	%		62.6	97.9	93.8	88.3	104
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		95.2	93.1	87.8	94.4	86.7
Toluene-D8	2037-26-5	2	%		103	101	98.8	104	102
4-Bromofluorobenzene	460-00-4	2	%		113	110	115	107	106

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M22-D	Rinsate	TRIP BLANK 1	----	----
				Client sampling date / time	07-Jul-2016 12:40	07-Jul-2016 14:50	[19-Jan-2016]	----	----
Compound	CAS Number	LOR	Unit		EB1617699-071	EB1617699-072	EB1617699-073	--------	--------
					Result	Result	Result	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		**2**	----	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	----	----	----
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	----	----	----	----
Arsenic	7440-38-2	0.5	µg/L		**1.6**	----	----	----	----
Barium	7440-39-3	1	µg/L		**5**	----	----	----	----
Cadmium	7440-43-9	0.2	µg/L		<0.2	----	----	----	----
Chromium	7440-47-3	0.5	µg/L		<0.5	----	----	----	----
Cobalt	7440-48-4	0.2	µg/L		<0.2	----	----	----	----
Copper	7440-50-8	1	µg/L		<1	----	----	----	----
Iron	7439-89-6	5	µg/L		**7**	----	----	----	----
Lead	7439-92-1	0.2	µg/L		<0.2	----	----	----	----
Nickel	7440-02-0	0.5	µg/L		<0.5	----	----	----	----
Strontium	7440-24-6	10	µg/L		**7820**	----	----	----	----
Tin	7440-31-5	5	µg/L		<5	----	----	----	----
Vanadium	7440-62-2	0.5	µg/L		**2.2**	----	----	----	----
Zinc	7440-66-6	5	µg/L		<5	----	----	----	----
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		**14**	----	----	----	----
Arsenic	7440-38-2	0.5	µg/L		**1.8**	----	----	----	----
Barium	7440-39-3	1	µg/L		**5**	----	----	----	----
Cadmium	7440-43-9	0.2	µg/L		<0.2	----	----	----	----
Chromium	7440-47-3	0.5	µg/L		<0.5	----	----	----	----
Cobalt	7440-48-4	0.2	µg/L		<0.2	----	----	----	----
Copper	7440-50-8	1	µg/L		<1	----	----	----	----
Iron	7439-89-6	5	µg/L		**30**	----	----	----	----
Lead	7439-92-1	0.2	µg/L		<0.2	----	----	----	----
Nickel	7440-02-0	0.5	µg/L		<0.5	----	----	----	----
Strontium	7440-24-6	10	µg/L		**7180**	----	----	----	----
Tin	7440-31-5	5	µg/L		<5	----	----	----	----
Vanadium	7440-62-2	0.5	µg/L		**1.1**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M22-D	Rinsate	TRIP BLANK 1	----	----
				Client sampling date / time	07-Jul-2016 12:40	07-Jul-2016 14:50	[19-Jan-2016]	----	----
Compound	CAS Number	LOR	Unit		EB1617699-071	EB1617699-072	EB1617699-073	--------	--------
					Result	Result	Result	----	----
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	----	----	----	----
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	<5	----	----	----
Arsenic	7440-38-2	0.2	µg/L		----	<0.2	----	----	----
Barium	7440-39-3	0.5	µg/L		----	<0.5	----	----	----
Cadmium	7440-43-9	0.05	µg/L		----	<0.05	----	----	----
Chromium	7440-47-3	0.2	µg/L		----	<0.2	----	----	----
Cobalt	7440-48-4	0.1	µg/L		----	<0.1	----	----	----
Copper	7440-50-8	0.5	µg/L		----	<0.5	----	----	----
Iron	7439-89-6	2	µg/L		----	<2	----	----	----
Lead	7439-92-1	0.1	µg/L		----	<0.1	----	----	----
Nickel	7440-02-0	0.5	µg/L		----	<0.5	----	----	----
Strontium	7440-24-6	1	µg/L		----	<1	----	----	----
Tin	7440-31-5	0.2	µg/L		----	<0.2	----	----	----
Vanadium	7440-62-2	0.2	µg/L		----	<0.2	----	----	----
Zinc	7440-66-6	1	µg/L		----	<1	----	----	----
EG094T: Total metals in Fresh water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		----	<5	----	----	----
Arsenic	7440-38-2	0.2	µg/L		----	<0.2	----	----	----
Barium	7440-39-3	0.5	µg/L		----	<0.5	----	----	----
Cadmium	7440-43-9	0.05	µg/L		----	<0.05	----	----	----
Chromium	7440-47-3	0.2	µg/L		----	<0.2	----	----	----
Cobalt	7440-48-4	0.1	µg/L		----	<0.1	----	----	----
Copper	7440-50-8	0.5	µg/L		----	<0.5	----	----	----
Iron	7439-89-6	2	µg/L		----	<2	----	----	----
Lead	7439-92-1	0.1	µg/L		----	<0.1	----	----	----
Nickel	7440-02-0	0.5	µg/L		----	<0.5	----	----	----
Strontium	7440-24-6	1	µg/L		----	<1	----	----	----
Tin	7440-31-5	0.2	µg/L		----	<0.2	----	----	----
Vanadium	7440-62-2	0.2	µg/L		----	<0.2	----	----	----
Zinc	7440-66-6	1	µg/L		----	<1	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.10**	**0.04**	----	----	----
EK057G: Nitrite as N by Discrete Analyser									

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M22-D	Rinsate	TRIP BLANK 1	----	----
				Client sampling date / time	07-Jul-2016 12:40	07-Jul-2016 14:50	[19-Jan-2016]	----	----
Compound	CAS Number	LOR	Unit		EB1617699-071	EB1617699-072	EB1617699-073	--------	--------
					Result	Result	Result	----	----
EK057G: Nitrite as N by Discrete Analyser - Continued									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	<0.01	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.05	<0.05	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	----	----	----	----
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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	----	----	----
Benz(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	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M22-D	Rinsate	TRIP BLANK 1	----	----
				Client sampling date / time	07-Jul-2016 12:40	07-Jul-2016 14:50	[19-Jan-2016]	----	----
Compound	CAS Number	LOR	Unit		EB1617699-071	EB1617699-072	EB1617699-073	--------	--------
					Result	Result	Result	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	----	----
C10 - C14 Fraction	----	50	µg/L		<50	<50	----	----	----
C10 - C14 Fraction	----	50	µg/L		----	----	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	----	----	----
C15 - C28 Fraction	----	100	µg/L		----	----	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	----	----	----
C29 - C36 Fraction	----	50	µg/L		----	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L		----	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	<100	----	----	----
>C10 - C16 Fraction	----	100	µg/L		----	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	----	----	----
>C16 - C34 Fraction	----	100	µg/L		----	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	----	----	----
>C34 - C40 Fraction	----	100	µg/L		----	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		----	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	----	----	----
EP080: BTEXN									
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	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**32.9**	**25.7**	----	----	----
2-Chlorophenol-D4	93951-73-6	1	%		**75.2**	**67.5**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M22-D	Rinsate	TRIP BLANK 1	----	----
				Client sampling date / time	07-Jul-2016 12:40	07-Jul-2016 14:50	[19-Jan-2016]	----	----
Compound	CAS Number	LOR	Unit		EB1617699-071	EB1617699-072	EB1617699-073	--------	--------
					Result	Result	Result	----	----
EP075(SIM)S: Phenolic Compound Surrogates - Continued									
2.4.6-Tribromophenol	118-79-6	1	%		74.2	70.0	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		96.8	92.7	----	----	----
Anthracene-d10	1719-06-8	1	%		72.7	70.0	----	----	----
4-Terphenyl-d14	1718-51-0	1	%		100	96.6	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		88.8	93.2	95.8	----	----
Toluene-D8	2037-26-5	2	%		101	110	100	----	----
4-Bromofluorobenzene	460-00-4	2	%		109	113	107	----	----

Surrogate Control Limits

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	72
2-Chlorophenol-D4	93951-73-6	27	130
2.4.6-Tribromophenol	118-79-6	19	181
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	14	146
Anthracene-d10	1719-06-8	35	137
4-Terphenyl-d14	1718-51-0	36	154
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	66	138
Toluene-D8	2037-26-5	79	120
4-Bromofluorobenzene	460-00-4	74	118

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB1617699**	Page	: 1 of 32
Amendment	: **2**		
Client	: **BMT WBM GROUP LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR JEREMY VISSER	Contact	: John Pickering
Address	: PO BOX 203 SPRING HILL BRISBANE QLD 4004	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +61 07 3831 6744	Telephone	: +61 7 3552 8634
Project	: B21414 Elk	Date Samples Received	: 11-Jul-2016
Order number	: ----	Date Analysis Commenced	: 12-Jul-2016
C-O-C number	: ----	Issue Date	: 26-Jul-2016
Sampler	: CONOR JONES, DANIEL MORAN		
Site	: ----		
Quote number	: ----		
No. of samples received	: 74		
No. of samples analysed	: 73		

NATA Accredited Laboratory 825
Accredited for compliance with ISO/IEC 17025.

NATA
WORLD RECOGNISED ACCREDITATION

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

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.

Signatories	*Position*	*Accreditation Category*
Andrew Epps	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Andrew Epps	Senior Inorganic Chemist	WB Water Lab Brisbane, Stafford, QLD
Greg Vogel	Laboratory Manager	Brisbane Inorganics, Stafford, QLD
Greg Vogel	Laboratory Manager	WB Water Lab Brisbane, Stafford, QLD
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Matt Frost	Senior Organic Chemist	Brisbane Organics, Stafford, QLD

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 (%)*
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 515250)									
EB1617699-001	M1-S	EA025: Suspended Solids (SS)	----	1	mg/L	17	17	0.00	0% - 50%
EB1617699-011	M5-S	EA025: Suspended Solids (SS)	----	1	mg/L	1	2	0.00	No Limit
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 515251)									
EB1617699-021	DUP3	EA025: Suspended Solids (SS)	----	1	mg/L	47	51	8.71	0% - 20%
EB1617699-031	M9-S	EA025: Suspended Solids (SS)	----	1	mg/L	5	4	0.00	No Limit
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 515254)									
EB1617699-037	M25-S	EA025: Suspended Solids (SS)	----	1	mg/L	2	<1	0.00	No Limit
EB1617699-047	M43-M	EA025: Suspended Solids (SS)	----	1	mg/L	1	2	76.5	No Limit
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 515255)									
EB1617699-057	17	EA025: Suspended Solids (SS)	----	1	mg/L	74	78	4.27	0% - 20%
EB1617699-067	M17-D	EA025: Suspended Solids (SS)	----	1	mg/L	2	5	66.7	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 515772)									
EB1617699-001	M1-S	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EB1617699-011	M5-S	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 515773)									
EB1617699-021	DUP3	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EB1617699-031	M9-S	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 515776)									
EB1617699-041	M31-M	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EB1617699-051	21	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 515777)									
EB1617699-061	M13-S	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EB1617699-071	M22-D	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 (%)*
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 515823)									
EB1617699-001	M1-S	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EB1617699-011	M5-S	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 515824)									
EB1617699-021	DUP3	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EB1617699-031	M9-S	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 515825)									
EB1617699-041	M31-M	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EB1617699-051	21	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 515826)									
EB1617699-061	M13-S	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EB1617699-071	M22-D	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 515559)									
EB1617699-001	M1-S	EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Arsenic	7440-38-2	0.5	µg/L	0.8	0.6	14.1	No Limit
		EG093A-F: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Vanadium	7440-62-2	0.5	µg/L	2.5	2.2	13.8	No Limit
		EG093A-F: Barium	7440-39-3	1	µg/L	11	11	0.00	0% - 50%
		EG093A-F: Copper	7440-50-8	1	µg/L	<1	<1	0.00	No Limit
		EG093A-F: Strontium	7440-24-6	10	µg/L	4400	4360	0.926	0% - 20%
		EG093A-F: Aluminium	7429-90-5	5	µg/L	6	6	0.00	No Limit
		EG093A-F: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-F: Zinc	7440-66-6	5	µg/L	<5	<5	0.00	No Limit
EB1617699-010	M4-D	EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Arsenic	7440-38-2	0.5	µg/L	1.6	1.7	0.00	No Limit
		EG093A-F: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Vanadium	7440-62-2	0.5	µg/L	1.7	1.8	0.00	No Limit
		EG093A-F: Barium	7440-39-3	1	µg/L	5	4	0.00	No Limit
		EG093A-F: Copper	7440-50-8	1	µg/L	<1	<1	0.00	No Limit
		EG093A-F: Strontium	7440-24-6	10	µg/L	7760	7710	0.721	0% - 20%
		EG093A-F: Aluminium	7429-90-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-F: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-F: Zinc	7440-66-6	5	µg/L	<5	<5	0.00	No Limit
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 515560)									

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 (%)*
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 515560) - continued									
EB1617699-001	M1-S	EG093B-F: Iron	7439-89-6	5	µg/L	<5	<5	0.00	No Limit
EB1617699-010	M4-D	EG093B-F: Iron	7439-89-6	5	µg/L	<5	<5	0.00	No Limit
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 515561)									
EB1617699-030	M8-D	EG093B-F: Iron	7439-89-6	5	µg/L	<5	<5	0.00	No Limit
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 515562)									
EB1617699-030	M8-D	EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Arsenic	7440-38-2	0.5	µg/L	1.4	1.2	12.6	No Limit
		EG093A-F: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Vanadium	7440-62-2	0.5	µg/L	1.9	1.8	0.00	No Limit
		EG093A-F: Barium	7440-39-3	1	µg/L	6	7	0.00	No Limit
		EG093A-F: Copper	7440-50-8	1	µg/L	1	1	0.00	No Limit
		EG093A-F: Strontium	7440-24-6	10	µg/L	6960	7040	1.15	0% - 20%
		EG093A-F: Aluminium	7429-90-5	5	µg/L	5	6	0.00	No Limit
		EG093A-F: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-F: Zinc	7440-66-6	5	µg/L	<5	<5	0.00	No Limit
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 515568)									
EB1617699-037	M25-S	EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.2	<0.2	0.00	No Limit
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 515569)									
EB1617699-057	17	EG093B-F: Iron	7439-89-6	5	µg/L	<25	<25	0.00	No Limit
EB1617699-066	M17-S	EG093B-F: Iron	7439-89-6	5	µg/L	13	<5	88.6	No Limit
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 515570)									
EB1617699-057	17	EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Lead	7439-92-1	0.2	µg/L	<1.0	<1.0	0.00	No Limit
		EG093A-F: Arsenic	7440-38-2	0.5	µg/L	<2.5	<2.5	0.00	No Limit
		EG093A-F: Chromium	7440-47-3	0.5	µg/L	<2.5	<2.5	0.00	No Limit
		EG093A-F: Nickel	7440-02-0	0.5	µg/L	<2.5	<2.5	0.00	No Limit
		EG093A-F: Vanadium	7440-62-2	0.5	µg/L	<2.5	<2.5	0.00	No Limit
		EG093A-F: Barium	7440-39-3	1	µg/L	8	6	27.0	No Limit
		EG093A-F: Strontium	7440-24-6	10	µg/L	144	141	2.02	No Limit
		EG093A-F: Aluminium	7429-90-5	5	µg/L	<25	<25	0.00	No Limit
		EG093A-F: Zinc	7440-66-6	5	µg/L	<25	<25	0.00	No Limit
EB1617699-066	M17-S	EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Arsenic	7440-38-2	0.5	µg/L	1.4	<0.5	94.1	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 (%)*
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 515570) - continued									
EB1617699-066	M17-S	EG093A-F: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Vanadium	7440-62-2	0.5	µg/L	1.8	<0.5	112	No Limit
		EG093A-F: Barium	7440-39-3	1	µg/L	4	<1	128	No Limit
		EG093A-F: Copper	7440-50-8	1	µg/L	<1	<1	0.00	No Limit
		EG093A-F: Strontium	7440-24-6	10	µg/L	7740	7760	0.232	0% - 20%
		EG093A-F: Aluminium	7429-90-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-F: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-F: Zinc	7440-66-6	5	µg/L	<5	<5	0.00	No Limit
EG093T: Total Metals in Saline Water by ORC-ICPMS (QC Lot: 515572)									
EB1617699-001	M1-S	EG093A-T: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Cobalt	7440-48-4	0.2	µg/L	0.5	0.5	0.00	No Limit
		EG093A-T: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Arsenic	7440-38-2	0.5	µg/L	0.9	0.8	0.00	No Limit
		EG093A-T: Chromium	7440-47-3	0.5	µg/L	1.2	1.0	10.0	No Limit
		EG093A-T: Nickel	7440-02-0	0.5	µg/L	1.4	1.2	11.2	No Limit
		EG093A-T: Vanadium	7440-62-2	0.5	µg/L	3.7	3.8	0.00	No Limit
		EG093A-T: Barium	7440-39-3	1	µg/L	11	11	0.00	0% - 50%
		EG093A-T: Copper	7440-50-8	1	µg/L	2	2	0.00	No Limit
		EG093A-T: Strontium	7440-24-6	10	µg/L	4300	4200	2.32	0% - 20%
		EG093A-T: Aluminium	7429-90-5	5	µg/L	801	760	5.20	0% - 20%
		EG093A-T: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-T: Zinc	7440-66-6	5	µg/L	<5	<5	0.00	No Limit
EB1617699-010	M4-D	EG093A-T: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Cobalt	7440-48-4	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Arsenic	7440-38-2	0.5	µg/L	1.7	1.7	0.00	No Limit
		EG093A-T: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-T: Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-T: Vanadium	7440-62-2	0.5	µg/L	0.9	0.8	18.1	No Limit
		EG093A-T: Barium	7440-39-3	1	µg/L	4	5	0.00	No Limit
		EG093A-T: Copper	7440-50-8	1	µg/L	<1	<1	0.00	No Limit
		EG093A-T: Strontium	7440-24-6	10	µg/L	7160	7220	0.789	0% - 20%
		EG093A-T: Aluminium	7429-90-5	5	µg/L	137	128	7.08	0% - 20%
		EG093A-T: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-T: Zinc	7440-66-6	5	µg/L	<5	<5	0.00	No Limit
EG093T: Total Metals in Saline Water by ORC-ICPMS (QC Lot: 515573)									
EB1617699-001	M1-S	EG093B-T: Iron	7439-89-6	5	µg/L	920	922	0.122	0% - 20%
EB1617699-010	M4-D	EG093B-T: Iron	7439-89-6	5	µg/L	174	174	0.00	0% - 20%
EG093T: Total Metals in Saline Water by ORC-ICPMS (QC Lot: 515574)									

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 (%)*
EG093T: Total Metals in Saline Water by ORC-ICPMS (QC Lot: 515574) - continued									
EB1617699-030	M8-D	EG093A-T: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Cobalt	7440-48-4	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Arsenic	7440-38-2	0.5	µg/L	1.6	1.2	27.2	No Limit
		EG093A-T: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-T: Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-T: Vanadium	7440-62-2	0.5	µg/L	0.7	0.7	0.00	No Limit
		EG093A-T: Barium	7440-39-3	1	µg/L	8	6	25.2	No Limit
		EG093A-T: Copper	7440-50-8	1	µg/L	1	<1	0.00	No Limit
		EG093A-T: Strontium	7440-24-6	10	µg/L	7770	6470	18.2	0% - 20%
		EG093A-T: Aluminium	7429-90-5	5	µg/L	98	87	12.3	0% - 50%
		EG093A-T: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-T: Zinc	7440-66-6	5	µg/L	<5	<5	0.00	No Limit
EG093T: Total Metals in Saline Water by ORC-ICPMS (QC Lot: 515575)									
EB1617699-030	M8-D	EG093B-T: Iron	7439-89-6	5	µg/L	135	116	15.3	0% - 20%
EG093T: Total Metals in Saline Water by ORC-ICPMS (QC Lot: 515576)									
EB1617699-037	M25-S	EG093A-T: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Cobalt	7440-48-4	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Arsenic	7440-38-2	0.5	µg/L	1.8	1.7	8.92	No Limit
		EG093A-T: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-T: Nickel	7440-02-0	0.5	µg/L	0.8	1.1	26.9	No Limit
		EG093A-T: Vanadium	7440-62-2	0.5	µg/L	1.3	1.2	9.28	No Limit
		EG093A-T: Barium	7440-39-3	1	µg/L	5	5	0.00	No Limit
		EG093A-T: Copper	7440-50-8	1	µg/L	3	4	0.00	No Limit
		EG093A-T: Strontium	7440-24-6	10	µg/L	7120	7120	0.00	0% - 20%
		EG093A-T: Aluminium	7429-90-5	5	µg/L	9	10	11.0	No Limit
		EG093A-T: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-T: Zinc	7440-66-6	5	µg/L	<5	<5	0.00	No Limit
EB1617699-046	M43-S	EG093A-T: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Cobalt	7440-48-4	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Arsenic	7440-38-2	0.5	µg/L	1.8	1.8	0.00	No Limit
		EG093A-T: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-T: Nickel	7440-02-0	0.5	µg/L	0.7	<0.5	31.8	No Limit
		EG093A-T: Vanadium	7440-62-2	0.5	µg/L	1.3	1.2	9.58	No Limit
		EG093A-T: Barium	7440-39-3	1	µg/L	6	5	0.00	No Limit
		EG093A-T: Copper	7440-50-8	1	µg/L	1	1	0.00	No Limit
		EG093A-T: Strontium	7440-24-6	10	µg/L	7040	6920	1.70	0% - 20%
		EG093A-T: Aluminium	7429-90-5	5	µg/L	29	29	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 (%)*
EG093T: Total Metals in Saline Water by ORC-ICPMS (QC Lot: 515576) - continued									
EB1617699-046	M43-S	EG093A-T: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-T: Zinc	7440-66-6	5	µg/L	<5	10	63.1	No Limit
EG093T: Total Metals in Saline Water by ORC-ICPMS (QC Lot: 515577)									
EB1617699-037	M25-S	EG093B-T: Iron	7439-89-6	5	µg/L	15	16	7.85	No Limit
EB1617699-046	M43-S	EG093B-T: Iron	7439-89-6	5	µg/L	49	50	0.00	No Limit
EG093T: Total Metals in Saline Water by ORC-ICPMS (QC Lot: 515578)									
EB1617699-057	17	EG093A-T: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Cobalt	7440-48-4	0.2	µg/L	2.1	2.1	0.00	0% - 50%
		EG093A-T: Lead	7439-92-1	0.2	µg/L	1.2	1.2	0.00	No Limit
		EG093A-T: Arsenic	7440-38-2	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-T: Chromium	7440-47-3	0.5	µg/L	3.8	3.6	5.23	No Limit
		EG093A-T: Nickel	7440-02-0	0.5	µg/L	3.6	3.8	5.92	No Limit
		EG093A-T: Vanadium	7440-62-2	0.5	µg/L	4.7	4.7	0.00	No Limit
		EG093A-T: Barium	7440-39-3	1	µg/L	18	18	0.00	0% - 50%
		EG093A-T: Copper	7440-50-8	1	µg/L	2	2	0.00	No Limit
		EG093A-T: Strontium	7440-24-6	10	µg/L	156	157	0.00	0% - 50%
		EG093A-T: Aluminium	7429-90-5	5	µg/L	2660	2700	1.65	0% - 20%
		EG093A-T: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-T: Zinc	7440-66-6	5	µg/L	6	7	0.00	No Limit
EB1617699-066	M17-S	EG093A-T: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Cobalt	7440-48-4	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Arsenic	7440-38-2	0.5	µg/L	1.9	1.8	0.00	No Limit
		EG093A-T: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-T: Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-T: Vanadium	7440-62-2	0.5	µg/L	1.0	1.0	0.00	No Limit
		EG093A-T: Barium	7440-39-3	1	µg/L	5	5	0.00	No Limit
		EG093A-T: Copper	7440-50-8	1	µg/L	5	6	0.00	No Limit
		EG093A-T: Strontium	7440-24-6	10	µg/L	7150	7140	0.131	0% - 20%
		EG093A-T: Aluminium	7429-90-5	5	µg/L	30	12	89.8	No Limit
		EG093A-T: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-T: Zinc	7440-66-6	5	µg/L	<5	<5	0.00	No Limit
EG093T: Total Metals in Saline Water by ORC-ICPMS (QC Lot: 515579)									
EB1617699-057	17	EG093B-T: Iron	7439-89-6	5	µg/L	4490	4520	0.664	0% - 20%
EB1617699-066	M17-S	EG093B-T: Iron	7439-89-6	5	µg/L	30	35	16.2	No Limit
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS (QC Lot: 520729)									
EB1617699-049	18	EG094B-F: Iron	7439-89-6	2	µg/L	20	20	0.00	0% - 50%
EB1617699-066	M17-S	EG094B-F: Iron	7439-89-6	2	µg/L	2	2	0.00	No Limit
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS (QC Lot: 520730)									

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 (%)*
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS (QC Lot: 520730) - continued									
EB1617699-049	18	EG094A-F: Cadmium	7440-43-9	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EG094A-F: Cobalt	7440-48-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EG094A-F: Lead	7439-92-1	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EG094A-F: Arsenic	7440-38-2	0.2	µg/L	0.5	0.4	0.00	No Limit
		EG094A-F: Chromium	7440-47-3	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG094A-F: Tin	7440-31-5	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG094A-F: Vanadium	7440-62-2	0.2	µg/L	2.4	2.3	4.99	0% - 50%
		EG094A-F: Barium	7440-39-3	0.5	µg/L	5.3	5.2	2.15	0% - 50%
		EG094A-F: Copper	7440-50-8	0.5	µg/L	0.7	0.7	0.00	No Limit
		EG094A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG094A-F: Strontium	7440-24-6	1	µg/L	105	106	1.16	0% - 20%
		EG094A-F: Zinc	7440-66-6	1	µg/L	<1	<1	0.00	No Limit
		EG094A-F: Aluminium	7429-90-5	5	µg/L	16	16	0.00	No Limit
EB1617699-066	M17-S	EG094A-F: Cadmium	7440-43-9	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EG094A-F: Cobalt	7440-48-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EG094A-F: Lead	7439-92-1	0.1	µg/L	0.1	<0.1	0.00	No Limit
		EG094A-F: Arsenic	7440-38-2	0.2	µg/L	2.2	2.1	0.00	0% - 50%
		EG094A-F: Chromium	7440-47-3	0.2	µg/L	<0.2	0.2	0.00	No Limit
		EG094A-F: Tin	7440-31-5	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG094A-F: Vanadium	7440-62-2	0.2	µg/L	2.5	2.6	4.31	0% - 50%
		EG094A-F: Barium	7440-39-3	0.5	µg/L	5.5	5.5	0.00	0% - 50%
		EG094A-F: Copper	7440-50-8	0.5	µg/L	1.2	1.6	33.8	No Limit
		EG094A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG094A-F: Strontium	7440-24-6	1	µg/L	8040	8040	0.00	0% - 20%
		EG094A-F: Zinc	7440-66-6	1	µg/L	2	2	0.00	No Limit
		EG094A-F: Aluminium	7429-90-5	5	µg/L	<5	45	160	No Limit
EG094T: Total metals in Fresh water by ORC-ICPMS (QC Lot: 520736)									
EB1617699-049	18	EG094B-T: Iron	7439-89-6	2	µg/L	4270	4380	2.63	0% - 20%
EB1617699-066	M17-S	EG094B-T: Iron	7439-89-6	2	µg/L	37	35	6.31	0% - 50%
EG094T: Total metals in Fresh water by ORC-ICPMS (QC Lot: 520737)									
EB1617699-049	18	EG094A-T: Cadmium	7440-43-9	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EG094A-T: Cobalt	7440-48-4	0.1	µg/L	1.8	1.9	0.00	0% - 50%
		EG094A-T: Lead	7439-92-1	0.1	µg/L	1.0	1.0	0.00	No Limit
		EG094A-T: Arsenic	7440-38-2	0.2	µg/L	1.1	1.1	0.00	No Limit
		EG094A-T: Chromium	7440-47-3	0.2	µg/L	4.5	4.8	7.35	0% - 20%
		EG094A-T: Tin	7440-31-5	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG094A-T: Vanadium	7440-62-2	0.2	µg/L	11.0	11.8	6.40	0% - 20%
		EG094A-T: Barium	7440-39-3	0.5	µg/L	16.5	17.3	5.10	0% - 20%
		EG094A-T: Copper	7440-50-8	0.5	µg/L	5.1	5.2	2.41	0% - 50%
		EG094A-T: Nickel	7440-02-0	0.5	µg/L	4.0	4.2	4.64	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 (%)*
EG094T: Total metals in Fresh water by ORC-ICPMS (QC Lot: 520737) - continued									
EB1617699-049	18	EG094A-T: Strontium	7440-24-6	1	µg/L	123	122	0.00	0% - 20%
		EG094A-T: Zinc	7440-66-6	1	µg/L	9	9	0.00	No Limit
		EG094A-T: Aluminium	7429-90-5	5	µg/L	2990	3150	5.09	0% - 20%
EB1617699-066	M17-S	EG094A-T: Cadmium	7440-43-9	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EG094A-T: Cobalt	7440-48-4	0.1	µg/L	0.1	0.1	0.00	No Limit
		EG094A-T: Lead	7439-92-1	0.1	µg/L	<0.1	<0.1	0.00	No Limit
		EG094A-T: Arsenic	7440-38-2	0.2	µg/L	2.2	2.2	0.00	0% - 50%
		EG094A-T: Chromium	7440-47-3	0.2	µg/L	0.5	0.5	0.00	No Limit
		EG094A-T: Tin	7440-31-5	0.2	µg/L	0.3	0.2	0.00	No Limit
		EG094A-T: Vanadium	7440-62-2	0.2	µg/L	2.8	2.8	0.00	0% - 50%
		EG094A-T: Barium	7440-39-3	0.5	µg/L	5.5	5.8	4.61	0% - 50%
		EG094A-T: Copper	7440-50-8	0.5	µg/L	5.7	6.1	6.42	0% - 50%
		EG094A-T: Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG094A-T: Strontium	7440-24-6	1	µg/L	8300	8490	2.24	0% - 20%
		EG094A-T: Zinc	7440-66-6	1	µg/L	5	5	0.00	No Limit
		EG094A-T: Aluminium	7429-90-5	5	µg/L	22	21	0.00	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 515623)									
EB1617699-061	M13-S	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.09	0.06	30.9	No Limit
EB1617699-071	M22-D	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.10	0.09	0.00	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 515625)									
EB1617699-001	M1-S	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.03	<0.01	110	No Limit
EB1617699-011	M5-S	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.09	0.08	16.4	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 515627)									
EB1617699-021	DUP3	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.04	0.03	0.00	No Limit
EB1617699-031	M9-S	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.03	0.02	76.1	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 515629)									
EB1617699-041	M31-M	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.15	0.14	6.90	0% - 50%
EB1617699-051	21	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.04	0.03	34.2	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 515172)									
EB1617699-001	M1-S	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EB1617699-011	M5-S	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 515173)									
EB1617699-021	DUP3	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EB1617699-031	M9-S	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 515179)									
EB1617699-034	M10-S	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EB1617699-044	M37-M	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 515181)									
EB1617699-054	23-b	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 (%)*
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 515181) - continued									
EB1617699-064	M19-S	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 515624)									
EB1617699-061	M13-S	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EB1617699-071	M22-D	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 515626)									
EB1617699-001	M1-S	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EB1617699-011	M5-S	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 515628)									
EB1617699-021	DUP3	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.04	0.04	0.00	No Limit
EB1617699-031	M9-S	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 515630)									
EB1617699-041	M31-M	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EB1617699-051	21	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.03	0.03	0.00	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 516874)									
EB1617699-001	M1-S	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.5	<0.5	0.00	No Limit
EB1617699-011	M5-S	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.5	<0.5	0.00	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 516876)									
EB1617699-021	DUP3	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.5	<0.5	0.00	No Limit
EB1617699-031	M9-S	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.5	<0.5	0.00	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 516878)									
EB1617699-039	M25-D	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.5	<0.5	0.00	No Limit
EB1617699-049	18	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.5	<0.5	0.00	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 516880)									
EB1617699-059	29	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.5	<0.5	0.00	No Limit
EB1617699-069	M21-D	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.5	<0.5	0.00	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 516873)									
EB1617699-001	M1-S	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.06	<0.05	24.6	No Limit
EB1617699-011	M5-S	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.06	0.05	0.00	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 516875)									
EB1617699-021	DUP3	EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.05	<0.05	0.00	No Limit
EB1617699-031	M9-S	EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.05	<0.05	0.00	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 516877)									
EB1617699-039	M25-D	EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.05	<0.05	0.00	No Limit
EB1617699-049	18	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.05	0.06	19.2	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 516879)									
EB1617699-059	29	EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.05	<0.05	0.00	No Limit
EB1617699-069	M21-D	EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.05	<0.05	0.00	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 515171)									

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 (%)*
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 515171) - continued									
EB1617699-001	M1-S	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EB1617699-011	M5-S	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 515174)									
EB1617699-021	DUP3	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.02	0.02	0.00	No Limit
EB1617699-031	M9-S	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.01	0.01	0.00	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 515180)									
EB1617699-034	M10-S	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.01	0.00	No Limit
EB1617699-044	M37-M	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 515182)									
EB1617699-054	23-b	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	0.03	0.03	0.00	No Limit
EB1617699-064	M19-S	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 515020)									
EB1617699-001	M1-S	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EB1617699-011	M5-S	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 515025)									
EB1617699-022	TRIP1	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EB1617699-032	M9-M	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 515026)									
EB1617699-042	M31-D	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EB1617699-055	24-b	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 515027)									
EB1617699-065	M19-D	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 515038)									
EB1617699-049	18	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 515020)									
EB1617699-001	M1-S	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EB1617699-011	M5-S	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 515025)									
EB1617699-022	TRIP1	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EB1617699-032	M9-M	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 515026)									
EB1617699-042	M31-D	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EB1617699-055	24-b	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 515027)									
EB1617699-065	M19-D	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 515038)									
EB1617699-049	18	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 (%)*
EP080: BTEXN (QC Lot: 515020)									
EB1617699-001	M1-S	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
EB1617699-011	M5-S	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
EP080: BTEXN (QC Lot: 515025)									
EB1617699-022	TRIP1	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
EB1617699-032	M9-M	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
EP080: BTEXN (QC Lot: 515026)									
EB1617699-042	M31-D	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
EB1617699-055	24-b	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 (%)*
EP080: BTEXN (QC Lot: 515026) - continued									
EB1617699-055	24-b	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
EP080: BTEXN (QC Lot: 515027)									
EB1617699-065	M19-D	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
EP080: BTEXN (QC Lot: 515038)									
EB1617699-049	18	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

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 Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 515250)								
EA025: Suspended Solids (SS)	----	1	mg/L	<1	150 mg/L	101	84	120
				<1	1000 mg/L	96.4	84	120
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 515251)								
EA025: Suspended Solids (SS)	----	1	mg/L	<1	150 mg/L	94.1	84	120
				<1	1000 mg/L	96.0	84	120
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 515254)								
EA025: Suspended Solids (SS)	----	1	mg/L	<1	150 mg/L	102	84	120
				<1	1000 mg/L	96.4	84	120
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 515255)								
EA025: Suspended Solids (SS)	----	1	mg/L	<1	150 mg/L	102	84	120
				<1	1000 mg/L	99.3	84	120
EG035F: Dissolved Mercury by FIMS (QCLot: 515772)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	91.1	84	118
EG035F: Dissolved Mercury by FIMS (QCLot: 515773)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	90.8	84	118
EG035F: Dissolved Mercury by FIMS (QCLot: 515776)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	86.5	84	118
EG035F: Dissolved Mercury by FIMS (QCLot: 515777)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	89.8	84	118
EG035T: Total Recoverable Mercury by FIMS (QCLot: 515823)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	90.7	80	100
EG035T: Total Recoverable Mercury by FIMS (QCLot: 515824)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	91.4	80	100
EG035T: Total Recoverable Mercury by FIMS (QCLot: 515825)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	91.8	80	100
EG035T: Total Recoverable Mercury by FIMS (QCLot: 515826)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	91.2	80	100
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 515559)								
EG093A-F: Aluminium	7429-90-5	5	µg/L	<5	50 µg/L	88.5	85	118
EG093A-F: Arsenic	7440-38-2	0.5	µg/L	<0.5	10 µg/L	98.5	87	116
EG093A-F: Barium	7440-39-3	1	µg/L	<1	50 µg/L	95.2	87	114
EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.2	10 µg/L	100	88	114
EG093A-F: Chromium	7440-47-3	0.5	µg/L	<0.5	10 µg/L	99.4	83	115

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 515559) - continued								
EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.2	10 µg/L	99.3	86	116
EG093A-F: Copper	7440-50-8	1	µg/L	<1	20 µg/L	97.9	81	117
EG093A-F: Lead	7439-92-1	0.2	µg/L	<0.2	10 µg/L	95.4	80	117
EG093A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	10 µg/L	95.8	87	117
EG093A-F: Strontium	7440-24-6	10	µg/L	<10	50 µg/L	96.9	85	117
EG093A-F: Tin	7440-31-5	5	µg/L	<5	10 µg/L	89.0	82	118
EG093A-F: Vanadium	7440-62-2	0.5	µg/L	<0.5	10 µg/L	113	89	117
EG093A-F: Zinc	7440-66-6	5	µg/L	<5	20 µg/L	92.6	81	120
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 515560)								
EG093B-F: Iron	7439-89-6	5	µg/L	<5	50 µg/L	89.1	78	123
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 515561)								
EG093B-F: Iron	7439-89-6	5	µg/L	<5	50 µg/L	98.6	78	123
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 515562)								
EG093A-F: Aluminium	7429-90-5	5	µg/L	<5	50 µg/L	95.2	85	118
EG093A-F: Arsenic	7440-38-2	0.5	µg/L	<0.5	10 µg/L	97.7	87	116
EG093A-F: Barium	7440-39-3	1	µg/L	<1	50 µg/L	99.0	87	114
EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.2	10 µg/L	98.8	88	114
EG093A-F: Chromium	7440-47-3	0.5	µg/L	<0.5	10 µg/L	106	83	115
EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.2	10 µg/L	104	86	116
EG093A-F: Copper	7440-50-8	1	µg/L	<1	20 µg/L	103	81	117
EG093A-F: Lead	7439-92-1	0.2	µg/L	<0.2	10 µg/L	98.6	80	117
EG093A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	10 µg/L	100	87	117
EG093A-F: Strontium	7440-24-6	10	µg/L	<10	50 µg/L	102	85	117
EG093A-F: Tin	7440-31-5	5	µg/L	<5	10 µg/L	87.2	82	118
EG093A-F: Vanadium	7440-62-2	0.5	µg/L	<0.5	10 µg/L	97.8	89	117
EG093A-F: Zinc	7440-66-6	5	µg/L	<5	20 µg/L	104	81	120
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 515567)								
EG093B-F: Iron	7439-89-6	5	µg/L	<5	50 µg/L	99.6	78	123
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 515568)								
EG093A-F: Aluminium	7429-90-5	5	µg/L	<5	50 µg/L	103	85	118
EG093A-F: Arsenic	7440-38-2	0.5	µg/L	<0.5	10 µg/L	100	87	116
EG093A-F: Barium	7440-39-3	1	µg/L	<1	50 µg/L	104	87	114
EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.2	10 µg/L	102	88	114
EG093A-F: Chromium	7440-47-3	0.5	µg/L	<0.5	10 µg/L	102	83	115
EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.2	10 µg/L	102	86	116
EG093A-F: Copper	7440-50-8	1	µg/L	<1	20 µg/L	106	81	117
EG093A-F: Lead	7439-92-1	0.2	µg/L	<0.2	10 µg/L	110	80	117
EG093A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	10 µg/L	107	87	117

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 515568) - continued								
EG093A-F: Strontium	7440-24-6	10	µg/L	<10	50 µg/L	104	85	117
EG093A-F: Tin	7440-31-5	5	µg/L	<5	10 µg/L	97.8	82	118
EG093A-F: Vanadium	7440-62-2	0.5	µg/L	<0.5	10 µg/L	96.7	89	117
EG093A-F: Zinc	7440-66-6	5	µg/L	<5	20 µg/L	100	81	120
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 515569)								
EG093B-F: Iron	7439-89-6	5	µg/L	<5	50 µg/L	100	78	123
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 515570)								
EG093A-F: Aluminium	7429-90-5	5	µg/L	<5	50 µg/L	98.0	85	118
EG093A-F: Arsenic	7440-38-2	0.5	µg/L	<0.5	10 µg/L	98.7	87	116
EG093A-F: Barium	7440-39-3	1	µg/L	<1	50 µg/L	104	87	114
EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.2	10 µg/L	100	88	114
EG093A-F: Chromium	7440-47-3	0.5	µg/L	<0.5	10 µg/L	99.6	83	115
EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.2	10 µg/L	103	86	116
EG093A-F: Lead	7439-92-1	0.2	µg/L	<0.2	10 µg/L	109	80	117
EG093A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	10 µg/L	99.0	87	117
EG093A-F: Strontium	7440-24-6	10	µg/L	<10	50 µg/L	102	85	117
EG093A-F: Vanadium	7440-62-2	0.5	µg/L	<0.5	10 µg/L	95.8	89	117
EG093A-F: Zinc	7440-66-6	5	µg/L	<5	20 µg/L	98.1	81	120
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 515572)								
EG093A-T: Aluminium	7429-90-5	5	µg/L	<5	50 µg/L	95.8	85	120
EG093A-T: Arsenic	7440-38-2	0.5	µg/L	<0.5	10 µg/L	104	86	117
EG093A-T: Barium	7440-39-3	1	µg/L	<1	50 µg/L	93.9	84	118
EG093A-T: Cadmium	7440-43-9	0.2	µg/L	<0.2	10 µg/L	103	84	115
EG093A-T: Chromium	7440-47-3	0.5	µg/L	<0.5	10 µg/L	107	84	120
EG093A-T: Cobalt	7440-48-4	0.2	µg/L	<0.2	10 µg/L	106	85	116
EG093A-T: Copper	7440-50-8	1	µg/L	<1	20 µg/L	101	84	119
EG093A-T: Lead	7439-92-1	0.2	µg/L	<0.2	10 µg/L	102	84	120
EG093A-T: Nickel	7440-02-0	0.5	µg/L	<0.5	10 µg/L	97.7	80	120
EG093A-T: Strontium	7440-24-6	10	µg/L	<10	50 µg/L	97.0	83	117
EG093A-T: Tin	7440-31-5	5	µg/L	<5	10 µg/L	90.3	83	114
EG093A-T: Vanadium	7440-62-2	0.5	µg/L	<0.5	10 µg/L	102	84	120
EG093A-T: Zinc	7440-66-6	5	µg/L	<5	20 µg/L	101	81	124
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 515573)								
EG093B-T: Iron	7439-89-6	5	µg/L	<5	50 µg/L	98.8	80	128
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 515574)								
EG093A-T: Aluminium	7429-90-5	5	µg/L	<5	50 µg/L	98.6	85	120
EG093A-T: Arsenic	7440-38-2	0.5	µg/L	<0.5	10 µg/L	111	86	117
EG093A-T: Barium	7440-39-3	1	µg/L	<1	50 µg/L	96.2	84	118

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 515574) - continued								
EG093A-T: Cadmium	7440-43-9	0.2	µg/L	<0.2	10 µg/L	98.7	84	115
EG093A-T: Chromium	7440-47-3	0.5	µg/L	<0.5	10 µg/L	104	84	120
EG093A-T: Cobalt	7440-48-4	0.2	µg/L	<0.2	10 µg/L	112	85	116
EG093A-T: Copper	7440-50-8	1	µg/L	<1	20 µg/L	106	84	119
EG093A-T: Lead	7439-92-1	0.2	µg/L	<0.2	10 µg/L	99.6	84	120
EG093A-T: Nickel	7440-02-0	0.5	µg/L	<0.5	10 µg/L	110	80	120
EG093A-T: Strontium	7440-24-6	10	µg/L	<10	50 µg/L	97.5	83	117
EG093A-T: Tin	7440-31-5	5	µg/L	<5	10 µg/L	93.0	83	114
EG093A-T: Vanadium	7440-62-2	0.5	µg/L	<0.5	10 µg/L	96.1	84	120
EG093A-T: Zinc	7440-66-6	5	µg/L	<5	20 µg/L	97.6	81	124
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 515575)								
EG093B-T: Iron	7439-89-6	5	µg/L	<5	50 µg/L	118	80	128
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 515576)								
EG093A-T: Aluminium	7429-90-5	5	µg/L	<5	50 µg/L	98.9	85	120
EG093A-T: Arsenic	7440-38-2	0.5	µg/L	<0.5	10 µg/L	107	86	117
EG093A-T: Barium	7440-39-3	1	µg/L	<1	50 µg/L	100	84	118
EG093A-T: Cadmium	7440-43-9	0.2	µg/L	<0.2	10 µg/L	106	84	115
EG093A-T: Chromium	7440-47-3	0.5	µg/L	<0.5	10 µg/L	104	84	120
EG093A-T: Cobalt	7440-48-4	0.2	µg/L	<0.2	10 µg/L	108	85	116
EG093A-T: Copper	7440-50-8	1	µg/L	<1	20 µg/L	108	84	119
EG093A-T: Lead	7439-92-1	0.2	µg/L	<0.2	10 µg/L	101	84	120
EG093A-T: Nickel	7440-02-0	0.5	µg/L	<0.5	10 µg/L	110	80	120
EG093A-T: Strontium	7440-24-6	10	µg/L	<10	50 µg/L	93.8	83	117
EG093A-T: Tin	7440-31-5	5	µg/L	<5	10 µg/L	96.7	83	114
EG093A-T: Vanadium	7440-62-2	0.5	µg/L	<0.5	10 µg/L	101	84	120
EG093A-T: Zinc	7440-66-6	5	µg/L	<5	20 µg/L	94.2	81	124
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 515577)								
EG093B-T: Iron	7439-89-6	5	µg/L	<5	50 µg/L	107	80	128
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 515578)								
EG093A-T: Aluminium	7429-90-5	5	µg/L	<5	50 µg/L	97.2	85	120
EG093A-T: Arsenic	7440-38-2	0.5	µg/L	<0.5	10 µg/L	110	86	117
EG093A-T: Barium	7440-39-3	1	µg/L	<1	50 µg/L	101	84	118
EG093A-T: Cadmium	7440-43-9	0.2	µg/L	<0.2	10 µg/L	105	84	115
EG093A-T: Chromium	7440-47-3	0.5	µg/L	<0.5	10 µg/L	105	84	120
EG093A-T: Cobalt	7440-48-4	0.2	µg/L	<0.2	10 µg/L	113	85	116
EG093A-T: Copper	7440-50-8	1	µg/L	<1	20 µg/L	106	84	119
EG093A-T: Lead	7439-92-1	0.2	µg/L	<0.2	10 µg/L	103	84	120
EG093A-T: Nickel	7440-02-0	0.5	µg/L	<0.5	10 µg/L	109	80	120

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 515578) - continued								
EG093A-T: Strontium	7440-24-6	10	µg/L	<10	50 µg/L	93.7	83	117
EG093A-T: Tin	7440-31-5	5	µg/L	<5	10 µg/L	93.4	83	114
EG093A-T: Vanadium	7440-62-2	0.5	µg/L	<0.5	10 µg/L	116	84	120
EG093A-T: Zinc	7440-66-6	5	µg/L	<5	20 µg/L	98.6	81	124
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 515579)								
EG093B-T: Iron	7439-89-6	5	µg/L	<5	50 µg/L	112	80	128
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS (QCLot: 518008)								
EG094B-F: Iron	7439-89-6	2	µg/L	<2	50 µg/L	107	80	120
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS (QCLot: 518009)								
EG094A-F: Aluminium	7429-90-5	5	µg/L	<5	50 µg/L	102	80	120
EG094A-F: Arsenic	7440-38-2	0.2	µg/L	<0.2	10 µg/L	99.6	80	120
EG094A-F: Barium	7440-39-3	0.5	µg/L	<0.5	50 µg/L	110	80	120
EG094A-F: Cadmium	7440-43-9	0.05	µg/L	<0.05	10 µg/L	107	80	120
EG094A-F: Chromium	7440-47-3	0.2	µg/L	<0.2	10 µg/L	99.6	80	120
EG094A-F: Cobalt	7440-48-4	0.1	µg/L	<0.1	10 µg/L	109	80	120
EG094A-F: Copper	7440-50-8	0.5	µg/L	<0.5	20 µg/L	107	80	120
EG094A-F: Lead	7439-92-1	0.1	µg/L	<0.1	10 µg/L	100	80	120
EG094A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	10 µg/L	107	80	120
EG094A-F: Strontium	7440-24-6	1	µg/L	<1	50 µg/L	109	80	120
EG094A-F: Tin	7440-31-5	0.2	µg/L	<0.2	10 µg/L	88.4	80	120
EG094A-F: Vanadium	7440-62-2	0.2	µg/L	<0.2	10 µg/L	111	80	120
EG094A-F: Zinc	7440-66-6	1	µg/L	<1	20 µg/L	104	80	120
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS (QCLot: 520729)								
EG094B-F: Iron	7439-89-6	2	µg/L	<2	50 µg/L	113	80	120
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS (QCLot: 520730)								
EG094A-F: Aluminium	7429-90-5	5	µg/L	<5	50 µg/L	114	80	120
EG094A-F: Arsenic	7440-38-2	0.2	µg/L	<0.2	10 µg/L	112	80	120
EG094A-F: Barium	7440-39-3	0.5	µg/L	<0.5	50 µg/L	103	80	120
EG094A-F: Cadmium	7440-43-9	0.05	µg/L	<0.05	10 µg/L	111	80	120
EG094A-F: Chromium	7440-47-3	0.2	µg/L	<0.2	10 µg/L	114	80	120
EG094A-F: Cobalt	7440-48-4	0.1	µg/L	<0.1	10 µg/L	115	80	120
EG094A-F: Copper	7440-50-8	0.5	µg/L	<0.5	20 µg/L	116	80	120
EG094A-F: Lead	7439-92-1	0.1	µg/L	<0.1	10 µg/L	109	80	120
EG094A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	10 µg/L	114	80	120
EG094A-F: Strontium	7440-24-6	1	µg/L	<1	50 µg/L	108	80	120
EG094A-F: Tin	7440-31-5	0.2	µg/L	<0.2	10 µg/L	120	80	120
EG094A-F: Vanadium	7440-62-2	0.2	µg/L	<0.2	10 µg/L	120	80	120
EG094A-F: Zinc	7440-66-6	1	µg/L	<1	20 µg/L	110	80	120

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EG094T: Total metals in Fresh water by ORC-ICPMS (QCLot: 517990)								
EG094B-T: Iron	7439-89-6	2	µg/L	<2	50 µg/L	108	80	120
EG094T: Total metals in Fresh water by ORC-ICPMS (QCLot: 517991)								
EG094A-T: Aluminium	7429-90-5	5	µg/L	<5	50 µg/L	104	80	120
EG094A-T: Arsenic	7440-38-2	0.2	µg/L	<0.2	10 µg/L	102	80	120
EG094A-T: Barium	7440-39-3	0.5	µg/L	<0.5	50 µg/L	105	80	120
EG094A-T: Cadmium	7440-43-9	0.05	µg/L	<0.05	10 µg/L	100	80	120
EG094A-T: Chromium	7440-47-3	0.2	µg/L	<0.2	10 µg/L	102	80	120
EG094A-T: Cobalt	7440-48-4	0.1	µg/L	<0.1	10 µg/L	110	80	120
EG094A-T: Copper	7440-50-8	0.5	µg/L	<0.5	20 µg/L	109	80	120
EG094A-T: Lead	7439-92-1	0.1	µg/L	<0.1	10 µg/L	99.8	80	120
EG094A-T: Nickel	7440-02-0	0.5	µg/L	<0.5	10 µg/L	108	80	120
EG094A-T: Strontium	7440-24-6	1	µg/L	<1	50 µg/L	111	80	120
EG094A-T: Tin	7440-31-5	0.2	µg/L	<0.2	10 µg/L	110	80	120
EG094A-T: Vanadium	7440-62-2	0.2	µg/L	<0.2	10 µg/L	115	80	120
EG094A-T: Zinc	7440-66-6	1	µg/L	<1	20 µg/L	98.9	80	120
EG094T: Total metals in Fresh water by ORC-ICPMS (QCLot: 520736)								
EG094B-T: Iron	7439-89-6	2	µg/L	<2	50 µg/L	107	80	120
EG094T: Total metals in Fresh water by ORC-ICPMS (QCLot: 520737)								
EG094A-T: Aluminium	7429-90-5	5	µg/L	<5	50 µg/L	106	80	120
EG094A-T: Arsenic	7440-38-2	0.2	µg/L	<0.2	10 µg/L	114	80	120
EG094A-T: Barium	7440-39-3	0.5	µg/L	<0.5	50 µg/L	108	80	120
EG094A-T: Cadmium	7440-43-9	0.05	µg/L	<0.05	10 µg/L	110	80	120
EG094A-T: Chromium	7440-47-3	0.2	µg/L	<0.2	10 µg/L	118	80	120
EG094A-T: Cobalt	7440-48-4	0.1	µg/L	<0.1	10 µg/L	118	80	120
EG094A-T: Copper	7440-50-8	0.5	µg/L	<0.5	20 µg/L	110	80	120
EG094A-T: Lead	7439-92-1	0.1	µg/L	<0.1	10 µg/L	109	80	120
EG094A-T: Nickel	7440-02-0	0.5	µg/L	<0.5	10 µg/L	119	80	120
EG094A-T: Strontium	7440-24-6	1	µg/L	<1	50 µg/L	116	80	120
EG094A-T: Tin	7440-31-5	0.2	µg/L	<0.2	10 µg/L	117	80	120
EG094A-T: Vanadium	7440-62-2	0.2	µg/L	<0.2	10 µg/L	119	80	120
EG094A-T: Zinc	7440-66-6	1	µg/L	<1	20 µg/L	108	80	120
EK055G: Ammonia as N by Discrete Analyser (QCLot: 515623)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	91.3	86	112
EK055G: Ammonia as N by Discrete Analyser (QCLot: 515625)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	95.4	86	112
EK055G: Ammonia as N by Discrete Analyser (QCLot: 515627)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	95.8	86	112
EK055G: Ammonia as N by Discrete Analyser (QCLot: 515629)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EK055G: Ammonia as N by Discrete Analyser (QCLot: 515629) - continued								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	95.7	86	112
EK057G: Nitrite as N by Discrete Analyser (QCLot: 515172)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	102	90	110
EK057G: Nitrite as N by Discrete Analyser (QCLot: 515173)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	101	90	110
EK057G: Nitrite as N by Discrete Analyser (QCLot: 515179)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	97.3	90	110
EK057G: Nitrite as N by Discrete Analyser (QCLot: 515181)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	97.8	90	110
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 515624)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	98.5	89	115
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 515626)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	97.3	89	115
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 515628)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	99.8	89	115
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 515630)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	99.2	89	115
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 516874)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	88.4	70	111
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 516876)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	90.0	70	111
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 516878)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	88.8	70	111
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 516880)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	85.2	70	111
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 516873)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	102	77	109
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 516875)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	106	77	109
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 516877)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	104	77	109
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 516879)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	104	77	109
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 515171)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	103	88	115
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 515174)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 515174) - continued								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	103	88	115
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 515180)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	105	88	115
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 515182)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	106	88	115
EP008: Chlorophyll (QCLot: 515734)								
EP008: Chlorophyll a	----	1	mg/m³	<1	20 mg/m³	113	85	123
EP008: Chlorophyll (QCLot: 515735)								
EP008: Chlorophyll a	----	1	mg/m³	<1	20 mg/m³	110	85	123
EP008: Chlorophyll (QCLot: 515736)								
EP008: Chlorophyll a	----	1	mg/m³	<1	20 mg/m³	107	85	123
EP008: Chlorophyll (QCLot: 515737)								
EP008: Chlorophyll a	----	1	mg/m³	<1	20 mg/m³	106	85	123
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 515050)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	10 µg/L	# 107	47	101
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	10 µg/L	96.2	46	109
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	10 µg/L	# 106	50	104
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	10 µg/L	# 115	50	114
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	10 µg/L	88.3	49	114
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	10 µg/L	73.5	48	113
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	10 µg/L	77.0	48	120
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	10 µg/L	76.8	48	119
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	10 µg/L	63.9	48	125
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	10 µg/L	73.8	45	119
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	10 µg/L	100	43	130
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	10 µg/L	106	46	130
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	10 µg/L	85.8	49	125
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	10 µg/L	97.0	40	132
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	10 µg/L	98.5	42	140
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	10 µg/L	101	39	136
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 515274)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	10 µg/L	79.3	47	101
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	10 µg/L	82.6	46	109
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	10 µg/L	81.7	50	104
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	10 µg/L	81.9	50	114
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	10 µg/L	82.5	49	114
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	10 µg/L	81.1	48	113

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 515274) - continued								
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	10 µg/L	79.1	48	120
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	10 µg/L	78.8	48	119
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	10 µg/L	85.4	48	125
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	10 µg/L	97.1	45	119
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	10 µg/L	91.1	43	130
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	10 µg/L	73.7	46	130
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	10 µg/L	82.7	49	125
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	10 µg/L	88.0	40	132
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	10 µg/L	90.5	42	140
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	10 µg/L	83.9	39	136
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 515276)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	10 µg/L	89.6	47	101
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	10 µg/L	# 116	46	109
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	10 µg/L	92.1	50	104
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	10 µg/L	102	50	114
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	10 µg/L	93.4	49	114
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	10 µg/L	92.8	48	113
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	10 µg/L	92.9	48	120
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	10 µg/L	94.3	48	119
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	10 µg/L	112	48	125
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	10 µg/L	# 124	45	119
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	10 µg/L	88.8	43	130
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	10 µg/L	96.9	46	130
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	10 µg/L	92.3	49	125
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	10 µg/L	95.3	40	132
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	10 µg/L	97.7	42	140
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	10 µg/L	91.5	39	136
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 515282)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	10 µg/L	# 106	47	101
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	10 µg/L	98.8	46	109
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	10 µg/L	103	50	104
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	10 µg/L	# 116	50	114
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	10 µg/L	91.5	49	114
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	10 µg/L	113	48	113
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	10 µg/L	115	48	120
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	10 µg/L	113	48	119
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	10 µg/L	101	48	125

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 515282) - continued								
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	10 µg/L	107	45	119
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	10 µg/L	92.0	43	130
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	10 µg/L	119	46	130
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	10 µg/L	89.4	49	125
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	10 µg/L	98.4	40	132
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	10 µg/L	100	42	140
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	10 µg/L	102	39	136
EP080/071: Total Petroleum Hydrocarbons (QCLot: 515020)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	160 µg/L	103	76	122
EP080/071: Total Petroleum Hydrocarbons (QCLot: 515025)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	160 µg/L	80.0	76	122
EP080/071: Total Petroleum Hydrocarbons (QCLot: 515026)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	160 µg/L	90.7	76	122
EP080/071: Total Petroleum Hydrocarbons (QCLot: 515027)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	160 µg/L	91.4	76	122
EP080/071: Total Petroleum Hydrocarbons (QCLot: 515038)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	160 µg/L	92.8	76	122
EP080/071: Total Petroleum Hydrocarbons (QCLot: 515051)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	1211 µg/L	81.0	38	114
EP071: C15 - C28 Fraction	----	100	µg/L	<100	2103 µg/L	77.4	50	132
EP071: C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 515273)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	1211 µg/L	113	38	114
EP071: C15 - C28 Fraction	----	100	µg/L	<100	2103 µg/L	112	50	132
EP071: C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 515275)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	1211 µg/L	110	38	114
EP071: C15 - C28 Fraction	----	100	µg/L	<100	2103 µg/L	109	50	132
EP071: C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 515277)								
EP071-SV: C10 - C14 Fraction	----	50	µg/L	<50	1211 µg/L	110	38	114
EP071-SV: C15 - C28 Fraction	----	100	µg/L	<100	2103 µg/L	109	50	132
EP071-SV: C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 515281)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	1211 µg/L	80.4	38	114
EP071: C15 - C28 Fraction	----	100	µg/L	<100	2103 µg/L	90.0	50	132

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 515281) - continued								
EP071: C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 515020)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	185 µg/L	99.9	75	123
EP080: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 515025)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	185 µg/L	77.9	75	123
EP080: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 515026)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	185 µg/L	87.8	75	123
EP080: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 515027)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	185 µg/L	91.0	75	123
EP080: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 515038)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	185 µg/L	91.2	75	123
EP080: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 515051)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	1696 µg/L	77.8	43	119
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	1496 µg/L	80.1	49	134
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 515273)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	1696 µg/L	110	43	119
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	1496 µg/L	116	49	134
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 515275)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	1696 µg/L	107	43	119
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	1496 µg/L	112	49	134
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 515277)								
EP071-SV: >C10 - C16 Fraction	----	100	µg/L	<100	1696 µg/L	107	43	119
EP071-SV: >C16 - C34 Fraction	----	100	µg/L	<100	1496 µg/L	112	49	134
EP071-SV: >C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 515281)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	1696 µg/L	83.0	43	119
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	1496 µg/L	91.4	49	134
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
EP080: BTEXN (QCLot: 515020)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	93.5	77	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	103	78	122
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	106	78	119
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	108	77	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	110	76	121
EP080: Total Xylenes	1330-20-7	2	µg/L	<2	----	----	----	----
EP080: Sum of BTEX	----	1	µg/L	<1	----	----	----	----
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	107	75	120
EP080: BTEXN (QCLot: 515025)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	83.8	77	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	91.6	78	122
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	90.2	78	119
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	89.3	77	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	91.1	76	121
EP080: Total Xylenes	1330-20-7	2	µg/L	<2	----	----	----	----
EP080: Sum of BTEX	----	1	µg/L	<1	----	----	----	----
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	100	75	120
EP080: BTEXN (QCLot: 515026)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	92.4	77	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	92.1	78	122
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	100	78	119
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	101	77	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	102	76	121
EP080: Total Xylenes	1330-20-7	2	µg/L	<2	----	----	----	----
EP080: Sum of BTEX	----	1	µg/L	<1	----	----	----	----
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	100	75	120
EP080: BTEXN (QCLot: 515027)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	88.5	77	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	89.4	78	122
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	96.4	78	119

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
					Spike	Spike Recovery (%)	Recovery Limits (%)
				Result	Concentration	LCS	Low	High
EP080: BTEXN (QCLot: 515027) - continued								
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	97.8	77	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	100	76	121
EP080: Total Xylenes	1330-20-7	2	µg/L	<2	----	----	----	----
EP080: Sum of BTEX	----	1	µg/L	<1	----	----	----	----
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	110	75	120
EP080: BTEXN (QCLot: 515038)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	86.7	77	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	92.8	78	122
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	99.5	78	119
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	103	77	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	102	76	121
EP080: Total Xylenes	1330-20-7	2	µg/L	<2	----	----	----	----
EP080: Sum of BTEX	----	1	µg/L	<1	----	----	----	----
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	103	75	120

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
EG035F: Dissolved Mercury by FIMS (QCLot: 515772)							
EB1617699-002	M1-D	EG035F: Mercury	7439-97-6	0.01 mg/L	77.9	70	130
EG035F: Dissolved Mercury by FIMS (QCLot: 515773)							
EB1617699-022	TRIP1	EG035F: Mercury	7439-97-6	0.01 mg/L	80.6	70	130
EG035F: Dissolved Mercury by FIMS (QCLot: 515776)							
EB1617699-042	M31-D	EG035F: Mercury	7439-97-6	0.01 mg/L	77.4	70	130
EG035F: Dissolved Mercury by FIMS (QCLot: 515777)							
EB1617699-062	M13-M	EG035F: Mercury	7439-97-6	0.01 mg/L	78.6	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 515823)							
EB1617699-002	M1-D	EG035T: Mercury	7439-97-6	0.01 mg/L	74.0	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 515824)							
EB1617699-022	TRIP1	EG035T: Mercury	7439-97-6	0.01 mg/L	81.8	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*
EG035T: Total Recoverable Mercury by FIMS (QCLot: 515825)							
EB1617699-042	M31-D	EG035T: Mercury	7439-97-6	0.01 mg/L	82.6	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 515826)							
EB1617699-062	M13-M	EG035T: Mercury	7439-97-6	0.01 mg/L	80.6	70	130
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 515559)							
EB1617699-002	M1-D	EG093A-F: Arsenic	7440-38-2	50 µg/L	105	70	130
		EG093A-F: Barium	7440-39-3	250 µg/L	98.3	70	130
		EG093A-F: Cadmium	7440-43-9	50 µg/L	99.1	70	130
		EG093A-F: Chromium	7440-47-3	50 µg/L	102	70	130
		EG093A-F: Cobalt	7440-48-4	50 µg/L	101	70	130
		EG093A-F: Copper	7440-50-8	100 µg/L	102	70	130
		EG093A-F: Lead	7439-92-1	50 µg/L	102	70	130
		EG093A-F: Nickel	7440-02-0	50 µg/L	99.5	70	130
		EG093A-F: Vanadium	7440-62-2	50 µg/L	101	70	130
		EG093A-F: Zinc	7440-66-6	100 µg/L	98.8	70	130
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 515562)							
EB1617699-022	TRIP1	EG093A-F: Arsenic	7440-38-2	50 µg/L	103	70	130
		EG093A-F: Barium	7440-39-3	250 µg/L	98.1	70	130
		EG093A-F: Cadmium	7440-43-9	50 µg/L	100	70	130
		EG093A-F: Chromium	7440-47-3	50 µg/L	106	70	130
		EG093A-F: Cobalt	7440-48-4	50 µg/L	104	70	130
		EG093A-F: Copper	7440-50-8	100 µg/L	105	70	130
		EG093A-F: Lead	7439-92-1	50 µg/L	98.0	70	130
		EG093A-F: Nickel	7440-02-0	50 µg/L	103	70	130
		EG093A-F: Vanadium	7440-62-2	50 µg/L	103	70	130
		EG093A-F: Zinc	7440-66-6	100 µg/L	103	70	130
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 515570)							
EB1617699-058	28	EG093A-F: Lead	7439-92-1	50 µg/L	96.4	70	130
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 515572)							
EB1617699-002	M1-D	EG093A-T: Arsenic	7440-38-2	50 µg/L	106	70	130
		EG093A-T: Barium	7440-39-3	250 µg/L	96.2	70	130
		EG093A-T: Cadmium	7440-43-9	50 µg/L	101	70	130
		EG093A-T: Chromium	7440-47-3	50 µg/L	107	70	130
		EG093A-T: Cobalt	7440-48-4	50 µg/L	109	70	130
		EG093A-T: Copper	7440-50-8	100 µg/L	104	70	130
		EG093A-T: Lead	7439-92-1	50 µg/L	101	70	130
		EG093A-T: Nickel	7440-02-0	50 µg/L	104	70	130
		EG093A-T: Vanadium	7440-62-2	50 µg/L	107	70	130
		EG093A-T: Zinc	7440-66-6	100 µg/L	102	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
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 515574)							
EB1617699-022	TRIP1	EG093A-T: Arsenic	7440-38-2	50 µg/L	111	70	130
		EG093A-T: Barium	7440-39-3	250 µg/L	98.1	70	130
		EG093A-T: Cadmium	7440-43-9	50 µg/L	104	70	130
		EG093A-T: Chromium	7440-47-3	50 µg/L	112	70	130
		EG093A-T: Cobalt	7440-48-4	50 µg/L	112	70	130
		EG093A-T: Copper	7440-50-8	100 µg/L	109	70	130
		EG093A-T: Lead	7439-92-1	50 µg/L	103	70	130
		EG093A-T: Nickel	7440-02-0	50 µg/L	111	70	130
		EG093A-T: Vanadium	7440-62-2	50 µg/L	112	70	130
		EG093A-T: Zinc	7440-66-6	100 µg/L	106	70	130
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 515576)							
EB1617699-038	M25-M	EG093A-T: Arsenic	7440-38-2	50 µg/L	108	70	130
		EG093A-T: Barium	7440-39-3	250 µg/L	108	70	130
		EG093A-T: Cadmium	7440-43-9	50 µg/L	106	70	130
		EG093A-T: Chromium	7440-47-3	50 µg/L	106	70	130
		EG093A-T: Cobalt	7440-48-4	50 µg/L	109	70	130
		EG093A-T: Copper	7440-50-8	100 µg/L	104	70	130
		EG093A-T: Lead	7439-92-1	50 µg/L	102	70	130
		EG093A-T: Nickel	7440-02-0	50 µg/L	110	70	130
		EG093A-T: Vanadium	7440-62-2	50 µg/L	106	70	130
		EG093A-T: Zinc	7440-66-6	100 µg/L	99.4	70	130
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 515578)							
EB1617699-058	28	EG093A-T: Arsenic	7440-38-2	50 µg/L	107	70	130
		EG093A-T: Barium	7440-39-3	250 µg/L	107	70	130
		EG093A-T: Cadmium	7440-43-9	50 µg/L	104	70	130
		EG093A-T: Chromium	7440-47-3	50 µg/L	105	70	130
		EG093A-T: Cobalt	7440-48-4	50 µg/L	108	70	130
		EG093A-T: Copper	7440-50-8	100 µg/L	105	70	130
		EG093A-T: Lead	7439-92-1	50 µg/L	104	70	130
		EG093A-T: Nickel	7440-02-0	50 µg/L	109	70	130
		EG093A-T: Vanadium	7440-62-2	50 µg/L	103	70	130
		EG093A-T: Zinc	7440-66-6	100 µg/L	98.7	70	130
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS (QCLot: 518009)							
EB1617699-021	DUP3	EG094A-F: Arsenic	7440-38-2	50 µg/L	91.2	70	130
		EG094A-F: Barium	7440-39-3	250 µg/L	106	70	130
		EG094A-F: Cadmium	7440-43-9	50 µg/L	104	70	130
		EG094A-F: Chromium	7440-47-3	50 µg/L	90.4	70	130
		EG094A-F: Cobalt	7440-48-4	50 µg/L	105	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
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS (QCLot: 518009) - continued							
EB1617699-021	DUP3	EG094A-F: Copper	7440-50-8	100 µg/L	102	70	130
		EG094A-F: Lead	7439-92-1	50 µg/L	84.1	70	130
		EG094A-F: Nickel	7440-02-0	50 µg/L	102	70	130
		EG094A-F: Vanadium	7440-62-2	50 µg/L	82.1	70	130
		EG094A-F: Zinc	7440-66-6	100 µg/L	99.2	70	130
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS (QCLot: 520730)							
EB1617699-050	19	EG094A-F: Arsenic	7440-38-2	50 µg/L	98.3	70	130
		EG094A-F: Barium	7440-39-3	250 µg/L	92.0	70	130
		EG094A-F: Cadmium	7440-43-9	50 µg/L	96.4	70	130
		EG094A-F: Chromium	7440-47-3	50 µg/L	95.7	70	130
		EG094A-F: Cobalt	7440-48-4	50 µg/L	98.5	70	130
		EG094A-F: Copper	7440-50-8	100 µg/L	99.0	70	130
		EG094A-F: Lead	7439-92-1	50 µg/L	91.7	70	130
		EG094A-F: Nickel	7440-02-0	50 µg/L	95.9	70	130
		EG094A-F: Vanadium	7440-62-2	50 µg/L	95.0	70	130
		EG094A-F: Zinc	7440-66-6	100 µg/L	103	70	130
EG094T: Total metals in Fresh water by ORC-ICPMS (QCLot: 517991)							
EB1617699-021	DUP3	EG094A-T: Arsenic	7440-38-2	50 µg/L	91.7	70	130
		EG094A-T: Barium	7440-39-3	250 µg/L	99.0	70	130
		EG094A-T: Cadmium	7440-43-9	50 µg/L	95.9	70	130
		EG094A-T: Chromium	7440-47-3	50 µg/L	86.8	70	130
		EG094A-T: Cobalt	7440-48-4	50 µg/L	98.2	70	130
		EG094A-T: Copper	7440-50-8	100 µg/L	96.0	70	130
		EG094A-T: Lead	7439-92-1	50 µg/L	94.5	70	130
		EG094A-T: Nickel	7440-02-0	50 µg/L	97.6	70	130
		EG094A-T: Vanadium	7440-62-2	50 µg/L	91.8	70	130
		EG094A-T: Zinc	7440-66-6	100 µg/L	92.1	70	130
EG094T: Total metals in Fresh water by ORC-ICPMS (QCLot: 520737)							
EB1617699-050	19	EG094A-T: Arsenic	7440-38-2	50 µg/L	93.9	70	130
		EG094A-T: Barium	7440-39-3	250 µg/L	96.5	70	130
		EG094A-T: Cadmium	7440-43-9	50 µg/L	96.7	70	130
		EG094A-T: Chromium	7440-47-3	50 µg/L	98.7	70	130
		EG094A-T: Cobalt	7440-48-4	50 µg/L	102	70	130
		EG094A-T: Copper	7440-50-8	100 µg/L	104	70	130
		EG094A-T: Lead	7439-92-1	50 µg/L	95.2	70	130
		EG094A-T: Nickel	7440-02-0	50 µg/L	99.9	70	130
		EG094A-T: Vanadium	7440-62-2	50 µg/L	99.2	70	130
		EG094A-T: Zinc	7440-66-6	100 µg/L	95.1	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
EK055G: Ammonia as N by Discrete Analyser (QCLot: 515623)							
EB1617699-062	M13-M	EK055G: Ammonia as N	7664-41-7	0.4 mg/L	101	70	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 515625)							
EB1617699-002	M1-D	EK055G: Ammonia as N	7664-41-7	0.4 mg/L	124	70	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 515627)							
EB1617699-022	TRIP1	EK055G: Ammonia as N	7664-41-7	0.4 mg/L	104	70	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 515629)							
EB1617699-042	M31-D	EK055G: Ammonia as N	7664-41-7	0.4 mg/L	108	70	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 515172)							
EB1617699-002	M1-D	EK057G: Nitrite as N	14797-65-0	0.4 mg/L	95.9	70	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 515173)							
EB1617699-022	TRIP1	EK057G: Nitrite as N	14797-65-0	0.4 mg/L	99.2	70	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 515179)							
EB1617699-035	M10-D	EK057G: Nitrite as N	14797-65-0	0.4 mg/L	99.1	70	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 515181)							
EB1617699-055	24-b	EK057G: Nitrite as N	14797-65-0	0.4 mg/L	92.4	70	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 515624)							
EB1617699-062	M13-M	EK059G: Nitrite + Nitrate as N	----	0.4 mg/L	89.4	70	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 515626)							
EB1617699-002	M1-D	EK059G: Nitrite + Nitrate as N	----	0.4 mg/L	108	70	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 515628)							
EB1617699-022	TRIP1	EK059G: Nitrite + Nitrate as N	----	0.4 mg/L	102	70	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 515630)							
EB1617699-042	M31-D	EK059G: Nitrite + Nitrate as N	----	0.4 mg/L	97.8	70	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 516874)							
EB1617699-002	M1-D	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	106	70	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 516876)							
EB1617699-022	TRIP1	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	99.4	70	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 516878)							
EB1617699-040	M31-S	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	104	70	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 516880)							
EB1617699-060	TRIP3	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	101	70	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 516873)							
EB1617699-002	M1-D	EK067G: Total Phosphorus as P	----	1 mg/L	104	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
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 516875)							
EB1617699-022	TRIP1	EK067G: Total Phosphorus as P	----	1 mg/L	116	70	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 516877)							
EB1617699-040	M31-S	EK067G: Total Phosphorus as P	----	1 mg/L	116	70	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 516879)							
EB1617699-060	TRIP3	EK067G: Total Phosphorus as P	----	1 mg/L	118	70	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 515171)							
EB1617699-002	M1-D	EK071G: Reactive Phosphorus as P	14265-44-2	0.4 mg/L	104	70	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 515174)							
EB1617699-022	TRIP1	EK071G: Reactive Phosphorus as P	14265-44-2	0.4 mg/L	101	70	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 515180)							
EB1617699-035	M10-D	EK071G: Reactive Phosphorus as P	14265-44-2	0.4 mg/L	114	70	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 515182)							
EB1617699-055	24-b	EK071G: Reactive Phosphorus as P	14265-44-2	0.4 mg/L	108	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 515020)							
EB1617699-002	M1-D	EP080: C6 - C9 Fraction	----	40 µg/L	100	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 515025)							
EB1617699-023	TRIP2	EP080: C6 - C9 Fraction	----	40 µg/L	104	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 515026)							
EB1617699-043	M37-S	EP080: C6 - C9 Fraction	----	40 µg/L	104	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 515027)							
EB1617699-066	M17-S	EP080: C6 - C9 Fraction	----	40 µg/L	103	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 515038)							
EB1617699-051	21	EP080: C6 - C9 Fraction	----	40 µg/L	112	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 515020)							
EB1617699-002	M1-D	EP080: C6 - C10 Fraction	C6_C10	40 µg/L	97.8	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 515025)							
EB1617699-023	TRIP2	EP080: C6 - C10 Fraction	C6_C10	40 µg/L	107	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 515026)							
EB1617699-043	M37-S	EP080: C6 - C10 Fraction	C6_C10	40 µg/L	106	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 515027)							
EB1617699-066	M17-S	EP080: C6 - C10 Fraction	C6_C10	40 µg/L	105	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 515038)							
EB1617699-051	21	EP080: C6 - C10 Fraction	C6_C10	40 µg/L	116	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*
EP080: BTEXN (QCLot: 515020)							
EB1617699-002	M1-D	EP080: Benzene	71-43-2	10 µg/L	86.7	70	130
		EP080: Toluene	108-88-3	10 µg/L	91.2	70	130
EP080: BTEXN (QCLot: 515025)							
EB1617699-023	TRIP2	EP080: Benzene	71-43-2	10 µg/L	83.0	70	130
		EP080: Toluene	108-88-3	10 µg/L	83.8	70	130
EP080: BTEXN (QCLot: 515026)							
EB1617699-043	M37-S	EP080: Benzene	71-43-2	10 µg/L	86.7	70	130
		EP080: Toluene	108-88-3	10 µg/L	96.0	70	130
EP080: BTEXN (QCLot: 515027)							
EB1617699-066	M17-S	EP080: Benzene	71-43-2	10 µg/L	90.0	70	130
		EP080: Toluene	108-88-3	10 µg/L	85.2	70	130
EP080: BTEXN (QCLot: 515038)							
EB1617699-051	21	EP080: Benzene	71-43-2	10 µg/L	88.8	70	130
		EP080: Toluene	108-88-3	10 µg/L	94.6	70	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB1617699**	Page	: 1 of 49
Amendment	: **2**		
Client	: **BMT WBM GROUP LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR JEREMY VISSER	Telephone	: +61 7 3552 8634
Project	: B21414 Elk	Date Samples Received	: 11-Jul-2016
Site	: ----	Issue Date	: 26-Jul-2016
Sampler	: CONOR JONES, DANIEL MORAN	No. of samples received	: 74
Order number	: ----	No. of samples analysed	: 73

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 Matrix Spike outliers occur.**
- **Laboratory Control 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
Laboratory Control Spike (LCS) Recoveries							
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	QC-515050-002	----	**Naphthalene**	91-20-3	107 %	47-101%	**Recovery greater than upper control limit**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	QC-515282-002	----	**Naphthalene**	91-20-3	106 %	47-101%	**Recovery greater than upper control limit**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	QC-515276-002	----	**Acenaphthylene**	208-96-8	116 %	46-109%	**Recovery greater than upper control limit**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	QC-515050-002	----	**Acenaphthene**	83-32-9	106 %	50-104%	**Recovery greater than upper control limit**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	QC-515050-002	----	**Fluorene**	86-73-7	115 %	50-114%	**Recovery greater than upper control limit**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	QC-515282-002	----	**Fluorene**	86-73-7	116 %	50-114%	**Recovery greater than upper control limit**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	QC-515276-002	----	**Chrysene**	218-01-9	124 %	45-119%	**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***
EA025: Total Suspended Solids dried at 104 ± 2°C						
Clear Plastic Bottle - Natural 23-b, 24-b	----	----	----	14-Jul-2016	09-Jul-2016	**5**
Clear Plastic Bottle - Natural DUP4	----	----	----	13-Jul-2016	10-Jul-2016	**3**
Clear Plastic Bottle - Natural 16, 17	----	----	----	14-Jul-2016	10-Jul-2016	**4**
Clear Plastic Bottle - Natural M25-S, M25-M, M25-D	----	----	----	14-Jul-2016	11-Jul-2016	**3**
Clear Plastic Bottle - Natural DUP5	----	----	----	13-Jul-2016	12-Jul-2016	**1**
Clear Plastic Bottle - Natural M31-S, M31-M, M31-D, M37-S, M37-M, M37-D	----	----	----	14-Jul-2016	12-Jul-2016	**2**
Clear Plastic Bottle - Natural M43-S, M43-M, M43-D, M13-S, M13-M, M13-D	----	----	----	14-Jul-2016	13-Jul-2016	**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
EA025: Total Suspended Solids dried at 104 ± 2°C - Analysis Holding Time Compliance						
Clear Plastic Bottle - Natural						
M2-S, M2-D, M3-S, M3-M, M3-D, M4-S, M4-M, M4-D, M11-S, M11-M, M11-D, M12-S, M12-M, M12-D, M6-S, M6-D, M9-S, M9-M, M9-D, M10-S, M10-D	----	----	----	13-Jul-2016	02-Jul-2016	**11**
Clear Plastic Bottle - Natural						
M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M7-D, M8-S, M8-D	----	----	----	13-Jul-2016	03-Jul-2016	**10**
Clear Plastic Bottle - Natural						
18, 19	----	----	----	14-Jul-2016	04-Jul-2016	**10**
Clear Plastic Bottle - Natural						
DUP3, TRIP2	----	----	----	13-Jul-2016	05-Jul-2016	**8**
Clear Plastic Bottle - Natural						
21, 22	----	----	----	14-Jul-2016	05-Jul-2016	**9**
Clear Plastic Bottle - Natural						
20	----	----	----	14-Jul-2016	06-Jul-2016	**8**
EK057G: Nitrite as N by Discrete Analyser						
Clear Plastic Bottle - Natural						
23-b, 24-b	----	----	----	12-Jul-2016	04-Jul-2016	**8**
Clear Plastic Bottle - Natural						
DUP4, 16, 17	----	----	----	12-Jul-2016	05-Jul-2016	**7**
Clear Plastic Bottle - Natural						
M25-S, M25-M, M25-D	----	----	----	12-Jul-2016	06-Jul-2016	**6**
Clear Plastic Bottle - Natural						
DUP5, M31-S, M31-M, M31-D, M37-S, M37-M, M37-D	----	----	----	12-Jul-2016	07-Jul-2016	**5**

Matrix: **WATER**

Method / Container / Client Sample ID(s)	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Days overdue	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Days overdue
EK057G: Nitrite as N by Discrete Analyser - Analysis Holding Time Compliance						
Clear Plastic Bottle - Natural M43-S, M43-M, M43-D, M13-S, M13-M, M13-D	----	----	----	12-Jul-2016	08-Jul-2016	**4**
Clear Plastic Bottle - Natural 28, 29, TRIP3, M19-S, M19-D, M17-S, M17-D, M21-S, M21-D, M22-S, M22-D	----	----	----	12-Jul-2016	09-Jul-2016	**3**
Clear Plastic Bottle - Natural M2-S, M2-D, M3-S, M3-M, M3-D, M4-S, M4-M, M4-D, M11-S, M11-M, M11-D, M12-S, M12-M, M12-D, M6-S, M6-D, M9-S, M9-M, M9-D, M10-S, M10-D	----	----	----	12-Jul-2016	27-Jun-2016	**15**
Clear Plastic Bottle - Natural M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M7-D, M8-S, M8-D	----	----	----	12-Jul-2016	28-Jun-2016	**14**
Clear Plastic Bottle - Natural 18, 19	----	----	----	12-Jul-2016	29-Jun-2016	**13**
Clear Plastic Bottle - Natural DUP3, TRIP2, 21, 22	----	----	----	12-Jul-2016	30-Jun-2016	**12**
Clear Plastic Bottle - Natural 20	----	----	----	12-Jul-2016	01-Jul-2016	**11**
EK071G: Reactive Phosphorus as P by discrete analyser						
Clear Plastic Bottle - Natural 23-b, 24-b	----	----	----	12-Jul-2016	04-Jul-2016	**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
EK071G: Reactive Phosphorus as P by discrete analyser - Analysis Holding Time Compliance						
Clear Plastic Bottle - Natural						
DUP4, 16, 17	----	----	----	12-Jul-2016	05-Jul-2016	**7**
Clear Plastic Bottle - Natural						
M25-S, M25-M, M25-D	----	----	----	12-Jul-2016	06-Jul-2016	**6**
Clear Plastic Bottle - Natural						
DUP5, M31-S, M31-M, M31-D, M37-S, M37-M, M37-D	----	----	----	12-Jul-2016	07-Jul-2016	**5**
Clear Plastic Bottle - Natural						
M43-S, M43-M, M43-D, M13-S, M13-M, M13-D	----	----	----	12-Jul-2016	08-Jul-2016	**4**
Clear Plastic Bottle - Natural						
28, 29, TRIP3, M19-S, M19-D, M17-S, M17-D, M21-S, M21-D, M22-S, M22-D	----	----	----	12-Jul-2016	09-Jul-2016	**3**
Clear Plastic Bottle - Natural						
M2-S, M2-D, M3-S, M3-M, M3-D, M4-S, M4-M, M4-D, M11-S, M11-M, M11-D, M12-S, M12-M, M12-D, M6-S, M6-D, M9-S, M9-M, M9-D, M10-S, M10-D	----	----	----	12-Jul-2016	27-Jun-2016	**15**
Clear Plastic Bottle - Natural						
M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M7-D, M8-S, M8-D	----	----	----	12-Jul-2016	28-Jun-2016	**14**

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
EK071G: Reactive Phosphorus as P by discrete analyser - Analysis Holding Time Compliance						
Clear Plastic Bottle - Natural						
18, 19	----	----	----	12-Jul-2016	29-Jun-2016	**13**
Clear Plastic Bottle - Natural						
DUP3, TRIP2, 21, 22	----	----	----	12-Jul-2016	30-Jun-2016	**12**
Clear Plastic Bottle - Natural						
20	----	----	----	12-Jul-2016	01-Jul-2016	**11**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons						
Amber Glass Bottle - Unpreserved						
DUP4, 16, 17	12-Jul-2016	10-Jul-2016	**2**	----	----	----
Amber Glass Bottle - Unpreserved						
M25-S, M25-M, M25-D	12-Jul-2016	11-Jul-2016	**1**	----	----	----
Amber Glass Bottle - Unpreserved						
M2-D, M3-S, M3-M, M3-D, M4-S, M4-M, M4-D, M11-S, M11-M, M11-D, M12-S, M12-M, M12-D, M6-S, M6-D, M9-S, M9-M, M9-D, M10-S, M10-D	12-Jul-2016	02-Jul-2016	**10**	----	----	----
Amber Glass Bottle - Unpreserved						
M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M8-S, M8-D	12-Jul-2016	03-Jul-2016	**9**	----	----	----
Amber Glass Bottle - Unpreserved						
18, 19	12-Jul-2016	04-Jul-2016	**8**	----	----	----
Amber Glass Bottle - Unpreserved						
TRIP2	12-Jul-2016	05-Jul-2016	**7**	----	----	----
EP080/071: Total Petroleum Hydrocarbons						
Amber Glass Bottle - Unpreserved						
DUP4, 16, 17	12-Jul-2016	10-Jul-2016	**2**	----	----	----

Matrix: **WATER**

Method / Container / Client Sample ID(s)		Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Days overdue	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Days overdue
EP080/071: Total Petroleum Hydrocarbons - Analysis Holding Time Compliance							
Amber Glass Bottle - Unpreserved							
M25-S,	M25-M,	12-Jul-2016	11-Jul-2016	**1**	----	----	----
M25-D							
Amber Glass Bottle - Unpreserved							
M2-D,	M3-S,	12-Jul-2016	02-Jul-2016	**10**	----	----	----
M3-M,	M3-D,						
M4-S,	M4-M,						
M4-D,	M11-S,						
M11-M,	M11-D,						
M12-S,	M12-M,						
M12-D,	M6-S,						
M6-D,	M9-S,						
M9-M,	M9-D,						
M10-S,	M10-D						
Amber Glass Bottle - Unpreserved							
M1-S,	M1-D,	12-Jul-2016	03-Jul-2016	**9**	----	----	----
M5-S,	M5-D,						
DUP1,	DUP2,						
TRIP1,	M7-S,						
M8-S,	M8-D						
Amber Glass Bottle - Unpreserved							
18,	19	12-Jul-2016	04-Jul-2016	**8**	----	----	----
Amber Glass Bottle - Unpreserved							
TRIP2		12-Jul-2016	05-Jul-2016	**7**	----	----	----
Amber VOC Vial - Sulfuric Acid							
TRIP BLANK 1		13-Jul-2016	02-Feb-2016	**162**	13-Jul-2016	02-Feb-2016	**162**
Amber VOC Vial - Sulfuric Acid							
M2-S,	M2-D,	13-Jul-2016	09-Jul-2016	**4**	13-Jul-2016	09-Jul-2016	**4**
M3-S,	M3-M,						
M3-D,	M4-S,						
M4-M,	M4-D,						
M11-S,	M11-M,						
M11-D,	M12-S,						
M12-M,	M12-D,						
M6-S,	M6-D,						
M9-S,	M9-M,						
M9-D,	M10-S,						
M10-D							

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
EP080/071: Total Petroleum Hydrocarbons - Analysis Holding Time Compliance						
Amber VOC Vial - Sulfuric Acid						
M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M7-D, M8-S, M8-D	13-Jul-2016	10-Jul-2016	**3**	13-Jul-2016	10-Jul-2016	**3**
Amber VOC Vial - Sulfuric Acid						
18	13-Jul-2016	11-Jul-2016	**2**	13-Jul-2016	11-Jul-2016	**2**
Amber VOC Vial - Sulfuric Acid						
TRIP2, 21	13-Jul-2016	12-Jul-2016	**1**	13-Jul-2016	12-Jul-2016	**1**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions						
Amber Glass Bottle - Unpreserved						
DUP4, 16, 17	12-Jul-2016	10-Jul-2016	**2**	----	----	----
Amber Glass Bottle - Unpreserved						
M25-S, M25-M, M25-D	12-Jul-2016	11-Jul-2016	**1**	----	----	----
Amber Glass Bottle - Unpreserved						
M2-D, M3-S, M3-M, M3-D, M4-S, M4-M, M4-D, M11-S, M11-M, M11-D, M12-S, M12-M, M12-D, M6-S, M6-D, M9-S, M9-M, M9-D, M10-S, M10-D	12-Jul-2016	02-Jul-2016	**10**	----	----	----
Amber Glass Bottle - Unpreserved						
M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M8-S, M8-D	12-Jul-2016	03-Jul-2016	**9**	----	----	----
Amber Glass Bottle - Unpreserved						
18, 19	12-Jul-2016	04-Jul-2016	**8**	----	----	----
Amber Glass Bottle - Unpreserved						
TRIP2	12-Jul-2016	05-Jul-2016	**7**	----	----	----
Amber VOC Vial - Sulfuric Acid						
TRIP BLANK 1	13-Jul-2016	02-Feb-2016	**162**	13-Jul-2016	02-Feb-2016	**162**

Matrix: **WATER**

Method / Container / Client Sample ID(s)	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Days overdue	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Days overdue
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Analysis Holding Time						
Amber VOC Vial - Sulfuric Acid						
M2-S, M2-D, M3-S, M3-M, M3-D, M4-S, M4-M, M4-D, M11-S, M11-M, M11-D, M12-S, M12-M, M12-D, M6-S, M6-D, M9-S, M9-M, M9-D, M10-S, M10-D	13-Jul-2016	09-Jul-2016	**4**	13-Jul-2016	09-Jul-2016	**4**
Amber VOC Vial - Sulfuric Acid						
M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M7-D, M8-S, M8-D	13-Jul-2016	10-Jul-2016	**3**	13-Jul-2016	10-Jul-2016	**3**
Amber VOC Vial - Sulfuric Acid						
18	13-Jul-2016	11-Jul-2016	**2**	13-Jul-2016	11-Jul-2016	**2**
Amber VOC Vial - Sulfuric Acid						
TRIP2, 21	13-Jul-2016	12-Jul-2016	**1**	13-Jul-2016	12-Jul-2016	**1**
EP080: BTEXN						
Amber VOC Vial - Sulfuric Acid						
TRIP BLANK 1	13-Jul-2016	02-Feb-2016	**162**	13-Jul-2016	02-Feb-2016	**162**
Amber VOC Vial - Sulfuric Acid						
M2-S, M2-D, M3-S, M3-M, M3-D, M4-S, M4-M, M4-D, M11-S, M11-M, M11-D, M12-S, M12-M, M12-D, M6-S, M6-D, M9-S, M9-M, M9-D, M10-S, M10-D	13-Jul-2016	09-Jul-2016	**4**	13-Jul-2016	09-Jul-2016	**4**

Matrix: **WATER**

Method / Container / Client Sample ID(s)	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Days overdue	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Days overdue
EP080: BTEXN - Analysis Holding Time Compliance						
Amber VOC Vial - Sulfuric Acid						
M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M7-D, M8-S, M8-D	13-Jul-2016	10-Jul-2016	**3**	13-Jul-2016	10-Jul-2016	**3**
Amber VOC Vial - Sulfuric Acid						
18	13-Jul-2016	11-Jul-2016	**2**	13-Jul-2016	11-Jul-2016	**2**
Amber VOC Vial - Sulfuric Acid						
TRIP2, 21	13-Jul-2016	12-Jul-2016	**1**	13-Jul-2016	12-Jul-2016	**1**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count: QC	Count: Regular	Rate (%): Actual	Rate (%): Expected	Quality Control Specification
Laboratory Duplicates (DUP)					
Dissolved Metals in Saline Water -Suite A by ORC-ICPMS	6	63	9.52	10.00	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Saline Water -Suite B by ORC-ICPMS	5	63	7.94	10.00	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	0	64	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	63	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
Dissolved Metals in Saline Water -Suite A by ORC-ICPMS	3	63	4.76	5.00	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	0	64	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	63	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only	0	1	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: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	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
EA025: Total Suspended Solids dried at 104 ± 2°C							
Clear Plastic Bottle - Natural (EA025)							
23-b, 24-b	**02-Jul-2016**	**----**	----	----	**14-Jul-2016**	09-Jul-2016	×
Clear Plastic Bottle - Natural (EA025)							
DUP4	**03-Jul-2016**	**----**	----	----	**13-Jul-2016**	10-Jul-2016	×
Clear Plastic Bottle - Natural (EA025)							
16, 17	**03-Jul-2016**	**----**	----	----	**14-Jul-2016**	10-Jul-2016	×
Clear Plastic Bottle - Natural (EA025)							
M25-S, M25-M, M25-D	**04-Jul-2016**	**----**	----	----	**14-Jul-2016**	11-Jul-2016	×
Clear Plastic Bottle - Natural (EA025)							
DUP5	**05-Jul-2016**	**----**	----	----	**13-Jul-2016**	12-Jul-2016	×
Clear Plastic Bottle - Natural (EA025)							
M31-S, M31-M, M31-D, M37-S, M37-M, M37-D	**05-Jul-2016**	**----**	----	----	**14-Jul-2016**	12-Jul-2016	×
Clear Plastic Bottle - Natural (EA025)							
M43-S, M43-M, M43-D, M13-S, M13-M, M13-D	**06-Jul-2016**	**----**	----	----	**14-Jul-2016**	13-Jul-2016	×
Clear Plastic Bottle - Natural (EA025)							
28, 29, TRIP3, M19-S, M19-D, M17-S, M17-D, M21-S, M21-D, M22-S, M22-D	**07-Jul-2016**	**----**	----	----	**14-Jul-2016**	14-Jul-2016	✓
Clear Plastic Bottle - Natural (EA025)							
M2-S, M2-D, M3-S, M3-M, M3-D, M4-S, M4-M, M4-D, M11-S, M11-M, M11-D, M12-S, M12-M, M12-D, M6-S, M6-D, M9-S, M9-M, M9-D, M10-S, M10-D	**25-Jun-2016**	**----**	----	----	**13-Jul-2016**	02-Jul-2016	×
Clear Plastic Bottle - Natural (EA025)							

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
EA025: Total Suspended Solids dried at 104 ± 2°C - Continued							
M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M7-D, M8-S, M8-D	**26-Jun-2016**	**----**	----	----	**13-Jul-2016**	03-Jul-2016	×
Clear Plastic Bottle - Natural (EA025) 18, 19	**27-Jun-2016**	**----**	----	----	**14-Jul-2016**	04-Jul-2016	×
Clear Plastic Bottle - Natural (EA025) DUP3, TRIP2	**28-Jun-2016**	**----**	----	----	**13-Jul-2016**	05-Jul-2016	×
Clear Plastic Bottle - Natural (EA025) 21, 22	**28-Jun-2016**	**----**	----	----	**14-Jul-2016**	05-Jul-2016	×
Clear Plastic Bottle - Natural (EA025) 20	**29-Jun-2016**	**----**	----	----	**14-Jul-2016**	06-Jul-2016	×

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
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							
23-b, 24-b	**02-Jul-2016**	**----**	----	----	**14-Jul-2016**	30-Jul-2016	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							
DUP4, 16, 17	**03-Jul-2016**	**----**	----	----	**14-Jul-2016**	31-Jul-2016	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							
M25-S, M25-M, M25-D	**04-Jul-2016**	**----**	----	----	**14-Jul-2016**	01-Aug-2016	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							
DUP5, M31-S, M31-M, M31-D, M37-S, M37-M, M37-D	**05-Jul-2016**	**----**	----	----	**14-Jul-2016**	02-Aug-2016	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							
M43-S, M43-M, M43-D, M13-S, M13-M, M13-D	**06-Jul-2016**	**----**	----	----	**14-Jul-2016**	03-Aug-2016	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							
28, 29, TRIP3, M19-S, M19-D, M17-S, M17-D, M21-S, M21-D, M22-S, M22-D, Rinsate	**07-Jul-2016**	**----**	----	----	**14-Jul-2016**	04-Aug-2016	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							
M2-S, M2-D, M3-S, M3-M, M3-D, M4-S, M4-M, M4-D, M11-S, M11-M, M11-D, M12-S, M12-M, M12-D, M6-S, M6-D, M9-S, M9-M, M9-D, M10-S, M10-D	**25-Jun-2016**	**----**	----	----	**14-Jul-2016**	23-Jul-2016	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							
M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M7-D, M8-S, M8-D	**26-Jun-2016**	**----**	----	----	**14-Jul-2016**	24-Jul-2016	✓

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
EG035F: Dissolved Mercury by FIMS - Continued							
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							
18, 19	**27-Jun-2016**	**----**	----	----	**14-Jul-2016**	25-Jul-2016	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							
DUP3, TRIP2, 21, 22	**28-Jun-2016**	**----**	----	----	**14-Jul-2016**	26-Jul-2016	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							
20	**29-Jun-2016**	**----**	----	----	**14-Jul-2016**	27-Jul-2016	✓

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
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG035T)							
23-b, 24-b	**02-Jul-2016**	**----**	----	----	**14-Jul-2016**	30-Jul-2016	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG035T)							
DUP4, 16, 17	**03-Jul-2016**	**----**	----	----	**14-Jul-2016**	31-Jul-2016	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG035T)							
M25-S, M25-M, M25-D	**04-Jul-2016**	**----**	----	----	**14-Jul-2016**	01-Aug-2016	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG035T)							
DUP5, M31-S, M31-M, M31-D, M37-S, M37-M, M37-D	**05-Jul-2016**	**----**	----	----	**14-Jul-2016**	02-Aug-2016	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG035T)							
M43-S, M43-M, M43-D, M13-S, M13-M, M13-D	**06-Jul-2016**	**----**	----	----	**14-Jul-2016**	03-Aug-2016	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG035T)							
28, 29, TRIP3, M19-S, M19-D, M17-S, M17-D, M21-S, M21-D, M22-S, M22-D, Rinsate	**07-Jul-2016**	**----**	----	----	**14-Jul-2016**	04-Aug-2016	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG035T)							
M2-S, M2-D, M3-S, M3-M, M3-D, M4-S, M4-M, M4-D, M11-S, M11-M, M11-D, M12-S, M12-M, M12-D, M6-S, M6-D, M9-S, M9-M, M9-D, M10-S, M10-D	**25-Jun-2016**	**----**	----	----	**14-Jul-2016**	23-Jul-2016	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG035T)							
M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M7-D, M8-S, M8-D	**26-Jun-2016**	**----**	----	----	**14-Jul-2016**	24-Jul-2016	✓

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
EG035T: Total Recoverable Mercury by FIMS - Continued							
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG035T)							
18, 19	**27-Jun-2016**	**----**	----	----	**14-Jul-2016**	25-Jul-2016	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG035T)							
DUP3, TRIP2, 21, 22	**28-Jun-2016**	**----**	----	----	**14-Jul-2016**	26-Jul-2016	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG035T)							
20	**29-Jun-2016**	**----**	----	----	**14-Jul-2016**	27-Jul-2016	✓

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
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS							
Clear Plastic Bottle - Filtered; Lab-acidified (EG093A-F)							
23-b	**02-Jul-2016**	**----**	----	----	**14-Jul-2016**	29-Dec-2016	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG093A-F)							
M25-S, M25-M, M25-D	**04-Jul-2016**	**----**	----	----	**14-Jul-2016**	31-Dec-2016	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG093A-F)							
DUP5	**05-Jul-2016**	**----**	----	----	**13-Jul-2016**	01-Jan-2017	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG093A-F)							
M31-S, M31-M, M31-D, M37-S, M37-M, M37-D	**05-Jul-2016**	**----**	----	----	**14-Jul-2016**	01-Jan-2017	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG093A-F)							
M43-S, M43-M, M43-D, M13-S, M13-M, M13-D	**06-Jul-2016**	**----**	----	----	**14-Jul-2016**	02-Jan-2017	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG093A-F)							
28, 29, TRIP3, M19-S, M19-D, M17-S, M17-D, M21-S, M21-D, M22-S, M22-D	**07-Jul-2016**	**----**	----	----	**14-Jul-2016**	03-Jan-2017	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG093A-F)							
M2-S, M2-D, M3-S, M3-M, M3-D, M4-S, M4-M, M4-D, M11-S, M11-M, M11-D, M12-S, M12-M, M12-D, M6-S, M6-D, M9-S, M9-M, M9-D, M10-S, M10-D	**25-Jun-2016**	**----**	----	----	**13-Jul-2016**	22-Dec-2016	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG093A-F)							
M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M7-D, M8-S, M8-D	**26-Jun-2016**	**----**	----	----	**13-Jul-2016**	23-Dec-2016	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG093A-F)							
TRIP2	**28-Jun-2016**	**----**	----	----	**13-Jul-2016**	25-Dec-2016	✓

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
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS - Continued							
Clear Plastic Bottle - Filtered; Lab-acidified (EG093A-F)							
21	**28-Jun-2016**	**----**	----	----	**14-Jul-2016**	25-Dec-2016	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG093A-F)							
20	**29-Jun-2016**	**----**	----	----	**14-Jul-2016**	26-Dec-2016	✓

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
EG093T: Total Metals in Saline Water by ORC-ICPMS							
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG093A-T)							
23-b	**02-Jul-2016**	**14-Jul-2016**	29-Dec-2016	✓	**14-Jul-2016**	29-Dec-2016	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG093A-T)							
M25-S, M25-M, M25-D	**04-Jul-2016**	**14-Jul-2016**	31-Dec-2016	✓	**14-Jul-2016**	31-Dec-2016	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG093A-T)							
DUP5	**05-Jul-2016**	**13-Jul-2016**	01-Jan-2017	✓	**13-Jul-2016**	01-Jan-2017	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG093A-T)							
M31-S, M31-M, M31-D, M37-S, M37-M, M37-D	**05-Jul-2016**	**14-Jul-2016**	01-Jan-2017	✓	**14-Jul-2016**	01-Jan-2017	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG093A-T)							
M43-S, M43-M, M43-D, M13-S, M13-M, M13-D	**06-Jul-2016**	**14-Jul-2016**	02-Jan-2017	✓	**14-Jul-2016**	02-Jan-2017	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG093A-T)							
28, 29, TRIP3, M19-S, M19-D, M17-S, M17-D, M21-S, M21-D, M22-S, M22-D	**07-Jul-2016**	**14-Jul-2016**	03-Jan-2017	✓	**14-Jul-2016**	03-Jan-2017	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG093A-T)							
M2-S, M2-D, M3-S, M3-M, M3-D, M4-S, M4-M, M4-D, M11-S, M11-M, M11-D, M12-S, M12-M, M12-D, M6-S, M6-D, M9-S, M9-M, M9-D, M10-S, M10-D	**25-Jun-2016**	**13-Jul-2016**	22-Dec-2016	✓	**13-Jul-2016**	22-Dec-2016	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG093A-T)							
M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M7-D, M8-S, M8-D	**26-Jun-2016**	**13-Jul-2016**	23-Dec-2016	✓	**13-Jul-2016**	23-Dec-2016	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG093A-T)							
TRIP2	**28-Jun-2016**	**13-Jul-2016**	25-Dec-2016	✓	**13-Jul-2016**	25-Dec-2016	✓

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
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued							
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG093A-T) 21	**28-Jun-2016**	**14-Jul-2016**	25-Dec-2016	✓	**14-Jul-2016**	25-Dec-2016	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG093A-T) 20	**29-Jun-2016**	**14-Jul-2016**	26-Dec-2016	✓	**14-Jul-2016**	26-Dec-2016	✓
EG094F: Dissolved Metals in Fresh Water by ORC-ICPMS							
Clear HDPE (U-T ORC) - Filtered; Lab-acidified (EG094B-F) 18	**27-Jun-2016**	**----**	----	----	**18-Jul-2016**	24-Dec-2016	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG094B-F) 24-b	**02-Jul-2016**	**----**	----	----	**18-Jul-2016**	29-Dec-2016	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG094B-F) DUP4	**03-Jul-2016**	**----**	----	----	**14-Jul-2016**	30-Dec-2016	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG094B-F) 16, 17	**03-Jul-2016**	**----**	----	----	**18-Jul-2016**	30-Dec-2016	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG094B-F) Rinsate	**07-Jul-2016**	**----**	----	----	**18-Jul-2016**	03-Jan-2017	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG094B-F) 19	**27-Jun-2016**	**----**	----	----	**18-Jul-2016**	24-Dec-2016	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG094B-F) DUP3	**28-Jun-2016**	**----**	----	----	**14-Jul-2016**	25-Dec-2016	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG094B-F) 22	**28-Jun-2016**	**----**	----	----	**18-Jul-2016**	25-Dec-2016	✓
EG094T: Total metals in Fresh water by ORC-ICPMS							
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG094B-T) 24-b	**02-Jul-2016**	**18-Jul-2016**	29-Dec-2016	✓	**18-Jul-2016**	29-Dec-2016	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG094B-T) DUP4	**03-Jul-2016**	**14-Jul-2016**	30-Dec-2016	✓	**14-Jul-2016**	30-Dec-2016	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG094B-T) 16, 17	**03-Jul-2016**	**18-Jul-2016**	30-Dec-2016	✓	**18-Jul-2016**	30-Dec-2016	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG094B-T) Rinsate	**07-Jul-2016**	**18-Jul-2016**	03-Jan-2017	✓	**18-Jul-2016**	03-Jan-2017	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG094B-T) 18, 19	**27-Jun-2016**	**18-Jul-2016**	24-Dec-2016	✓	**18-Jul-2016**	24-Dec-2016	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG094B-T) DUP3	**28-Jun-2016**	**14-Jul-2016**	25-Dec-2016	✓	**14-Jul-2016**	25-Dec-2016	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG094B-T) 22	**28-Jun-2016**	**18-Jul-2016**	25-Dec-2016	✓	**18-Jul-2016**	25-Dec-2016	✓

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
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
23-b, 24-b	**02-Jul-2016**	**----**	----	----	**14-Jul-2016**	30-Jul-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
DUP4, 16, 17	**03-Jul-2016**	**----**	----	----	**14-Jul-2016**	31-Jul-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
M25-S, M25-M, M25-D	**04-Jul-2016**	**----**	----	----	**14-Jul-2016**	01-Aug-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
DUP5, M31-S, M31-M, M31-D, M37-S, M37-M, M37-D	**05-Jul-2016**	**----**	----	----	**14-Jul-2016**	02-Aug-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
M13-S, M13-M, M13-D	**06-Jul-2016**	**----**	----	----	**13-Jul-2016**	03-Aug-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
M43-S, M43-M, M43-D	**06-Jul-2016**	**----**	----	----	**14-Jul-2016**	03-Aug-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
M19-S, M19-D, M17-S, M17-D, M21-S, M21-D, M22-S, M22-D, Rinsate	**07-Jul-2016**	**----**	----	----	**13-Jul-2016**	04-Aug-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
28, 29, TRIP3	**07-Jul-2016**	**----**	----	----	**14-Jul-2016**	04-Aug-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
M2-S, M2-D, M3-S, M3-M, M3-D, M4-S, M4-M, M4-D, M11-S, M11-M, M11-D, M12-S, M12-M, M12-D, M6-S, M6-D, M9-S, M9-M, M9-D, M10-S, M10-D	**25-Jun-2016**	**----**	----	----	**14-Jul-2016**	23-Jul-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK055G)							

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
EK055G: Ammonia as N by Discrete Analyser - Continued							
M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M7-D, M8-S, M8-D	**26-Jun-2016**	**----**	----	----	**14-Jul-2016**	24-Jul-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
18, 19	**27-Jun-2016**	**----**	----	----	**14-Jul-2016**	25-Jul-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
DUP3, TRIP2, 21, 22	**28-Jun-2016**	**----**	----	----	**14-Jul-2016**	26-Jul-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
20	**29-Jun-2016**	**----**	----	----	**14-Jul-2016**	27-Jul-2016	✓

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
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G)							
23-b, 24-b	**02-Jul-2016**	**----**	----	----	**12-Jul-2016**	04-Jul-2016	×
Clear Plastic Bottle - Natural (EK057G)							
DUP4, 16, 17	**03-Jul-2016**	**----**	----	----	**12-Jul-2016**	05-Jul-2016	×
Clear Plastic Bottle - Natural (EK057G)							
M25-S, M25-M, M25-D	**04-Jul-2016**	**----**	----	----	**12-Jul-2016**	06-Jul-2016	×
Clear Plastic Bottle - Natural (EK057G)							
DUP5, M31-S, M31-M, M31-D, M37-S, M37-M, M37-D	**05-Jul-2016**	**----**	----	----	**12-Jul-2016**	07-Jul-2016	×
Clear Plastic Bottle - Natural (EK057G)							
M43-S, M43-M, M43-D, M13-S, M13-M, M13-D	**06-Jul-2016**	**----**	----	----	**12-Jul-2016**	08-Jul-2016	×
Clear Plastic Bottle - Natural (EK057G)							
28, 29, TRIP3, M19-S, M19-D, M17-S, M17-D, M21-S, M21-D, M22-S, M22-D	**07-Jul-2016**	**----**	----	----	**12-Jul-2016**	09-Jul-2016	×
Clear Plastic Bottle - Natural (EK057G)							
M2-S, M2-D, M3-S, M3-M, M3-D, M4-S, M4-M, M4-D, M11-S, M11-M, M11-D, M12-S, M12-M, M12-D, M6-S, M6-D, M9-S, M9-M, M9-D, M10-S, M10-D	**25-Jun-2016**	**----**	----	----	**12-Jul-2016**	27-Jun-2016	×
Clear Plastic Bottle - Natural (EK057G)							
M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M7-D, M8-S, M8-D	**26-Jun-2016**	**----**	----	----	**12-Jul-2016**	28-Jun-2016	×

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
EK057G: Nitrite as N by Discrete Analyser - Continued							
Clear Plastic Bottle - Natural (EK057G)							
18, 19	**27-Jun-2016**	**----**	----	----	**12-Jul-2016**	29-Jun-2016	✘
Clear Plastic Bottle - Natural (EK057G)							
DUP3, TRIP2, 21, 22	**28-Jun-2016**	**----**	----	----	**12-Jul-2016**	30-Jun-2016	✘
Clear Plastic Bottle - Natural (EK057G)							
20	**29-Jun-2016**	**----**	----	----	**12-Jul-2016**	01-Jul-2016	✘

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
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G) 23-b, 24-b	**02-Jul-2016**	**----**	----	----	**14-Jul-2016**	30-Jul-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK059G) DUP4, 16, 17	**03-Jul-2016**	**----**	----	----	**14-Jul-2016**	31-Jul-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK059G) M25-S, M25-M, M25-D	**04-Jul-2016**	**----**	----	----	**14-Jul-2016**	01-Aug-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK059G) DUP5, M31-S, M31-M, M31-D, M37-S, M37-M, M37-D	**05-Jul-2016**	**----**	----	----	**14-Jul-2016**	02-Aug-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK059G) M13-S, M13-M, M13-D	**06-Jul-2016**	**----**	----	----	**13-Jul-2016**	03-Aug-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK059G) M43-S, M43-M, M43-D	**06-Jul-2016**	**----**	----	----	**14-Jul-2016**	03-Aug-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK059G) M19-S, M19-D, M17-S, M17-D, M21-S, M21-D, M22-S, M22-D, Rinsate	**07-Jul-2016**	**----**	----	----	**13-Jul-2016**	04-Aug-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK059G) 28, 29, TRIP3	**07-Jul-2016**	**----**	----	----	**14-Jul-2016**	04-Aug-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK059G) M2-S, M2-D, M3-S, M3-M, M3-D, M4-S, M4-M, M4-D, M11-S, M11-M, M11-D, M12-S, M12-M, M12-D, M6-S, M6-D, M9-S, M9-M, M9-D, M10-S, M10-D	**25-Jun-2016**	**----**	----	----	**14-Jul-2016**	23-Jul-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK059G)							

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
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser - Continued							
M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M7-D, M8-S, M8-D	**26-Jun-2016**	**----**	----	----	**14-Jul-2016**	24-Jul-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
18, 19	**27-Jun-2016**	**----**	----	----	**14-Jul-2016**	25-Jul-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
DUP3, TRIP2, 21, 22	**28-Jun-2016**	**----**	----	----	**14-Jul-2016**	26-Jul-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
20	**29-Jun-2016**	**----**	----	----	**14-Jul-2016**	27-Jul-2016	✓

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
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
23-b, 24-b	**02-Jul-2016**	**14-Jul-2016**	30-Jul-2016	✓	**14-Jul-2016**	30-Jul-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
DUP4, 16, 17	**03-Jul-2016**	**14-Jul-2016**	31-Jul-2016	✓	**14-Jul-2016**	31-Jul-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
M25-S, M25-M, M25-D	**04-Jul-2016**	**14-Jul-2016**	01-Aug-2016	✓	**14-Jul-2016**	01-Aug-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
DUP5, M31-S, M31-M, M31-D, M37-S, M37-M, M37-D	**05-Jul-2016**	**14-Jul-2016**	02-Aug-2016	✓	**14-Jul-2016**	02-Aug-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
M43-S, M43-M, M43-D, M13-S, M13-M, M13-D	**06-Jul-2016**	**14-Jul-2016**	03-Aug-2016	✓	**14-Jul-2016**	03-Aug-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
28, 29, TRIP3, M19-S, M19-D, M17-S, M17-D, M21-S, M21-D, M22-S, M22-D, Rinsate	**07-Jul-2016**	**14-Jul-2016**	04-Aug-2016	✓	**14-Jul-2016**	04-Aug-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
M2-S, M2-D, M3-S, M3-M, M3-D, M4-S, M4-M, M4-D, M11-S, M11-M, M11-D, M12-S, M12-M, M12-D, M6-S, M6-D, M9-S, M9-M, M9-D, M10-S, M10-D	**25-Jun-2016**	**14-Jul-2016**	23-Jul-2016	✓	**14-Jul-2016**	23-Jul-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M7-D, M8-S, M8-D	**26-Jun-2016**	**14-Jul-2016**	24-Jul-2016	✓	**14-Jul-2016**	24-Jul-2016	✓

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
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser - Continued							
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
18, 19	**27-Jun-2016**	**14-Jul-2016**	25-Jul-2016	✓	**14-Jul-2016**	25-Jul-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
DUP3, TRIP2, 21, 22	**28-Jun-2016**	**14-Jul-2016**	26-Jul-2016	✓	**14-Jul-2016**	26-Jul-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
20	**29-Jun-2016**	**14-Jul-2016**	27-Jul-2016	✓	**14-Jul-2016**	27-Jul-2016	✓

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
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
23-b, 24-b	**02-Jul-2016**	**14-Jul-2016**	30-Jul-2016	✓	**14-Jul-2016**	30-Jul-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
DUP4, 16, 17	**03-Jul-2016**	**14-Jul-2016**	31-Jul-2016	✓	**14-Jul-2016**	31-Jul-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
M25-S, M25-M, M25-D	**04-Jul-2016**	**14-Jul-2016**	01-Aug-2016	✓	**14-Jul-2016**	01-Aug-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
DUP5, M31-S, M31-M, M31-D, M37-S, M37-M, M37-D	**05-Jul-2016**	**14-Jul-2016**	02-Aug-2016	✓	**14-Jul-2016**	02-Aug-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
M43-S, M43-M, M43-D, M13-S, M13-M, M13-D	**06-Jul-2016**	**14-Jul-2016**	03-Aug-2016	✓	**14-Jul-2016**	03-Aug-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
28, 29, TRIP3, M19-S, M19-D, M17-S, M17-D, M21-S, M21-D, M22-S, M22-D, Rinsate	**07-Jul-2016**	**14-Jul-2016**	04-Aug-2016	✓	**14-Jul-2016**	04-Aug-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
M2-S, M2-D, M3-S, M3-M, M3-D, M4-S, M4-M, M4-D, M11-S, M11-M, M11-D, M12-S, M12-M, M12-D, M6-S, M6-D, M9-S, M9-M, M9-D, M10-S, M10-D	**25-Jun-2016**	**14-Jul-2016**	23-Jul-2016	✓	**14-Jul-2016**	23-Jul-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M7-D, M8-S, M8-D	**26-Jun-2016**	**14-Jul-2016**	24-Jul-2016	✓	**14-Jul-2016**	24-Jul-2016	✓

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
EK067G: Total Phosphorus as P by Discrete Analyser - Continued							
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
18, 19	**27-Jun-2016**	**14-Jul-2016**	25-Jul-2016	✓	**14-Jul-2016**	25-Jul-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
DUP3, TRIP2, 21, 22	**28-Jun-2016**	**14-Jul-2016**	26-Jul-2016	✓	**14-Jul-2016**	26-Jul-2016	✓
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
20	**29-Jun-2016**	**14-Jul-2016**	27-Jul-2016	✓	**14-Jul-2016**	27-Jul-2016	✓

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
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G) 23-b, 24-b	**02-Jul-2016**	**----**	----	----	**12-Jul-2016**	04-Jul-2016	×
Clear Plastic Bottle - Natural (EK071G) DUP4, 16, 17	**03-Jul-2016**	**----**	----	----	**12-Jul-2016**	05-Jul-2016	×
Clear Plastic Bottle - Natural (EK071G) M25-S, M25-M, M25-D	**04-Jul-2016**	**----**	----	----	**12-Jul-2016**	06-Jul-2016	×
Clear Plastic Bottle - Natural (EK071G) DUP5, M31-S, M31-M, M31-D, M37-S, M37-M, M37-D	**05-Jul-2016**	**----**	----	----	**12-Jul-2016**	07-Jul-2016	×
Clear Plastic Bottle - Natural (EK071G) M43-S, M43-M, M43-D, M13-S, M13-M, M13-D	**06-Jul-2016**	**----**	----	----	**12-Jul-2016**	08-Jul-2016	×
Clear Plastic Bottle - Natural (EK071G) 28, 29, TRIP3, M19-S, M19-D, M17-S, M17-D, M21-S, M21-D, M22-S, M22-D	**07-Jul-2016**	**----**	----	----	**12-Jul-2016**	09-Jul-2016	×
Clear Plastic Bottle - Natural (EK071G) M2-S, M2-D, M3-S, M3-M, M3-D, M4-S, M4-M, M4-D, M11-S, M11-M, M11-D, M12-S, M12-M, M12-D, M6-S, M6-D, M9-S, M9-M, M9-D, M10-S, M10-D	**25-Jun-2016**	**----**	----	----	**12-Jul-2016**	27-Jun-2016	×
Clear Plastic Bottle - Natural (EK071G) M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M7-D, M8-S, M8-D	**26-Jun-2016**	**----**	----	----	**12-Jul-2016**	28-Jun-2016	×

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
EK071G: Reactive Phosphorus as P by discrete analyser - Continued							
Clear Plastic Bottle - Natural (EK071G)							
18, 19	**27-Jun-2016**	**----**	----	----	**12-Jul-2016**	29-Jun-2016	✘
Clear Plastic Bottle - Natural (EK071G)							
DUP3, TRIP2, 21, 22	**28-Jun-2016**	**----**	----	----	**12-Jul-2016**	30-Jun-2016	✘
Clear Plastic Bottle - Natural (EK071G)							
20	**29-Jun-2016**	**----**	----	----	**12-Jul-2016**	01-Jul-2016	✘

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
EP008: Chlorophyll a & Pheophytin a							
Glass Fibre Filter Paper (Chlorophyll) (EP008) 23-b, 24-b	**02-Jul-2016**	**----**	----	----	**13-Jul-2016**	23-Jul-2016	✓
Glass Fibre Filter Paper (Chlorophyll) (EP008) DUP4, 16, 17	**03-Jul-2016**	**----**	----	----	**13-Jul-2016**	24-Jul-2016	✓
Glass Fibre Filter Paper (Chlorophyll) (EP008) M25-S, M25-M, M25-D	**04-Jul-2016**	**----**	----	----	**13-Jul-2016**	25-Jul-2016	✓
Glass Fibre Filter Paper (Chlorophyll) (EP008) DUP5, M31-S, M31-M, M31-D, M37-S, M37-M, M37-D	**05-Jul-2016**	**----**	----	----	**13-Jul-2016**	26-Jul-2016	✓
Glass Fibre Filter Paper (Chlorophyll) (EP008) M43-S, M43-M, M43-D, M13-S, M13-M, M13-D	**06-Jul-2016**	**----**	----	----	**13-Jul-2016**	27-Jul-2016	✓
Glass Fibre Filter Paper (Chlorophyll) (EP008) 28, 29, TRIP3, M19-S, M19-D, M17-S, M17-D, M21-S, M21-D, M22-S, M22-D	**07-Jul-2016**	**----**	----	----	**13-Jul-2016**	28-Jul-2016	✓
Glass Fibre Filter Paper (Chlorophyll) (EP008) M2-S, M2-D, M3-S, M3-M, M3-D, M4-S, M4-M, M4-D, M11-S, M11-M, M11-D, M12-S, M12-M, M12-D, M6-S, M6-D, M9-S, M9-M, M9-D, M10-S, M10-D	**25-Jun-2016**	**----**	----	----	**13-Jul-2016**	16-Jul-2016	✓
Glass Fibre Filter Paper (Chlorophyll) (EP008) M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M7-D, M8-S, M8-D	**26-Jun-2016**	**----**	----	----	**13-Jul-2016**	17-Jul-2016	✓

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
EP008: Chlorophyll a & Pheophytin a - Continued							
Glass Fibre Filter Paper (Chlorophyll) (EP008)							
18, 19	**27-Jun-2016**	**----**	----	----	**13-Jul-2016**	18-Jul-2016	✓
Glass Fibre Filter Paper (Chlorophyll) (EP008)							
DUP3, TRIP2, 21, 22	**28-Jun-2016**	**----**	----	----	**13-Jul-2016**	19-Jul-2016	✓
Glass Fibre Filter Paper (Chlorophyll) (EP008)							
20	**29-Jun-2016**	**----**	----	----	**13-Jul-2016**	20-Jul-2016	✓

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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
DUP4, 16, 17	**03-Jul-2016**	**12-Jul-2016**	10-Jul-2016	×	**15-Jul-2016**	21-Aug-2016	✓
Amber Glass Bottle - Unpreserved (EP075(SIM))							
M25-S, M25-M, M25-D	**04-Jul-2016**	**12-Jul-2016**	11-Jul-2016	×	**15-Jul-2016**	21-Aug-2016	✓
Amber Glass Bottle - Unpreserved (EP075(SIM))							
DUP5, M31-S, M31-M, M31-D, M37-S, M37-M, M37-D	**05-Jul-2016**	**12-Jul-2016**	12-Jul-2016	✓	**15-Jul-2016**	21-Aug-2016	✓
Amber Glass Bottle - Unpreserved (EP075(SIM))							
M43-S, M43-M, M43-D, M13-S, M13-M, M13-D	**06-Jul-2016**	**12-Jul-2016**	13-Jul-2016	✓	**15-Jul-2016**	21-Aug-2016	✓
Amber Glass Bottle - Unpreserved (EP075(SIM))							
28, 29, TRIP3, M19-S, M19-D, M17-S, M17-D, M21-S, M21-D, M22-S, M22-D, Rinsate	**07-Jul-2016**	**12-Jul-2016**	14-Jul-2016	✓	**15-Jul-2016**	21-Aug-2016	✓
Amber Glass Bottle - Unpreserved (EP075(SIM))							
M2-D, M3-S, M3-M, M3-D, M4-S, M4-M, M4-D, M11-S, M11-M, M11-D, M12-S, M12-M, M12-D, M6-S, M6-D, M9-S, M9-M, M9-D, M10-S, M10-D	**25-Jun-2016**	**12-Jul-2016**	02-Jul-2016	×	**15-Jul-2016**	21-Aug-2016	✓
Amber Glass Bottle - Unpreserved (EP075(SIM))							
M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M8-S, M8-D	**26-Jun-2016**	**12-Jul-2016**	03-Jul-2016	×	**15-Jul-2016**	21-Aug-2016	✓
Amber Glass Bottle - Unpreserved (EP075(SIM))							
18, 19	**27-Jun-2016**	**12-Jul-2016**	04-Jul-2016	×	**15-Jul-2016**	21-Aug-2016	✓
Amber Glass Bottle - Unpreserved (EP075(SIM))							
TRIP2	**28-Jun-2016**	**12-Jul-2016**	05-Jul-2016	×	**15-Jul-2016**	21-Aug-2016	✓

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
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
DUP4, 16, 17	**03-Jul-2016**	**12-Jul-2016**	10-Jul-2016	×	**15-Jul-2016**	21-Aug-2016	✓
Amber Glass Bottle - Unpreserved (EP071)							
M25-S, M25-M, M25-D	**04-Jul-2016**	**12-Jul-2016**	11-Jul-2016	×	**15-Jul-2016**	21-Aug-2016	✓
Amber Glass Bottle - Unpreserved (EP071)							
DUP5, M31-S, M31-M, M31-D, M37-S, M37-M, M37-D	**05-Jul-2016**	**12-Jul-2016**	12-Jul-2016	✓	**15-Jul-2016**	21-Aug-2016	✓
Amber Glass Bottle - Unpreserved (EP071)							
M43-S, M43-M, M43-D, M13-S, M13-M, M13-D	**06-Jul-2016**	**12-Jul-2016**	13-Jul-2016	✓	**15-Jul-2016**	21-Aug-2016	✓
Amber Glass Bottle - Unpreserved (EP071)							
28, 29, TRIP3, M19-S, M19-D, M17-S, M17-D, M21-S, M21-D, M22-S, M22-D, Rinsate	**07-Jul-2016**	**12-Jul-2016**	14-Jul-2016	✓	**15-Jul-2016**	21-Aug-2016	✓
Amber Glass Bottle - Unpreserved (EP071)							
M2-D, M3-S, M3-M, M3-D, M4-S, M4-M, M4-D, M11-S, M11-M, M11-D, M12-S, M12-M, M12-D, M6-S, M6-D, M9-S, M9-M, M9-D, M10-S, M10-D	**25-Jun-2016**	**12-Jul-2016**	02-Jul-2016	×	**15-Jul-2016**	21-Aug-2016	✓
Amber Glass Bottle - Unpreserved (EP071)							
M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M8-S, M8-D	**26-Jun-2016**	**12-Jul-2016**	03-Jul-2016	×	**15-Jul-2016**	21-Aug-2016	✓
Amber Glass Bottle - Unpreserved (EP071-SV)							
18, 19	**27-Jun-2016**	**12-Jul-2016**	04-Jul-2016	×	**15-Jul-2016**	21-Aug-2016	✓
Amber Glass Bottle - Unpreserved (EP071)							
TRIP2	**28-Jun-2016**	**12-Jul-2016**	05-Jul-2016	×	**15-Jul-2016**	21-Aug-2016	✓

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
EP080/071: Total Petroleum Hydrocarbons - Continued							
Amber VOC Vial - Sulfuric Acid (EP080) 24-b	**02-Jul-2016**	**13-Jul-2016**	16-Jul-2016	✓	**13-Jul-2016**	16-Jul-2016	✓
Amber VOC Vial - Sulfuric Acid (EP080) DUP4, 16, 17	**03-Jul-2016**	**13-Jul-2016**	17-Jul-2016	✓	**13-Jul-2016**	17-Jul-2016	✓
Amber VOC Vial - Sulfuric Acid (EP080) M25-S, M25-M, M25-D	**04-Jul-2016**	**13-Jul-2016**	18-Jul-2016	✓	**13-Jul-2016**	18-Jul-2016	✓
Amber VOC Vial - Sulfuric Acid (EP080) DUP5, M31-S, M31-M, M31-D, M37-S, M37-M, M37-D	**05-Jul-2016**	**13-Jul-2016**	19-Jul-2016	✓	**13-Jul-2016**	19-Jul-2016	✓
Amber VOC Vial - Sulfuric Acid (EP080) M43-S, M43-M, M43-D, M13-S, M13-M, M13-D	**06-Jul-2016**	**13-Jul-2016**	20-Jul-2016	✓	**13-Jul-2016**	20-Jul-2016	✓
Amber VOC Vial - Sulfuric Acid (EP080) 28, 29, TRIP3, M19-S, M19-D, M17-S, M17-D, M21-S, M21-D, M22-S, M22-D, Rinsate	**07-Jul-2016**	**13-Jul-2016**	21-Jul-2016	✓	**13-Jul-2016**	21-Jul-2016	✓
Amber VOC Vial - Sulfuric Acid (EP080) TRIP BLANK 1	**19-Jan-2016**	**13-Jul-2016**	02-Feb-2016	×	**13-Jul-2016**	02-Feb-2016	×
Amber VOC Vial - Sulfuric Acid (EP080) M2-S, M2-D, M3-S, M3-M, M3-D, M4-S, M4-M, M4-D, M11-S, M11-M, M11-D, M12-S, M12-M, M12-D, M6-S, M6-D, M9-S, M9-M, M9-D, M10-S, M10-D	**25-Jun-2016**	**13-Jul-2016**	09-Jul-2016	×	**13-Jul-2016**	09-Jul-2016	×
Amber VOC Vial - Sulfuric Acid (EP080)							

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
EP080/071: Total Petroleum Hydrocarbons - Continued							
M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M7-D, M8-S, M8-D	**26-Jun-2016**	**13-Jul-2016**	10-Jul-2016	×	**13-Jul-2016**	10-Jul-2016	×
Amber VOC Vial - Sulfuric Acid (EP080) 18	**27-Jun-2016**	**13-Jul-2016**	11-Jul-2016	×	**13-Jul-2016**	11-Jul-2016	×
Amber VOC Vial - Sulfuric Acid (EP080) TRIP2, 21	**28-Jun-2016**	**13-Jul-2016**	12-Jul-2016	×	**13-Jul-2016**	12-Jul-2016	×
Amber VOC Vial - Sulfuric Acid (EP080) 20	**29-Jun-2016**	**13-Jul-2016**	13-Jul-2016	✓	**13-Jul-2016**	13-Jul-2016	✓

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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
DUP4, 16, 17	**03-Jul-2016**	**12-Jul-2016**	10-Jul-2016	×	**15-Jul-2016**	21-Aug-2016	✓
Amber Glass Bottle - Unpreserved (EP071)							
M25-S, M25-M, M25-D	**04-Jul-2016**	**12-Jul-2016**	11-Jul-2016	×	**15-Jul-2016**	21-Aug-2016	✓
Amber Glass Bottle - Unpreserved (EP071)							
DUP5, M31-S, M31-M, M31-D, M37-S, M37-M, M37-D	**05-Jul-2016**	**12-Jul-2016**	12-Jul-2016	✓	**15-Jul-2016**	21-Aug-2016	✓
Amber Glass Bottle - Unpreserved (EP071)							
M43-S, M43-M, M43-D, M13-S, M13-M, M13-D	**06-Jul-2016**	**12-Jul-2016**	13-Jul-2016	✓	**15-Jul-2016**	21-Aug-2016	✓
Amber Glass Bottle - Unpreserved (EP071)							
28, 29, TRIP3, M19-S, M19-D, M17-S, M17-D, M21-S, M21-D, M22-S, M22-D, Rinsate	**07-Jul-2016**	**12-Jul-2016**	14-Jul-2016	✓	**15-Jul-2016**	21-Aug-2016	✓
Amber Glass Bottle - Unpreserved (EP071)							
M2-D, M3-S, M3-M, M3-D, M4-S, M4-M, M4-D, M11-S, M11-M, M11-D, M12-S, M12-M, M12-D, M6-S, M6-D, M9-S, M9-M, M9-D, M10-S, M10-D	**25-Jun-2016**	**12-Jul-2016**	02-Jul-2016	×	**15-Jul-2016**	21-Aug-2016	✓
Amber Glass Bottle - Unpreserved (EP071)							
M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M8-S, M8-D	**26-Jun-2016**	**12-Jul-2016**	03-Jul-2016	×	**15-Jul-2016**	21-Aug-2016	✓
Amber Glass Bottle - Unpreserved (EP071-SV)							
18, 19	**27-Jun-2016**	**12-Jul-2016**	04-Jul-2016	×	**15-Jul-2016**	21-Aug-2016	✓
Amber Glass Bottle - Unpreserved (EP071)							
TRIP2	**28-Jun-2016**	**12-Jul-2016**	05-Jul-2016	×	**15-Jul-2016**	21-Aug-2016	✓

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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued							
Amber VOC Vial - Sulfuric Acid (EP080)							
24-b	**02-Jul-2016**	**13-Jul-2016**	16-Jul-2016	✓	**13-Jul-2016**	16-Jul-2016	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
DUP4, 16, 17	**03-Jul-2016**	**13-Jul-2016**	17-Jul-2016	✓	**13-Jul-2016**	17-Jul-2016	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
M25-S, M25-M, M25-D	**04-Jul-2016**	**13-Jul-2016**	18-Jul-2016	✓	**13-Jul-2016**	18-Jul-2016	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
DUP5, M31-S, M31-M, M31-D, M37-S, M37-M, M37-D	**05-Jul-2016**	**13-Jul-2016**	19-Jul-2016	✓	**13-Jul-2016**	19-Jul-2016	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
M43-S, M43-M, M43-D, M13-S, M13-M, M13-D	**06-Jul-2016**	**13-Jul-2016**	20-Jul-2016	✓	**13-Jul-2016**	20-Jul-2016	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
28, 29, TRIP3, M19-S, M19-D, M17-S, M17-D, M21-S, M21-D, M22-S, M22-D, Rinsate	**07-Jul-2016**	**13-Jul-2016**	21-Jul-2016	✓	**13-Jul-2016**	21-Jul-2016	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
TRIP BLANK 1	**19-Jan-2016**	**13-Jul-2016**	02-Feb-2016	×	**13-Jul-2016**	02-Feb-2016	×
Amber VOC Vial - Sulfuric Acid (EP080)							
M2-S, M2-D, M3-S, M3-M, M3-D, M4-S, M4-M, M4-D, M11-S, M11-M, M11-D, M12-S, M12-M, M12-D, M6-S, M6-D, M9-S, M9-M, M9-D, M10-S, M10-D	**25-Jun-2016**	**13-Jul-2016**	09-Jul-2016	×	**13-Jul-2016**	09-Jul-2016	×
Amber VOC Vial - Sulfuric Acid (EP080)							

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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued							
M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M7-D, M8-S, M8-D	**26-Jun-2016**	**13-Jul-2016**	10-Jul-2016	×	**13-Jul-2016**	10-Jul-2016	×
Amber VOC Vial - Sulfuric Acid (EP080) 18	**27-Jun-2016**	**13-Jul-2016**	11-Jul-2016	×	**13-Jul-2016**	11-Jul-2016	×
Amber VOC Vial - Sulfuric Acid (EP080) TRIP2, 21	**28-Jun-2016**	**13-Jul-2016**	12-Jul-2016	×	**13-Jul-2016**	12-Jul-2016	×
Amber VOC Vial - Sulfuric Acid (EP080) 20	**29-Jun-2016**	**13-Jul-2016**	13-Jul-2016	✓	**13-Jul-2016**	13-Jul-2016	✓

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
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
24-b	**02-Jul-2016**	**13-Jul-2016**	16-Jul-2016	✓	**13-Jul-2016**	16-Jul-2016	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
DUP4, 16, 17	**03-Jul-2016**	**13-Jul-2016**	17-Jul-2016	✓	**13-Jul-2016**	17-Jul-2016	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
M25-S, M25-M, M25-D	**04-Jul-2016**	**13-Jul-2016**	18-Jul-2016	✓	**13-Jul-2016**	18-Jul-2016	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
DUP5, M31-S, M31-M, M31-D, M37-S, M37-M, M37-D	**05-Jul-2016**	**13-Jul-2016**	19-Jul-2016	✓	**13-Jul-2016**	19-Jul-2016	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
M43-S, M43-M, M43-D, M13-S, M13-M, M13-D	**06-Jul-2016**	**13-Jul-2016**	20-Jul-2016	✓	**13-Jul-2016**	20-Jul-2016	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
28, 29, TRIP3, M19-S, M19-D, M17-S, M17-D, M21-S, M21-D, M22-S, M22-D, Rinsate	**07-Jul-2016**	**13-Jul-2016**	21-Jul-2016	✓	**13-Jul-2016**	21-Jul-2016	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
TRIP BLANK 1	**19-Jan-2016**	**13-Jul-2016**	02-Feb-2016	×	**13-Jul-2016**	02-Feb-2016	×
Amber VOC Vial - Sulfuric Acid (EP080)							
M2-S, M2-D, M3-S, M3-M, M3-D, M4-S, M4-M, M4-D, M11-S, M11-M, M11-D, M12-S, M12-M, M12-D, M6-S, M6-D, M9-S, M9-M, M9-D, M10-S, M10-D	**25-Jun-2016**	**13-Jul-2016**	09-Jul-2016	×	**13-Jul-2016**	09-Jul-2016	×
Amber VOC Vial - Sulfuric Acid (EP080)							

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
EP080: BTEXN - Continued							
M1-S, M1-D, M5-S, M5-D, DUP1, DUP2, TRIP1, M7-S, M7-D, M8-S, M8-D	**26-Jun-2016**	**13-Jul-2016**	10-Jul-2016	×	**13-Jul-2016**	10-Jul-2016	×
Amber VOC Vial - Sulfuric Acid (EP080) 18	**27-Jun-2016**	**13-Jul-2016**	11-Jul-2016	×	**13-Jul-2016**	11-Jul-2016	×
Amber VOC Vial - Sulfuric Acid (EP080) TRIP2, 21	**28-Jun-2016**	**13-Jul-2016**	12-Jul-2016	×	**13-Jul-2016**	12-Jul-2016	×
Amber VOC Vial - Sulfuric Acid (EP080) 20	**29-Jun-2016**	**13-Jul-2016**	13-Jul-2016	✓	**13-Jul-2016**	13-Jul-2016	✓

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		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Ammonia as N by Discrete analyser	EK055G	8	75	**10.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	8	72	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Fresh Water -Suite A by ORC-ICPMS	EG094A-F	2	9	**22.22**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Fresh Water -Suite B by ORC-ICPMS	EG094B-F	2	9	**22.22**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Saline Water -Suite A by ORC-ICPMS	EG093A-F	6	63	**9.52**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Saline Water -Suite B by ORC-ICPMS	EG093B-F	5	63	**7.94**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	8	72	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	8	71	**11.27**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	64	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	8	71	**11.27**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids	EA025	8	71	**11.27**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	8	79	**10.13**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	8	72	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Fresh Water -Suite A by ORC-ICPMS	EG094A-T	2	9	**22.22**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Fresh Water -Suite B by ORC-ICPMS	EG094B-T	2	9	**22.22**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Saline Water Suite A by ORC-ICPMS	EG093A-T	7	63	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Saline Water -Suite B by ORC-ICPMS	EG093B-T	7	63	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	8	80	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	63	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only	EP071-SV	0	1	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	8	69	**11.59**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Ammonia as N by Discrete analyser	EK055G	4	75	**5.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chlorophyll a and Pheophytin a	EP008	4	71	**5.63**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	4	72	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Fresh Water -Suite A by ORC-ICPMS	EG094A-F	2	9	**22.22**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Fresh Water -Suite B by ORC-ICPMS	EG094B-F	2	9	**22.22**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Saline Water -Suite A by ORC-ICPMS	EG093A-F	4	63	**6.35**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Saline Water -Suite B by ORC-ICPMS	EG093B-F	4	63	**6.35**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	4	72	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	4	71	**5.63**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	4	64	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	4	71	**5.63**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids	EA025	8	71	**11.27**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	4	79	**5.06**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	72	**5.56**	**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		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Total Metals in Fresh Water -Suite A by ORC-ICPMS	EG094A-T	2	9	**22.22**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Fresh Water -Suite B by ORC-ICPMS	EG094B-T	2	9	**22.22**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Saline Water Suite A by ORC-ICPMS	EG093A-T	4	63	**6.35**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Saline Water -Suite B by ORC-ICPMS	EG093B-T	4	63	**6.35**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	4	80	**5.00**	**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 - Semivolatile Fractions Only	EP071-SV	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	5	69	**7.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	4	75	**5.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chlorophyll a and Pheophytin a	EP008	4	71	**5.63**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	4	72	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Fresh Water -Suite A by ORC-ICPMS	EG094A-F	2	9	**22.22**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Fresh Water -Suite B by ORC-ICPMS	EG094B-F	2	9	**22.22**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Saline Water -Suite A by ORC-ICPMS	EG093A-F	4	63	**6.35**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Saline Water -Suite B by ORC-ICPMS	EG093B-F	4	63	**6.35**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	4	72	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	4	71	**5.63**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	4	64	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	4	71	**5.63**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids	EA025	4	71	**5.63**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	4	79	**5.06**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	72	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Fresh Water -Suite A by ORC-ICPMS	EG094A-T	2	9	**22.22**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Fresh Water -Suite B by ORC-ICPMS	EG094B-T	2	9	**22.22**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Saline Water Suite A by ORC-ICPMS	EG093A-T	4	63	**6.35**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Saline Water -Suite B by ORC-ICPMS	EG093B-T	4	63	**6.35**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	4	80	**5.00**	**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 - Semivolatile Fractions Only	EP071-SV	1	1	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	5	69	**7.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	4	75	**5.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	4	72	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Fresh Water -Suite A by ORC-ICPMS	EG094A-F	2	9	**22.22**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Saline Water -Suite A by ORC-ICPMS	EG093A-F	3	63	**4.76**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	4	72	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	4	71	**5.63**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	64	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	4	71	**5.63**	**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		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	4	79	**5.06**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	72	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Fresh Water -Suite A by ORC-ICPMS	EG094A-T	2	9	**22.22**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Saline Water Suite A by ORC-ICPMS	EG093A-T	4	63	**6.35**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	4	80	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	63	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fractions Only	EP071-SV	0	1	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	5	69	**7.25**	**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
Suspended Solids	EA025	WATER	In house: Referenced to APHA 2540D. A gravimetric procedure employed to determine the amount of `non-filterable` residue in a aqueous sample. The prescribed GFC (1.2um) filter is rinsed with deionised water, oven dried and weighed prior to analysis. A well-mixed sample is filtered through a glass fibre filter (1.2um). The residue on the filter paper is dried at 104+/-2C . This method is compliant with NEPM (2013) Schedule B(3)
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(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 SnCl2 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 (SnCl2)(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 SnCl2 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)
Dissolved Metals in Saline Water -Suite A by ORC-ICPMS	EG093A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020 Samples are 0.45µm filtered prior to analysis. The ORC-ICPMS technique removes interfering species through a series of chemical reactions prior to ion detection. Ions are passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to measurement by a discrete dynode ion detector. This method is compliant with NEPM (2013) Schedule B(3)
Total Metals in Saline Water Suite A by ORC-ICPMS	EG093A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020. The ORC-ICPMS technique removes interfering species through a series of chemical reactions prior to ion detection. Ions are passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to measurement by a discrete dynode ion detector. This method is compliant with NEPM (2013) Schedule B(3)
Dissolved Metals in Saline Water -Suite B by ORC-ICPMS	EG093B-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020 Samples are 0.45µm filtered prior to analysis. The ORC-ICPMS technique removes interfering species through a series of chemical reactions prior to ion detection. Ions are passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to measurement by a discrete dynode ion detector. This method is compliant with NEPM (2013) Schedule B(3)
Total Metals in Saline Water -Suite B by ORC-ICPMS	EG093B-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020. The ORC-ICPMS technique removes interfering species through a series of chemical reactions prior to ion detection. Ions are passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to measurement by a discrete dynode ion detector. This method is compliant with NEPM (2013) Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Metals in Fresh Water -Suite A by ORC-ICPMS	EG094A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020 Samples are 0.45µm filtered prior to analysis. The ORC-ICPMS technique removes interfering species through a series of chemical reactions prior to ion detection. Ions are passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to measurement by a discrete dynode ion detector. This method is compliant with NEPM (2013) Schedule B(3)
Total Metals in Fresh Water -Suite A by ORC-ICPMS	EG094A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020. The ORC-ICPMS technique removes interfering species through a series of chemical reactions prior to ion detection. Ions are passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to measurement by a discrete dynode ion detector. This method is compliant with NEPM (2013) Schedule B(3)
Dissolved Metals in Fresh Water -Suite B by ORC-ICPMS	EG094B-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020 Samples are 0.45µm filtered prior to analysis. The ORC-ICPMS technique removes interfering species through a series of chemical reactions prior to ion detection. Ions are passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to measurement by a discrete dynode ion detector. This method is compliant with NEPM (2013) Schedule B(3)
Total Metals in Fresh Water -Suite B by ORC-ICPMS	EG094B-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020. The ORC-ICPMS technique removes interfering species through a series of chemical reactions prior to ion detection. Ions are passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to measurement by a discrete dynode ion detector. 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 seperately 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 (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM (2013) Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM (2013) Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al (1976), Zhang et al (2006). This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM (2013) Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
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 othophosphate 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)
Chlorophyll a and Pheophytin a	EP008	WATER	In house: Referenced to APHA 10200 H. The pigments are extracted into aqueous acetone. The optical density of the extract before and after acidification at both 664 nm and 665 nm is determined spectrometrically.
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)
TRH - Semivolatile Fractions Only	EP071-SV	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 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)
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)

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM (2013) Schedule B(3)
Digestion for Total Recoverable Metals - ORC	EN25-ORC	WATER	In house: Referenced to USEPA SW846-3005. This is an Ultrapure Nitric acid digestion procedure used to prepare surface and ground water samples for analysis by ORC- 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.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1617705**	Page	: 1 of 27
Client	: **BMT WBM GROUP LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR JEREMY VISSER	Contact	: John Pickering
Address	: PO BOX 203 SPRING HILL BRISBANE QLD 4004	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +61 07 3831 6744	Telephone	: +61 7 3552 8634
Project	: B21414 Elk	Date Samples Received	: 11-Jul-2016 12:05
Order number	: ----	Date Analysis Commenced	: 11-Jul-2016
C-O-C number	: ----	Issue Date	: 27-Jul-2016 14:54
Sampler	: CONOR JONES, DANIEL MORAN		
Site	: ----		
Quote number	: ----		
No. of samples received	: 31		
No. of samples analysed	: 27		

NATA Accredited Laboratory 825
Accredited for compliance with ISO/IEC 17025.

NATA
WORLD RECOGNISED ACCREDITATION

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

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.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Matt Frost	Senior Organic Chemist	Brisbane Organics, Stafford, QLD
Satishkumar Trivedi	Acid Sulfate Soils Supervisor	Brisbane Acid Sulphate Soils, Stafford, QLD

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 sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

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.

- EP071: The LOR's for particular samples have been raised due to high moisture content.
- EG020T (Total Metals): Some Method Blanks are above LOR but are not considered significant compared to analyte levels in the samples.
- EP080: Sample EB1617705_022 shows poor matrix spike recovery due to high moisture content.
- EP075(SIM): High LCS recovery deemed acceptable as all associated analyte results are less than LOR
- 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, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	M6	M3	M9	M10	M4
				Client sampling date / time	25-Jun-2016 08:40	25-Jun-2016 10:40	25-Jun-2016 12:08	25-Jun-2016 13:00	25-Jun-2016 14:00
Compound	CAS Number	LOR	Unit		EB1617705-001	EB1617705-002	EB1617705-003	EB1617705-004	EB1617705-005
					Result	Result	Result	Result	Result
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1	%		48.2	64.2	66.6	61.8	66.1
EA150: Particle Sizing									
+75µm	----	1	%		<1	2	3	3	<1
+150µm	----	1	%		<1	<1	1	<1	<1
+300µm	----	1	%		<1	<1	<1	<1	<1
+425µm	----	1	%		<1	<1	<1	<1	<1
+600µm	----	1	%		<1	<1	<1	<1	<1
+1180µm	----	1	%		<1	<1	<1	<1	<1
+2.36mm	----	1	%		<1	<1	<1	<1	<1
+4.75mm	----	1	%		<1	<1	<1	<1	<1
+9.5mm	----	1	%		<1	<1	<1	<1	<1
+19.0mm	----	1	%		<1	<1	<1	<1	<1
+37.5mm	----	1	%		<1	<1	<1	<1	<1
+75.0mm	----	1	%		<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size									
Clay (<2 µm)	----	1	%		27	39	42	33	45
Silt (2-60 µm)	----	1	%		71	56	53	61	52
Sand (0.06-2.00 mm)	----	1	%		2	5	5	6	3
Gravel (>2mm)	----	1	%		<1	<1	<1	<1	<1
Cobbles (>6cm)	----	1	%		<1	<1	<1	<1	<1
EA152: Soil Particle Density									
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3		2.66	2.66	2.60	2.67	2.58
EG005T: Total Metals by ICP-AES									
Aluminium	7429-90-5	50	mg/kg		34400	37900	40600	40000	39400
Arsenic	7440-38-2	5	mg/kg		10	10	11	11	14
Barium	7440-39-3	10	mg/kg		20	10	10	20	20
Iron	7439-89-6	50	mg/kg		54300	55800	55600	57800	56200
Strontium	7440-24-6	2	mg/kg		35	50	52	53	51
Tin	7440-31-5	5	mg/kg		<5	<5	<5	<5	<5
EG020T: Total Metals by ICP-MS									
Selenium	7782-49-2	1	mg/kg		<1	<1	<1	<1	<1
Silver	7440-22-4	0.1	mg/kg		0.1	0.6	0.6	0.2	0.4
Thallium	7440-28-0	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
Beryllium	7440-41-7	0.1	mg/kg		0.6	0.7	0.8	0.7	0.7

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	M6	M3	M9	M10	M4
				Client sampling date / time	25-Jun-2016 08:40	25-Jun-2016 10:40	25-Jun-2016 12:08	25-Jun-2016 13:00	25-Jun-2016 14:00
Compound	CAS Number	LOR	Unit		EB1617705-001	EB1617705-002	EB1617705-003	EB1617705-004	EB1617705-005
					Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued									
Cadmium	7440-43-9	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
Cobalt	7440-48-4	0.1	mg/kg		21.8	21.5	21.3	23.5	21.8
Chromium	7440-47-3	0.1	mg/kg		63.7	67.7	64.4	71.0	68.6
Copper	7440-50-8	0.1	mg/kg		39.4	61.5	64.6	59.3	60.8
Manganese	7439-96-5	0.1	mg/kg		708	708	736	817	869
Molybdenum	7439-98-7	0.1	mg/kg		0.3	0.6	0.5	0.6	0.5
Nickel	7440-02-0	0.1	mg/kg		47.6	51.2	49.6	51.5	51.6
Lead	7439-92-1	0.1	mg/kg		8.4	11.2	11.8	10.5	11.2
Antimony	7440-36-0	0.1	mg/kg		<0.1	0.1	0.1	<0.1	<0.1
Zinc	7440-66-6	0.5	mg/kg		87.9	95.6	95.7	92.2	94.6
Vanadium	7440-62-2	1	mg/kg		100	108	108	112	112
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	0.1
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	20	mg/kg		930	1840	1940	1810	1810
EK062: Total Nitrogen as N (TKN + NOx)									
^ Total Nitrogen as N	----	20	mg/kg		930	1840	1940	1810	1810
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	2	mg/kg		580	608	661	683	619
EP004: Organic Matter									
Organic Matter	----	0.5	%		3.1	7.2	5.9	6.2	5.8
Total Organic Carbon	----	0.5	%		1.8	4.2	3.4	3.6	3.4
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	M6	M3	M9	M10	M4
				Client sampling date / time	25-Jun-2016 08:40	25-Jun-2016 10:40	25-Jun-2016 12:08	25-Jun-2016 13:00	25-Jun-2016 14:00
Compound	CAS Number	LOR	Unit		EB1617705-001	EB1617705-002	EB1617705-003	EB1617705-004	EB1617705-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	M6	M3	M9	M10	M4
				Client sampling date / time	25-Jun-2016 08:40	25-Jun-2016 10:40	25-Jun-2016 12:08	25-Jun-2016 13:00	25-Jun-2016 14:00
Compound	CAS Number	LOR	Unit		EB1617705-001	EB1617705-002	EB1617705-003	EB1617705-004	EB1617705-005
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	1330-20-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**113**	**98.9**	**112**	**116**	**156**
Anthracene-d10	1719-06-8	0.5	%		**84.1**	**71.0**	**84.5**	**85.7**	**120**
4-Terphenyl-d14	1718-51-0	0.5	%		**109**	**94.1**	**107**	**108**	**155**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**99.7**	**87.1**	**79.6**	**85.3**	**83.2**
Toluene-D8	2037-26-5	0.2	%		**97.9**	**83.8**	**78.2**	**88.0**	**84.5**
4-Bromofluorobenzene	460-00-4	0.2	%		**115**	**96.6**	**96.8**	**102**	**95.4**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	M12	M11	M2	M8	M5
				Client sampling date / time	25-Jun-2016 14:55	25-Jun-2016 15:55	25-Jun-2016 16:45	26-Jun-2016 08:40	26-Jun-2016 10:45
Compound	CAS Number	LOR	Unit		EB1617705-006	EB1617705-007	EB1617705-008	EB1617705-009	EB1617705-010
					Result	Result	Result	Result	Result
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1	%		62.2	63.1	62.2	44.6	42.9
EA150: Particle Sizing									
+75µm	----	1	%		<1	<1	<1	2	2
+150µm	----	1	%		<1	<1	<1	<1	<1
+300µm	----	1	%		<1	<1	<1	<1	<1
+425µm	----	1	%		<1	<1	<1	<1	<1
+600µm	----	1	%		<1	<1	<1	<1	<1
+1180µm	----	1	%		<1	<1	<1	<1	<1
+2.36mm	----	1	%		<1	<1	<1	<1	<1
+4.75mm	----	1	%		<1	<1	<1	<1	<1
+9.5mm	----	1	%		<1	<1	<1	<1	<1
+19.0mm	----	1	%		<1	<1	<1	<1	<1
+37.5mm	----	1	%		<1	<1	<1	<1	<1
+75.0mm	----	1	%		<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size									
Clay (<2 µm)	----	1	%		49	39	45	27	21
Silt (2-60 µm)	----	1	%		49	58	52	64	73
Sand (0.06-2.00 mm)	----	1	%		2	3	3	9	6
Gravel (>2mm)	----	1	%		<1	<1	<1	<1	<1
Cobbles (>6cm)	----	1	%		<1	<1	<1	<1	<1
EA152: Soil Particle Density									
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3		2.76	2.91	2.72	2.88	2.67
EG005T: Total Metals by ICP-AES									
Aluminium	7429-90-5	50	mg/kg		39800	35800	35300	30500	30100
Arsenic	7440-38-2	5	mg/kg		12	12	11	6	6
Barium	7440-39-3	10	mg/kg		20	20	10	10	10
Iron	7439-89-6	50	mg/kg		59000	55600	54200	48700	48100
Strontium	7440-24-6	2	mg/kg		55	60	53	32	28
Tin	7440-31-5	5	mg/kg		<5	<5	<5	<5	<5
EG020T: Total Metals by ICP-MS									
Selenium	7782-49-2	1	mg/kg		<1	<1	<1	<1	<1
Silver	7440-22-4	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
Thallium	7440-28-0	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
Beryllium	7440-41-7	0.1	mg/kg		0.8	0.7	0.7	0.5	0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	M12	M11	M2	M8	M5
				Client sampling date / time	25-Jun-2016 14:55	25-Jun-2016 15:55	25-Jun-2016 16:45	26-Jun-2016 08:40	26-Jun-2016 10:45
Compound	CAS Number	LOR	Unit		EB1617705-006	EB1617705-007	EB1617705-008	EB1617705-009	EB1617705-010
					Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued									
Cadmium	7440-43-9	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
Cobalt	7440-48-4	0.1	mg/kg		21.6	19.9	19.2	19.9	19.7
Chromium	7440-47-3	0.1	mg/kg		63.0	54.7	53.5	57.6	57.6
Copper	7440-50-8	0.1	mg/kg		53.3	54.9	51.9	37.0	36.4
Manganese	7439-96-5	0.1	mg/kg		810	1080	640	658	661
Molybdenum	7439-98-7	0.1	mg/kg		0.4	0.4	0.4	0.2	0.3
Nickel	7440-02-0	0.1	mg/kg		50.8	46.0	45.5	42.6	41.3
Lead	7439-92-1	0.1	mg/kg		11.5	11.1	10.7	7.8	7.3
Antimony	7440-36-0	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
Zinc	7440-66-6	0.5	mg/kg		99.7	95.1	93.2	79.4	79.1
Vanadium	7440-62-2	1	mg/kg		108	100	94	90	89
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg		0.1	<0.1	<0.1	<0.1	0.1
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	20	mg/kg		1420	1610	1590	850	870
EK062: Total Nitrogen as N (TKN + NOx)									
^ Total Nitrogen as N	----	20	mg/kg		1420	1610	1590	850	870
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	2	mg/kg		714	773	744	583	564
EP004: Organic Matter									
Organic Matter	----	0.5	%		3.9	3.9	3.6	2.4	2.5
Total Organic Carbon	----	0.5	%		2.3	2.2	2.1	1.4	1.4
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	M12	M11	M2	M8	M5
				Client sampling date / time	25-Jun-2016 14:55	25-Jun-2016 15:55	25-Jun-2016 16:45	26-Jun-2016 08:40	26-Jun-2016 10:45
Compound	CAS Number	LOR	Unit		EB1617705-006	EB1617705-007	EB1617705-008	EB1617705-009	EB1617705-010
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	M12	M11	M2	M8	M5
				Client sampling date / time	25-Jun-2016 14:55	25-Jun-2016 15:55	25-Jun-2016 16:45	26-Jun-2016 08:40	26-Jun-2016 10:45
Compound	CAS Number	LOR	Unit		EB1617705-006	EB1617705-007	EB1617705-008	EB1617705-009	EB1617705-010
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	1330-20-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**119**	**134**	**128**	**114**	**118**
Anthracene-d10	1719-06-8	0.5	%		**86.4**	**101**	**82.9**	**82.0**	**86.6**
4-Terphenyl-d14	1718-51-0	0.5	%		**116**	**129**	**115**	**114**	**111**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**92.1**	**94.4**	**88.2**	**93.2**	**94.9**
Toluene-D8	2037-26-5	0.2	%		**87.4**	**93.4**	**89.7**	**93.0**	**94.0**
4-Bromofluorobenzene	460-00-4	0.2	%		**104**	**109**	**107**	**110**	**110**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	M1	M7	18	19	21
				Client sampling date / time	26-Jun-2016 12:00	26-Jun-2016 13:15	27-Jun-2016 09:00	27-Jun-2016 13:30	28-Jun-2016 09:00
Compound	CAS Number	LOR	Unit		EB1617705-011	EB1617705-012	EB1617705-013	EB1617705-014	EB1617705-015
					Result	Result	Result	Result	Result
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1	%		48.1	25.8	45.7	46.9	27.4
EA150: Particle Sizing									
+75µm	----	1	%		<1	43	4	27	97
+150µm	----	1	%		<1	<1	<1	5	80
+300µm	----	1	%		<1	<1	<1	<1	2
+425µm	----	1	%		<1	<1	<1	<1	<1
+600µm	----	1	%		<1	<1	<1	<1	<1
+1180µm	----	1	%		<1	<1	<1	<1	<1
+2.36mm	----	1	%		<1	<1	<1	<1	<1
+4.75mm	----	1	%		<1	<1	<1	<1	<1
+9.5mm	----	1	%		<1	<1	<1	<1	<1
+19.0mm	----	1	%		<1	<1	<1	<1	<1
+37.5mm	----	1	%		<1	<1	<1	<1	<1
+75.0mm	----	1	%		<1	<1	<1	<1	<1
EA150: Soil Classification based on Particle Size									
Clay (<2 µm)	----	1	%		28	20	26	23	1
Silt (2-60 µm)	----	1	%		66	25	65	44	2
Sand (0.06-2.00 mm)	----	1	%		6	55	9	33	97
Gravel (>2mm)	----	1	%		<1	<1	<1	<1	<1
Cobbles (>6cm)	----	1	%		<1	<1	<1	<1	<1
EA152: Soil Particle Density									
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3		2.67	2.72	2.59	2.67	2.71
EG005T: Total Metals by ICP-AES									
Aluminium	7429-90-5	50	mg/kg		32600	22200	27900	31900	21600
Arsenic	7440-38-2	5	mg/kg		11	6	5	10	<5
Barium	7440-39-3	10	mg/kg		20	10	100	20	20
Iron	7439-89-6	50	mg/kg		51600	41500	49300	52600	34800
Strontium	7440-24-6	2	mg/kg		35	10	90	61	18
Tin	7440-31-5	5	mg/kg		<5	<5	<5	<5	<5
EG020T: Total Metals by ICP-MS									
Selenium	7782-49-2	1	mg/kg		<1	<1	<1	<1	<1
Silver	7440-22-4	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
Thallium	7440-28-0	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
Beryllium	7440-41-7	0.1	mg/kg		0.6	0.4	0.6	0.6	0.3

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	M1	M7	18	19	21
			Client sampling date / time	26-Jun-2016 12:00	26-Jun-2016 13:15	27-Jun-2016 09:00	27-Jun-2016 13:30	28-Jun-2016 09:00
Compound	CAS Number	LOR	Unit	EB1617705-011	EB1617705-012	EB1617705-013	EB1617705-014	EB1617705-015
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Cobalt	7440-48-4	0.1	mg/kg	**20.1**	**16.9**	**20.0**	**20.8**	**16.3**
Chromium	7440-47-3	0.1	mg/kg	**59.1**	**46.8**	**45.2**	**59.6**	**37.0**
Copper	7440-50-8	0.1	mg/kg	**43.8**	**18.6**	**43.4**	**43.0**	**12.4**
Manganese	7439-96-5	0.1	mg/kg	**742**	**553**	**741**	**793**	**319**
Molybdenum	7439-98-7	0.1	mg/kg	**0.3**	**0.1**	**0.3**	**0.9**	**0.1**
Nickel	7440-02-0	0.1	mg/kg	**44.8**	**34.4**	**40.7**	**45.0**	**29.0**
Lead	7439-92-1	0.1	mg/kg	**8.0**	**6.0**	**9.1**	**8.6**	**4.4**
Antimony	7440-36-0	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Zinc	7440-66-6	0.5	mg/kg	**84.3**	**69.0**	**87.2**	**85.7**	**57.6**
Vanadium	7440-62-2	1	mg/kg	**94**	**81**	**90**	**99**	**73**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.1	**0.2**	<0.1	<0.1	<0.1
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	20	mg/kg	**1080**	**350**	**1260**	**870**	**140**
EK062: Total Nitrogen as N (TKN + NOx)								
^ Total Nitrogen as N	----	20	mg/kg	**1080**	**350**	**1260**	**870**	**140**
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	2	mg/kg	**613**	**478**	**717**	**482**	**589**
EP004: Organic Matter								
Organic Matter	----	0.5	%	**3.1**	**0.8**	**2.9**	**5.0**	**0.6**
Total Organic Carbon	----	0.5	%	**1.8**	<0.5	**1.7**	**2.9**	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	M1	M7	18	19	21
				Client sampling date / time	26-Jun-2016 12:00	26-Jun-2016 13:15	27-Jun-2016 09:00	27-Jun-2016 13:30	28-Jun-2016 09:00
Compound	CAS Number	LOR	Unit		EB1617705-011	EB1617705-012	EB1617705-013	EB1617705-014	EB1617705-015
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	M1	M7	18	19	21
				Client sampling date / time	26-Jun-2016 12:00	26-Jun-2016 13:15	27-Jun-2016 09:00	27-Jun-2016 13:30	28-Jun-2016 09:00
Compound	CAS Number	LOR	Unit		EB1617705-011	EB1617705-012	EB1617705-013	EB1617705-014	EB1617705-015
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	1330-20-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**114**	**118**	**119**	**113**	**104**
Anthracene-d10	1719-06-8	0.5	%		**77.9**	**82.2**	**86.7**	**78.9**	**74.3**
4-Terphenyl-d14	1718-51-0	0.5	%		**107**	**107**	**106**	**102**	**94.3**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**91.0**	**99.4**	**94.8**	**99.0**	**101**
Toluene-D8	2037-26-5	0.2	%		**88.5**	**101**	**91.3**	**97.7**	**100**
4-Bromofluorobenzene	460-00-4	0.2	%		**106**	**124**	**110**	**122**	**122**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	22	20	23b	24b	DUP1
			Client sampling date / time	28-Jun-2016 14:00	29-Jun-2016 09:00	02-Jul-2016 09:00	02-Jul-2016 14:00	[02-Jul-2016]
Compound	CAS Number	LOR	Unit	EB1617705-016	EB1617705-017	EB1617705-018	EB1617705-019	EB1617705-020
				Result	Result	Result	Result	Result
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1	%	54.2	29.0	54.6	38.8	53.9
EA150: Particle Sizing								
+75µm	----	1	%	3	96	1	59	----
+150µm	----	1	%	<1	75	<1	58	----
+300µm	----	1	%	<1	6	<1	19	----
+425µm	----	1	%	<1	1	<1	2	----
+600µm	----	1	%	<1	<1	<1	<1	----
+1180µm	----	1	%	<1	<1	<1	<1	----
+2.36mm	----	1	%	<1	<1	<1	<1	----
+4.75mm	----	1	%	<1	<1	<1	<1	----
+9.5mm	----	1	%	<1	<1	<1	<1	----
+19.0mm	----	1	%	<1	<1	<1	<1	----
+37.5mm	----	1	%	<1	<1	<1	<1	----
+75.0mm	----	1	%	<1	<1	<1	<1	----
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	23	1	24	12	----
Silt (2-60 µm)	----	1	%	71	2	74	27	----
Sand (0.06-2.00 mm)	----	1	%	6	97	2	61	----
Gravel (>2mm)	----	1	%	<1	<1	<1	<1	----
Cobbles (>6cm)	----	1	%	<1	<1	<1	<1	----
EA152: Soil Particle Density								
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3	2.67	2.72	2.66	2.69	----
EG005T: Total Metals by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	33800	21800	33500	26000	35100
Arsenic	7440-38-2	5	mg/kg	9	6	8	<5	10
Barium	7440-39-3	10	mg/kg	80	10	70	100	20
Iron	7439-89-6	50	mg/kg	56900	37100	56100	47700	53300
Strontium	7440-24-6	2	mg/kg	68	22	62	70	36
Tin	7440-31-5	5	mg/kg	<5	<5	<5	<5	<5
EG020T: Total Metals by ICP-MS								
Selenium	7782-49-2	1	mg/kg	<1	<1	<1	<1	<1
Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Thallium	7440-28-0	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Beryllium	7440-41-7	0.1	mg/kg	0.7	0.3	0.7	0.6	0.6

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	22	20	23b	24b	DUP1
			Client sampling date / time	28-Jun-2016 14:00	29-Jun-2016 09:00	02-Jul-2016 09:00	02-Jul-2016 14:00	[02-Jul-2016]
Compound	CAS Number	LOR	Unit	EB1617705-016	EB1617705-017	EB1617705-018	EB1617705-019	EB1617705-020
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Cadmium	7440-43-9	0.1	mg/kg	**0.1**	<0.1	<0.1	<0.1	<0.1
Cobalt	7440-48-4	0.1	mg/kg	**22.4**	**18.0**	**21.0**	**21.5**	**20.6**
Chromium	7440-47-3	0.1	mg/kg	**49.9**	**39.1**	**48.4**	**42.3**	**63.8**
Copper	7440-50-8	0.1	mg/kg	**58.6**	**12.8**	**50.0**	**34.6**	**48.6**
Manganese	7439-96-5	0.1	mg/kg	**800**	**363**	**862**	**683**	**789**
Molybdenum	7439-98-7	0.1	mg/kg	**0.4**	**0.1**	**0.3**	**0.2**	**0.4**
Nickel	7440-02-0	0.1	mg/kg	**45.2**	**32.0**	**44.0**	**42.9**	**46.4**
Lead	7439-92-1	0.1	mg/kg	**10.8**	**4.0**	**10.2**	**8.3**	**8.1**
Antimony	7440-36-0	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Zinc	7440-66-6	0.5	mg/kg	**97.0**	**61.1**	**94.9**	**79.4**	**86.0**
Vanadium	7440-62-2	1	mg/kg	**104**	**62**	**99**	**93**	**102**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	20	mg/kg	**1530**	**210**	**1560**	**780**	**1320**
EK062: Total Nitrogen as N (TKN + NOx)								
^ Total Nitrogen as N	----	20	mg/kg	**1530**	**210**	**1560**	**780**	**1320**
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	2	mg/kg	**835**	**511**	**908**	**870**	**662**
EP004: Organic Matter								
Organic Matter	----	0.5	%	**4.0**	**0.6**	**3.5**	**1.4**	**4.2**
Total Organic Carbon	----	0.5	%	**2.3**	<0.5	**2.0**	**0.8**	**2.4**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	22	20	23b	24b	DUP1
				Client sampling date / time	28-Jun-2016 14:00	29-Jun-2016 09:00	02-Jul-2016 09:00	02-Jul-2016 14:00	[02-Jul-2016]
Compound	CAS Number	LOR	Unit		EB1617705-016	EB1617705-017	EB1617705-018	EB1617705-019	EB1617705-020
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	22	20	23b	24b	DUP1
				Client sampling date / time	28-Jun-2016 14:00	29-Jun-2016 09:00	02-Jul-2016 09:00	02-Jul-2016 14:00	[02-Jul-2016]
Compound	CAS Number	LOR	Unit		EB1617705-016	EB1617705-017	EB1617705-018	EB1617705-019	EB1617705-020
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	1330-20-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**92.0**	**121**	**102**	**113**	**114**
Anthracene-d10	1719-06-8	0.5	%		**70.2**	**88.9**	**74.1**	**75.3**	**78.7**
4-Terphenyl-d14	1718-51-0	0.5	%		**83.0**	**109**	**98.6**	**100**	**100**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**93.8**	**105**	**91.9**	**94.0**	**81.8**
Toluene-D8	2037-26-5	0.2	%		**94.7**	**98.5**	**88.6**	**89.7**	**79.7**
4-Bromofluorobenzene	460-00-4	0.2	%		**117**	**119**	**110**	**107**	**95.8**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	DUP2	TRIP1	TRIP BLANK	M25	M31
			Client sampling date / time	[02-Jul-2016]	[02-Jul-2016]	[02-Jul-2016]	04-Jul-2016 14:30	05-Jul-2016 12:00
Compound	CAS Number	LOR	Unit	EB1617705-021	EB1617705-022	EB1617705-023	EB1617705-024	EB1617705-025
				Result	Result	Result	Result	Result
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1	%	29.7	43.4	<1.0	64.2	67.9
EA150: Particle Sizing								
+75µm	----	1	%	----	----	----	----	<1
+150µm	----	1	%	----	----	----	----	<1
+300µm	----	1	%	----	----	----	----	<1
+425µm	----	1	%	----	----	----	----	<1
+600µm	----	1	%	----	----	----	----	<1
+1180µm	----	1	%	----	----	----	----	<1
+2.36mm	----	1	%	----	----	----	----	<1
+4.75mm	----	1	%	----	----	----	----	<1
+9.5mm	----	1	%	----	----	----	----	<1
+19.0mm	----	1	%	----	----	----	----	<1
+37.5mm	----	1	%	----	----	----	----	<1
+75.0mm	----	1	%	----	----	----	----	<1
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	----	----	----	----	52
Silt (2-60 µm)	----	1	%	----	----	----	----	43
Sand (0.06-2.00 mm)	----	1	%	----	----	----	----	5
Gravel (>2mm)	----	1	%	----	----	----	----	<1
Cobbles (>6cm)	----	1	%	----	----	----	----	<1
EA152: Soil Particle Density								
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3	----	----	----	----	2.67
EG005T: Total Metals by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	25200	33100	190	39300	41000
Arsenic	7440-38-2	5	mg/kg	6	7	<5	11	8
Barium	7440-39-3	10	mg/kg	10	20	<10	10	20
Iron	7439-89-6	50	mg/kg	43400	48600	100	55300	56400
Strontium	7440-24-6	2	mg/kg	18	30	<2	50	74
Tin	7440-31-5	5	mg/kg	<5	<5	<5	<5	<5
EG020T: Total Metals by ICP-MS								
Selenium	7782-49-2	1	mg/kg	<1	<1	<1	<1	<1
Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Thallium	7440-28-0	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Beryllium	7440-41-7	0.1	mg/kg	0.4	0.5	<0.1	0.8	0.8

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	DUP2	TRIP1	TRIP BLANK	M25	M31
			Client sampling date / time	[02-Jul-2016]	[02-Jul-2016]	[02-Jul-2016]	04-Jul-2016 14:30	05-Jul-2016 12:00
Compound	CAS Number	LOR	Unit	EB1617705-021	EB1617705-022	EB1617705-023	EB1617705-024	EB1617705-025
				Result	Result	Result	Result	Result
EG020T: Total Metals by ICP-MS - Continued								
Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Cobalt	7440-48-4	0.1	mg/kg	**17.5**	**20.1**	<0.1	**20.0**	**18.8**
Chromium	7440-47-3	0.1	mg/kg	**49.3**	**57.6**	**0.3**	**59.2**	**58.3**
Copper	7440-50-8	0.1	mg/kg	**18.1**	**36.4**	**0.2**	**46.4**	**33.7**
Manganese	7439-96-5	0.1	mg/kg	**556**	**657**	**0.2**	**698**	**756**
Molybdenum	7439-98-7	0.1	mg/kg	**0.1**	**0.2**	<0.1	**0.4**	**0.3**
Nickel	7440-02-0	0.1	mg/kg	**34.8**	**41.5**	<0.1	**47.4**	**50.0**
Lead	7439-92-1	0.1	mg/kg	**6.6**	**7.1**	<0.1	**11.4**	**12.5**
Antimony	7440-36-0	0.1	mg/kg	<0.1	<0.1	<0.1	**0.1**	**0.2**
Zinc	7440-66-6	0.5	mg/kg	**70.7**	**79.7**	<0.5	**97.2**	**97.4**
Vanadium	7440-62-2	1	mg/kg	**83**	**91**	<1	**96**	**88**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	20	mg/kg	**290**	**820**	<20	**1600**	**1560**
EK062: Total Nitrogen as N (TKN + NOx)								
^ Total Nitrogen as N	----	20	mg/kg	**290**	**820**	<20	**1600**	**1560**
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	2	mg/kg	**546**	**681**	<2	**804**	**869**
EP004: Organic Matter								
Organic Matter	----	0.5	%	**0.5**	**2.4**	<0.5	**4.0**	**2.7**
Total Organic Carbon	----	0.5	%	<0.5	**1.4**	<0.5	**2.3**	**1.5**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	DUP2	TRIP1	TRIP BLANK	M25	M31
				Client sampling date / time	[02-Jul-2016]	[02-Jul-2016]	[02-Jul-2016]	04-Jul-2016 14:30	05-Jul-2016 12:00
Compound	CAS Number	LOR	Unit		EB1617705-021	EB1617705-022	EB1617705-023	EB1617705-024	EB1617705-025
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<70	<70
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<60	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	DUP2	TRIP1	TRIP BLANK	M25	M31
				Client sampling date / time	[02-Jul-2016]	[02-Jul-2016]	[02-Jul-2016]	04-Jul-2016 14:30	05-Jul-2016 12:00
Compound	CAS Number	LOR	Unit		EB1617705-021	EB1617705-022	EB1617705-023	EB1617705-024	EB1617705-025
					Result	Result	Result	Result	Result
EP080: BTEXN - Continued									
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	1330-20-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**126**	**119**	**122**	**121**	**123**
Anthracene-d10	1719-06-8	0.5	%		**96.4**	**90.8**	**93.4**	**91.8**	**92.7**
4-Terphenyl-d14	1718-51-0	0.5	%		**131**	**124**	**126**	**126**	**128**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**80.1**	**79.5**	**93.7**	**76.1**	**74.2**
Toluene-D8	2037-26-5	0.2	%		**78.9**	**77.4**	**85.8**	**76.9**	**71.9**
4-Bromofluorobenzene	460-00-4	0.2	%		**80.9**	**77.0**	**86.6**	**74.5**	**71.4**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	M37	M43	----	----	----
				Client sampling date / time	05-Jul-2016 17:00	[06-Jul-2016]	----	----	----
Compound	CAS Number	LOR	Unit		EB1617705-026	EB1617705-027	--------	--------	--------
					Result	Result	----	----	----
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1	%		43.4	61.8	----	----	----
EA150: Particle Sizing									
+75µm	----	1	%		64	2	----	----	----
+150µm	----	1	%		55	<1	----	----	----
+300µm	----	1	%		21	<1	----	----	----
+425µm	----	1	%		14	<1	----	----	----
+600µm	----	1	%		<1	<1	----	----	----
+1180µm	----	1	%		<1	<1	----	----	----
+2.36mm	----	1	%		<1	<1	----	----	----
+4.75mm	----	1	%		<1	<1	----	----	----
+9.5mm	----	1	%		<1	<1	----	----	----
+19.0mm	----	1	%		<1	<1	----	----	----
+37.5mm	----	1	%		<1	<1	----	----	----
+75.0mm	----	1	%		<1	<1	----	----	----
EA150: Soil Classification based on Particle Size									
Clay (<2 µm)	----	1	%		22	41	----	----	----
Silt (2-60 µm)	----	1	%		12	55	----	----	----
Sand (0.06-2.00 mm)	----	1	%		66	4	----	----	----
Gravel (>2mm)	----	1	%		<1	<1	----	----	----
Cobbles (>6cm)	----	1	%		<1	<1	----	----	----
EA152: Soil Particle Density									
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3		2.69	2.71	----	----	----
EG005T: Total Metals by ICP-AES									
Aluminium	7429-90-5	50	mg/kg		25200	35900	----	----	----
Arsenic	7440-38-2	5	mg/kg		22	19	----	----	----
Barium	7440-39-3	10	mg/kg		20	30	----	----	----
Iron	7439-89-6	50	mg/kg		44000	52800	----	----	----
Strontium	7440-24-6	2	mg/kg		370	170	----	----	----
Tin	7440-31-5	5	mg/kg		<5	<5	----	----	----
EG020T: Total Metals by ICP-MS									
Selenium	7782-49-2	1	mg/kg		<1	<1	----	----	----
Silver	7440-22-4	0.1	mg/kg		<0.1	<0.1	----	----	----
Thallium	7440-28-0	0.1	mg/kg		<0.1	<0.1	----	----	----
Beryllium	7440-41-7	0.1	mg/kg		0.7	0.7	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	M37	M43	----	----	----
			Client sampling date / time	05-Jul-2016 17:00	[06-Jul-2016]	----	----	----
Compound	CAS Number	LOR	Unit	EB1617705-026	EB1617705-027	--------	--------	--------
				Result	Result	----	----	----
EG020T: Total Metals by ICP-MS - Continued								
Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	----	----	----
Cobalt	7440-48-4	0.1	mg/kg	**14.4**	**17.6**	----	----	----
Chromium	7440-47-3	0.1	mg/kg	**49.8**	**61.2**	----	----	----
Copper	7440-50-8	0.1	mg/kg	**19.0**	**35.6**	----	----	----
Manganese	7439-96-5	0.1	mg/kg	**675**	**1030**	----	----	----
Molybdenum	7439-98-7	0.1	mg/kg	**0.3**	**0.4**	----	----	----
Nickel	7440-02-0	0.1	mg/kg	**38.2**	**44.7**	----	----	----
Lead	7439-92-1	0.1	mg/kg	**8.7**	**15.3**	----	----	----
Antimony	7440-36-0	0.1	mg/kg	**0.3**	**0.4**	----	----	----
Zinc	7440-66-6	0.5	mg/kg	**62.2**	**87.5**	----	----	----
Vanadium	7440-62-2	1	mg/kg	**61**	**78**	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	**0.1**	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.1	<0.1	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	20	mg/kg	**720**	**1650**	----	----	----
EK062: Total Nitrogen as N (TKN + NOx)								
^ Total Nitrogen as N	----	20	mg/kg	**720**	**1650**	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	2	mg/kg	**697**	**887**	----	----	----
EP004: Organic Matter								
Organic Matter	----	0.5	%	**1.1**	**1.0**	----	----	----
Total Organic Carbon	----	0.5	%	**0.6**	**0.6**	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	M37	M43	----	----	----
				Client sampling date / time	05-Jul-2016 17:00	[06-Jul-2016]	----	----	----
Compound	CAS Number	LOR	Unit		EB1617705-026	EB1617705-027	--------	--------	--------
					Result	Result	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	----	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	mg/kg		<0.5	<0.5	----	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	mg/kg		<0.5	<0.5	----	----	----
^ **Benzo(a)pyrene TEQ (half LOR)**	----	0.5	mg/kg		**0.6**	**0.6**	----	----	----
^ **Benzo(a)pyrene TEQ (LOR)**	----	0.5	mg/kg		**1.2**	**1.2**	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	----	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	----	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	----	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	<10	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	<50	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	<50	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		----	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	M37	M43	----	----	----
				Client sampling date / time	05-Jul-2016 17:00	[06-Jul-2016]	----	----	----
Compound	CAS Number	LOR	Unit		EB1617705-026	EB1617705-027	--------	--------	--------
					Result	Result	----	----	----
EP080: BTEXN - Continued									
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	----	----	----
^ **Total Xylenes**	1330-20-7	0.5	mg/kg		<0.5	<0.5	----	----	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**97.1**	**45.5**	----	----	----
Anthracene-d10	1719-06-8	0.5	%		**90.8**	**84.2**	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		**126**	**116**	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**75.3**	**70.6**	----	----	----
Toluene-D8	2037-26-5	0.2	%		**73.3**	**63.9**	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		**71.4**	**63.2**	----	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	34	157
Anthracene-d10	1719-06-8	37	153
4-Terphenyl-d14	1718-51-0	42	172
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	53	134
Toluene-D8	2037-26-5	60	131
4-Bromofluorobenzene	460-00-4	59	127

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB1617705**	Page	: 1 of 14
Client	: **BMT WBM GROUP LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR JEREMY VISSER	Contact	: John Pickering
Address	: PO BOX 203 SPRING HILL BRISBANE QLD 4004	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +61 07 3831 6744	Telephone	: +61 7 3552 8634
Project	: B21414 Elk	Date Samples Received	: 11-Jul-2016
Order number	: ----	Date Analysis Commenced	: 11-Jul-2016
C-O-C number	: ----	Issue Date	: 27-Jul-2016
Sampler	: CONOR JONES, DANIEL MORAN		
Site	: ----		
Quote number	: ----		
No. of samples received	: 31		
No. of samples analysed	: 27		

NATA Accredited Laboratory 825
Accredited for compliance with
ISO/IEC 17025.

NATA
WORLD RECOGNISED ACCREDITATION

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

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.

Signatories	*Position*	*Accreditation Category*
Kim McCabe	Senior Inorganic Chemist	Brisbane Inorganics, Stafford, QLD
Matt Frost	Senior Organic Chemist	Brisbane Organics, Stafford, QLD
Satishkumar Trivedi	Acid Sulfate Soils Supervisor	Brisbane Acid Sulphate Soils, Stafford, QLD

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: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA055: Moisture Content (QC Lot: 514337)									
EB1617705-001	M6	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	48.2	48.1	0.348	0% - 20%
EB1617705-011	M1	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	48.1	46.6	3.11	0% - 20%
EA055: Moisture Content (QC Lot: 514846)									
EB1617705-021	DUP2	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	29.7	30.4	2.34	0% - 20%
EG005T: Total Metals by ICP-AES (QC Lot: 514842)									
EB1617705-021	DUP2	EG005T: Barium	7440-39-3	10	mg/kg	10	10	0.00	No Limit
		EG005T: Strontium	7440-24-6	2	mg/kg	18	18	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	6	5	17.6	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Aluminium	7429-90-5	50	mg/kg	25200	25100	0.377	0% - 20%
		EG005T: Iron	7439-89-6	50	mg/kg	43400	43300	0.174	0% - 20%
EG005T: Total Metals by ICP-AES (QC Lot: 514937)									
EB1617705-001	M6	EG005T: Barium	7440-39-3	10	mg/kg	20	20	0.00	No Limit
		EG005T: Strontium	7440-24-6	2	mg/kg	35	33	6.50	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	10	10	0.00	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Aluminium	7429-90-5	50	mg/kg	34400	32800	5.00	0% - 20%
		EG005T: Iron	7439-89-6	50	mg/kg	54300	50600	7.03	0% - 20%
EB1617705-011	M1	EG005T: Barium	7440-39-3	10	mg/kg	20	20	0.00	No Limit
		EG005T: Strontium	7440-24-6	2	mg/kg	35	35	0.00	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	11	10	10.0	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Aluminium	7429-90-5	50	mg/kg	32600	33600	3.24	0% - 20%
		EG005T: Iron	7439-89-6	50	mg/kg	51600	53800	4.30	0% - 20%

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 514839)									
EB1617705-021	DUP2	EG020X-T: Copper	7440-50-8	0.1	mg/kg	18.1	18.0	0.654	0% - 20%
EB1617705-021	DUP2	EG020X-T: Beryllium	7440-41-7	0.1	mg/kg	0.4	0.4	0.00	No Limit
		EG020X-T: Cobalt	7440-48-4	0.1	mg/kg	17.5	17.8	1.44	0% - 20%
		EG020X-T: Chromium	7440-47-3	0.1	mg/kg	49.3	49.8	1.16	0% - 20%
		EG020X-T: Manganese	7439-96-5	0.1	mg/kg	556	554	0.239	0% - 20%
		EG020X-T: Molybdenum	7439-98-7	0.1	mg/kg	0.1	0.1	0.00	No Limit
		EG020X-T: Nickel	7440-02-0	0.1	mg/kg	34.8	35.6	2.02	0% - 20%
		EG020X-T: Lead	7439-92-1	0.1	mg/kg	6.6	6.4	3.12	0% - 20%
		EG020X-T: Antimony	7440-36-0	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
		EG020X-T: Zinc	7440-66-6	0.5	mg/kg	70.7	72.2	2.14	0% - 20%
		EG020X-T: Vanadium	7440-62-2	1	mg/kg	83	84	1.51	0% - 20%
EG020T: Total Metals by ICP-MS (QC Lot: 514840)									
EB1617705-021	DUP2	EG020Y-T: Thallium	7440-28-0	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
		EG020Y-T: Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
		EG020Y-T: Selenium	7782-49-2	1	mg/kg	<1	<1	0.00	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 514939)									
EB1617705-001	M6	EG020X-T: Copper	7440-50-8	0.1	mg/kg	39.4	40.2	2.14	0% - 20%
EB1617705-011	M1	EG020X-T: Copper	7440-50-8	0.1	mg/kg	43.8	43.3	1.18	0% - 20%
EB1617705-001	M6	EG020X-T: Beryllium	7440-41-7	0.1	mg/kg	0.6	0.6	0.00	No Limit
		EG020X-T: Cobalt	7440-48-4	0.1	mg/kg	21.8	19.7	10.0	0% - 20%
		EG020X-T: Chromium	7440-47-3	0.1	mg/kg	63.7	58.8	7.99	0% - 20%
		EG020X-T: Manganese	7439-96-5	0.1	mg/kg	708	662	6.71	0% - 20%
		EG020X-T: Molybdenum	7439-98-7	0.1	mg/kg	0.3	0.3	0.00	No Limit
		EG020X-T: Nickel	7440-02-0	0.1	mg/kg	47.6	43.2	9.70	0% - 20%
		EG020X-T: Lead	7439-92-1	0.1	mg/kg	8.4	7.9	6.09	0% - 20%
		EG020X-T: Antimony	7440-36-0	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
		EG020X-T: Zinc	7440-66-6	0.5	mg/kg	87.9	80.4	8.95	0% - 20%
		EG020X-T: Vanadium	7440-62-2	1	mg/kg	100	92	8.60	0% - 20%
EB1617705-011	M1	EG020X-T: Beryllium	7440-41-7	0.1	mg/kg	0.6	0.6	0.00	No Limit
		EG020X-T: Cobalt	7440-48-4	0.1	mg/kg	20.1	20.6	2.49	0% - 20%
		EG020X-T: Chromium	7440-47-3	0.1	mg/kg	59.1	60.1	1.81	0% - 20%
		EG020X-T: Manganese	7439-96-5	0.1	mg/kg	742	765	2.97	0% - 20%
		EG020X-T: Molybdenum	7439-98-7	0.1	mg/kg	0.3	0.3	0.00	No Limit
		EG020X-T: Nickel	7440-02-0	0.1	mg/kg	44.8	45.4	1.48	0% - 20%
		EG020X-T: Lead	7439-92-1	0.1	mg/kg	8.0	8.3	3.48	0% - 20%
		EG020X-T: Antimony	7440-36-0	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
		EG020X-T: Zinc	7440-66-6	0.5	mg/kg	84.3	86.4	2.50	0% - 20%
		EG020X-T: Vanadium	7440-62-2	1	mg/kg	94	96	2.26	0% - 20%
EG020T: Total Metals by ICP-MS (QC Lot: 514940)									
EB1617705-001	M6	EG020Y-T: Thallium	7440-28-0	0.1	mg/kg	<0.1	<0.1	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 514940) - continued									
EB1617705-001	M6	EG020Y-T: Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
		EG020Y-T: Selenium	7782-49-2	1	mg/kg	<1	<1	0.00	No Limit
EB1617705-011	M1	EG020Y-T: Thallium	7440-28-0	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
		EG020Y-T: Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
		EG020Y-T: Selenium	7782-49-2	1	mg/kg	<1	<1	0.00	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 516045)									
EB1617705-001	M6	EG020Z-T: Silver	7440-22-4	0.1	mg/kg	0.1	0.2	0.00	No Limit
EB1617705-011	M1	EG020Z-T: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 516046)									
EB1617705-021	DUP2	EG020Z-T: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 514841)									
EB1617705-021	DUP2	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 514938)									
EB1617705-001	M6	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EB1617705-011	M1	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 514945)									
EB1617705-001	M6	EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EB1617705-011	M1	EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.1	0.1	0.00	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 514946)									
EB1617705-021	DUP2	EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 514942)									
EB1617705-001	M6	EK061G: Total Kjeldahl Nitrogen as N	----	20	mg/kg	930	960	3.30	0% - 20%
EB1617705-011	M1	EK061G: Total Kjeldahl Nitrogen as N	----	20	mg/kg	1080	1100	1.85	0% - 20%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 514943)									
EB1617705-021	DUP2	EK061G: Total Kjeldahl Nitrogen as N	----	20	mg/kg	290	300	0.00	0% - 50%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 514941)									
EB1617705-001	M6	EK067G: Total Phosphorus as P	----	2	mg/kg	580	583	0.500	0% - 20%
EB1617705-011	M1	EK067G: Total Phosphorus as P	----	2	mg/kg	613	658	7.20	0% - 20%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 514944)									
EB1617705-021	DUP2	EK067G: Total Phosphorus as P	----	2	mg/kg	546	538	1.31	0% - 20%
EP004: Organic Matter (QC Lot: 514477)									
EB1617705-001	M6	EP004: Organic Matter	----	0.5	%	3.1	3.1	0.00	No Limit
		EP004: Total Organic Carbon	----	0.5	%	1.8	1.8	0.00	No Limit
EB1617705-010	M5	EP004: Organic Matter	----	0.5	%	2.5	2.5	0.00	No Limit
		EP004: Total Organic Carbon	----	0.5	%	1.4	1.4	0.00	No Limit
EP004: Organic Matter (QC Lot: 514480)									
EB1617705-021	DUP2	EP004: Organic Matter	----	0.5	%	0.5	0.5	0.00	No Limit
		EP004: Total Organic Carbon	----	0.5	%	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 514335)									
EB1617705-001	M6	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EB1617705-011	M1	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 514845)									
EB1617705-021	DUP2	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 514845) - continued									
EB1617705-021	DUP2	EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 514334)									
EB1617705-001	M6	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EB1617705-011	M1	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 514336)									
EB1617705-001	M6	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EB1617705-011	M1	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 514843)									
EB1617705-021	DUP2	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 514844)									
EB1617705-021	DUP2	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 514334)									
EB1617705-001	M6	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EB1617705-011	M1	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 514336)									
EB1617705-001	M6	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EB1617705-011	M1	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 514336) - continued									
EB1617705-011	M1	EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 514843)									
EB1617705-021	DUP2	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 514844)									
EB1617705-021	DUP2	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080: BTEXN (QC Lot: 514334)									
EB1617705-001	M6	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EB1617705-011	M1	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP080: BTEXN (QC Lot: 514843)									
EB1617705-021	DUP2	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	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: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 514842)								
EG005T: Aluminium	7429-90-5	50	mg/kg	<50	----	----	----	----
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	118.9 mg/kg	99.7	84	123
EG005T: Barium	7440-39-3	10	mg/kg	<10	105.1967 mg/kg	94.8	89	129
EG005T: Iron	7439-89-6	50	mg/kg	<50	34900 mg/kg	103	70	120
EG005T: Strontium	7440-24-6	2	mg/kg	<2	44.50816 mg/kg	99.8	83	117
EG005T: Tin	7440-31-5	5	mg/kg	<5	5.7 mg/kg	87.2	75	130
EG005T: Total Metals by ICP-AES (QCLot: 514937)								
EG005T: Aluminium	7429-90-5	50	mg/kg	<50	----	----	----	----
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	118.9 mg/kg	106	84	123
EG005T: Barium	7440-39-3	10	mg/kg	<10	105.1967 mg/kg	93.6	89	129
EG005T: Iron	7439-89-6	50	mg/kg	<50	34900 mg/kg	101	70	120
EG005T: Strontium	7440-24-6	2	mg/kg	<2	44.50816 mg/kg	88.2	83	117
EG005T: Tin	7440-31-5	5	mg/kg	<5	5.7 mg/kg	99.0	75	130
EG020T: Total Metals by ICP-MS (QCLot: 514839)								
EG020X-T: Beryllium	7440-41-7	0.1	mg/kg	<0.1	0.64 mg/kg	117	79	130
EG020X-T: Cobalt	7440-48-4	0.1	mg/kg	<0.1	11.6 mg/kg	100	88	129
EG020X-T: Chromium	7440-47-3	0.1	mg/kg	<0.1	22.9 mg/kg	93.0	75	130
EG020X-T: Copper	7440-50-8	0.1	mg/kg	<0.1	52.9 mg/kg	103	84	120
EG020X-T: Manganese	7439-96-5	0.1	mg/kg	<0.1	592 mg/kg	103	86	130
EG020X-T: Molybdenum	7439-98-7	0.1	mg/kg	<0.1	2 mg/kg	98.3	82	118
EG020X-T: Nickel	7440-02-0	0.1	mg/kg	<0.1	16.1 mg/kg	95.0	89	127
EG020X-T: Lead	7439-92-1	0.1	mg/kg	<0.1	66.3 mg/kg	# 124	85	117
EG020X-T: Antimony	7440-36-0	0.1	mg/kg	<0.1	----	----	----	----
EG020X-T: Zinc	7440-66-6	0.5	mg/kg	<0.5	187 mg/kg	103	71	130
EG020X-T: Vanadium	7440-62-2	1	mg/kg	<1	67.8 mg/kg	104	86	130
EG020T: Total Metals by ICP-MS (QCLot: 514840)								
EG020Y-T: Selenium	7782-49-2	1	mg/kg	<1	----	----	----	----
EG020Y-T: Thallium	7440-28-0	0.1	mg/kg	<0.1	----	----	----	----
EG020Y-T: Cadmium	7440-43-9	0.1	mg/kg	<0.1	1.43 mg/kg	105	81	121
EG020T: Total Metals by ICP-MS (QCLot: 514939)								
EG020X-T: Beryllium	7440-41-7	0.1	mg/kg	<0.1	0.64 mg/kg	102	79	130
EG020X-T: Cobalt	7440-48-4	0.1	mg/kg	<0.1	11.6 mg/kg	103	88	129
EG020X-T: Chromium	7440-47-3	0.1	mg/kg	<0.1	22.9 mg/kg	95.8	75	130
EG020X-T: Copper	7440-50-8	0.1	mg/kg	<0.1	52.9 mg/kg	102	84	120

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 514939) - continued								
EG020X-T: Manganese	7439-96-5	0.1	mg/kg	# 0.1	592 mg/kg	102	86	130
EG020X-T: Molybdenum	7439-98-7	0.1	mg/kg	<0.1	2 mg/kg	101	82	118
EG020X-T: Nickel	7440-02-0	0.1	mg/kg	<0.1	16.1 mg/kg	97.7	89	127
EG020X-T: Lead	7439-92-1	0.1	mg/kg	<0.1	66.3 mg/kg	102	85	117
EG020X-T: Antimony	7440-36-0	0.1	mg/kg	<0.1	----	----	----	----
EG020X-T: Zinc	7440-66-6	0.5	mg/kg	<0.5	187 mg/kg	106	71	130
EG020X-T: Vanadium	7440-62-2	1	mg/kg	<1	67.8 mg/kg	105	86	130
EG020T: Total Metals by ICP-MS (QCLot: 514940)								
EG020Y-T: Selenium	7782-49-2	1	mg/kg	<1	----	----	----	----
EG020Y-T: Thallium	7440-28-0	0.1	mg/kg	<0.1	----	----	----	----
EG020Y-T: Cadmium	7440-43-9	0.1	mg/kg	<0.1	1.43 mg/kg	98.0	81	121
EG020T: Total Metals by ICP-MS (QCLot: 516045)								
EG020Z-T: Silver	7440-22-4	0.1	mg/kg	<0.1	3.16 mg/kg	92.7	72	120
EG020T: Total Metals by ICP-MS (QCLot: 516046)								
EG020Z-T: Silver	7440-22-4	0.1	mg/kg	<0.1	3.16 mg/kg	92.7	72	120
EG035T: Total Recoverable Mercury by FIMS (QCLot: 514841)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.09821 mg/kg	122	78	122
EG035T: Total Recoverable Mercury by FIMS (QCLot: 514938)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.09821 mg/kg	110	78	122
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 514945)								
EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.1	2.5 mg/kg	99.0	86	115
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 514946)								
EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.1	2.5 mg/kg	96.9	86	115
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 514942)								
EK061G: Total Kjeldahl Nitrogen as N	----	20	mg/kg	<20	877 mg/kg	92.0	70	110
				<20	3644 mg/kg	75.4	70	110
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 514943)								
EK061G: Total Kjeldahl Nitrogen as N	----	20	mg/kg	<20	877 mg/kg	91.9	70	110
				<20	3644 mg/kg	74.3	70	110
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 514941)								
EK067G: Total Phosphorus as P	----	2	mg/kg	<2	766 mg/kg	78.0	70	110
				<2	1200 mg/kg	86.3	70	110
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 514944)								
EK067G: Total Phosphorus as P	----	2	mg/kg	<2	766 mg/kg	82.3	70	110
				<2	1200 mg/kg	94.3	70	110
EP004: Organic Matter (QCLot: 514477)								
EP004: Organic Matter	----	0.5	%	<0.5	2.3 %	88.8	83	115

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP004: Organic Matter (QCLot: 514477) - continued								
EP004: Total Organic Carbon	----	0.5	%	<0.5	1.3 %	88.7	85	115
EP004: Organic Matter (QCLot: 514480)								
EP004: Organic Matter	----	0.5	%	<0.5	2.3 %	88.8	83	115
EP004: Total Organic Carbon	----	0.5	%	<0.5	1.3 %	88.7	85	115
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 514335)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	1.5 mg/kg	109	74	119
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	1.5 mg/kg	89.5	74	118
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	1.5 mg/kg	103	83	121
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	1.5 mg/kg	101	81	116
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	1.5 mg/kg	109	72	117
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	1.5 mg/kg	109	72	115
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	1.5 mg/kg	97.6	70	116
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	1.5 mg/kg	98.7	70	134
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	1.5 mg/kg	71.5	64	120
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	1.5 mg/kg	116	66	119
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	1.5 mg/kg	98.1	59	129
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	1.5 mg/kg	106	70	129
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	1.5 mg/kg	87.9	76	121
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	1.5 mg/kg	86.8	53	135
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	1.5 mg/kg	90.7	45	134
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	1.5 mg/kg	97.2	64	131
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 514845)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	1.5 mg/kg	114	74	119
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	1.5 mg/kg	108	74	118
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	1.5 mg/kg	113	83	121
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	1.5 mg/kg	# 123	81	116
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	1.5 mg/kg	# 144	72	117
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	1.5 mg/kg	# 126	72	115
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	1.5 mg/kg	# 124	70	116
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	1.5 mg/kg	122	70	134
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	1.5 mg/kg	111	64	120
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	1.5 mg/kg	112	66	119
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	1.5 mg/kg	105	59	129
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	1.5 mg/kg	125	70	129
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	1.5 mg/kg	97.6	76	121
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	1.5 mg/kg	102	53	135

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 514845) - continued								
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	1.5 mg/kg	104	45	134
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	1.5 mg/kg	101	64	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 514334)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	16 mg/kg	91.2	66	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 514336)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	318 mg/kg	112	79	123
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	531 mg/kg	99.4	77	123
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 514843)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	16 mg/kg	102	66	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 514844)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	318 mg/kg	115	79	123
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	531 mg/kg	103	77	123
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 514334)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	18.5 mg/kg	88.7	66	119
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 514336)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	428 mg/kg	110	81	122
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	395 mg/kg	95.0	74	122
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 514843)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	18.5 mg/kg	102	66	119
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 514844)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	428 mg/kg	112	81	122
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	395 mg/kg	101	74	122
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
EP080: BTEXN (QCLot: 514334)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	93.0	73	105
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	99.3	73	105
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	99.6	67	104
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	104	66	106
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	101	68	105
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	100	72	115
EP080: BTEXN (QCLot: 514843)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	85.5	73	105
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	90.6	73	105

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080: BTEXN (QCLot: 514843) - continued								
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	91.9	67	104
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	89.9	66	106
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	91.2	68	105
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	102	72	115

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: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005T: Total Metals by ICP-AES (QCLot: 514842)							
EB1617705-022	TRIP1	EG005T: Arsenic	7440-38-2	50 mg/kg	98.4	70	130
		EG005T: Barium	7440-39-3	50 mg/kg	112	70	130
EG005T: Total Metals by ICP-AES (QCLot: 514937)							
EB1617705-002	M3	EG005T: Arsenic	7440-38-2	50 mg/kg	99.4	70	130
		EG005T: Barium	7440-39-3	50 mg/kg	106	70	130
EG020T: Total Metals by ICP-MS (QCLot: 514839)							
EB1617705-022	TRIP1	EG020X-T: Copper	7440-50-8	50 mg/kg	100	70	130
EB1617705-022	TRIP1	EG020X-T: Beryllium	7440-41-7	5 mg/kg	96.1	70	130
		EG020X-T: Cobalt	7440-48-4	50 mg/kg	98.3	70	130
		EG020X-T: Chromium	7440-47-3	50 mg/kg	102	70	130
		EG020X-T: Manganese	7439-96-5	50 mg/kg	# Not Determined	70	130
		EG020X-T: Nickel	7440-02-0	50 mg/kg	99.2	70	130
		EG020X-T: Lead	7439-92-1	50 mg/kg	96.2	70	130
		EG020X-T: Zinc	7440-66-6	50 mg/kg	100	70	130
		EG020X-T: Vanadium	7440-62-2	50 mg/kg	98.8	70	130
EG020T: Total Metals by ICP-MS (QCLot: 514840)							
EB1617705-022	TRIP1	EG020Y-T: Cadmium	7440-43-9	25 mg/kg	94.8	70	130
EG020T: Total Metals by ICP-MS (QCLot: 514939)							
EB1617705-002	M3	EG020X-T: Copper	7440-50-8	50 mg/kg	102	70	130
EB1617705-002	M3	EG020X-T: Beryllium	7440-41-7	5 mg/kg	88.2	70	130
		EG020X-T: Cobalt	7440-48-4	50 mg/kg	100.0	70	130
		EG020X-T: Chromium	7440-47-3	50 mg/kg	96.5	70	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 514939) - continued							
EB1617705-002	M3	EG020X-T: Manganese	7439-96-5	50 mg/kg	# Not Determined	70	130
		EG020X-T: Nickel	7440-02-0	50 mg/kg	96.5	70	130
		EG020X-T: Lead	7439-92-1	50 mg/kg	91.1	70	130
		EG020X-T: Zinc	7440-66-6	50 mg/kg	93.6	70	130
		EG020X-T: Vanadium	7440-62-2	50 mg/kg	96.7	70	130
EG020T: Total Metals by ICP-MS (QCLot: 514940)							
EB1617705-002	M3	EG020Y-T: Cadmium	7440-43-9	25 mg/kg	92.3	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 514841)							
EB1617705-022	TRIP1	EG035T: Mercury	7439-97-6	2.5 mg/kg	102	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 514938)							
EB1617705-002	M3	EG035T: Mercury	7439-97-6	2.5 mg/kg	104	70	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 514945)							
EB1617705-002	M3	EK059G: Nitrite + Nitrate as N (Sol.)	----	2 mg/kg	95.5	70	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 514946)							
EB1617705-022	TRIP1	EK059G: Nitrite + Nitrate as N (Sol.)	----	2 mg/kg	98.9	70	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 514942)							
EB1617705-002	M3	EK061G: Total Kjeldahl Nitrogen as N	----	500 mg/kg	83.1	70	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 514943)							
EB1617705-022	TRIP1	EK061G: Total Kjeldahl Nitrogen as N	----	500 mg/kg	102	70	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 514941)							
EB1617705-002	M3	EK067G: Total Phosphorus as P	----	100 mg/kg	92.3	70	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 514944)							
EB1617705-022	TRIP1	EK067G: Total Phosphorus as P	----	100 mg/kg	96.2	70	130
EP004: Organic Matter (QCLot: 514477)							
EB1617705-002	M3	EP004: Organic Matter	----	1.84 %	83.0	70	130
		EP004: Total Organic Carbon	----	1.04 %	83.0	70	130
EP004: Organic Matter (QCLot: 514480)							
EB1617705-022	TRIP1	EP004: Organic Matter	----	1.84 %	83.0	70	130
		EP004: Total Organic Carbon	----	1.04 %	83.0	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 514335)							
EB1617705-002	M3	EP075(SIM): Acenaphthene	83-32-9	1.5 mg/kg	106	70	130
		EP075(SIM): Pyrene	129-00-0	1.5 mg/kg	108	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 514845)							

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 514845) - continued							
EB1617705-022	TRIP1	EP075(SIM): Acenaphthene	83-32-9	1.5 mg/kg	111	70	130
		EP075(SIM): Pyrene	129-00-0	1.5 mg/kg	118	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 514334)							
EB1617705-002	M3	EP080: C6 - C9 Fraction	----	8 mg/kg	75.3	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 514336)							
EB1617705-002	M3	EP071: C10 - C14 Fraction	----	318 mg/kg	114	70	130
		EP071: C15 - C28 Fraction	----	531 mg/kg	102	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 514843)							
EB1617705-022	TRIP1	EP080: C6 - C9 Fraction	----	8 mg/kg	77.3	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 514844)							
EB1617705-022	TRIP1	EP071: C10 - C14 Fraction	----	318 mg/kg	110	70	130
		EP071: C15 - C28 Fraction	----	531 mg/kg	100	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 514334)							
EB1617705-002	M3	EP080: C6 - C10 Fraction	C6_C10	8 mg/kg	77.6	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 514336)							
EB1617705-002	M3	EP071: >C10 - C16 Fraction	----	428 mg/kg	113	70	130
		EP071: >C16 - C34 Fraction	----	395 mg/kg	96.8	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 514843)							
EB1617705-022	TRIP1	EP080: C6 - C10 Fraction	C6_C10	8 mg/kg	79.5	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 514844)							
EB1617705-022	TRIP1	EP071: >C10 - C16 Fraction	----	428 mg/kg	109	70	130
		EP071: >C16 - C34 Fraction	----	395 mg/kg	97.4	70	130
EP080: BTEXN (QCLot: 514334)							
EB1617705-002	M3	EP080: Benzene	71-43-2	2 mg/kg	77.4	70	130
		EP080: Toluene	108-88-3	2 mg/kg	72.8	70	130
EP080: BTEXN (QCLot: 514843)							
EB1617705-022	TRIP1	EP080: Benzene	71-43-2	2 mg/kg	# 63.6	70	130
		EP080: Toluene	108-88-3	2 mg/kg	# 63.6	70	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB1617705**	Page	: 1 of 25
Client	: **BMT WBM GROUP LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR JEREMY VISSER	Telephone	: +61 7 3552 8634
Project	: B21414 Elk	Date Samples Received	: 11-Jul-2016
Site	: ----	Issue Date	: 27-Jul-2016
Sampler	: CONOR JONES, DANIEL MORAN	No. of samples received	: 31
Order number	: ----	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 Duplicate outliers occur.**
- **Method Blank value outliers exist - please see following pages for full details.**
- **Laboratory Control 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: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Method Blank (MB) Values							
EG020T: Total Metals by ICP-MS	QC-MRG4-51493700	----	**Manganese**	7439-96-5	0.1 mg/kg	0.1 mg/kg	**Blank result exceeds permitted value**
Laboratory Control Spike (LCS) Recoveries							
EG020T: Total Metals by ICP-MS	QC-MRG4-51483900	----	**Lead**	7439-92-1	124 %	85-117%	**Recovery greater than upper control limit**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	QC-514845-002	----	**Fluorene**	86-73-7	123 %	81-116%	**Recovery greater than upper control limit**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	QC-514845-002	----	**Phenanthrene**	85-01-8	144 %	72-117%	**Recovery greater than upper control limit**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	QC-514845-002	----	**Anthracene**	120-12-7	126 %	72-115%	**Recovery greater than upper control limit**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	QC-514845-002	----	**Fluoranthene**	206-44-0	124 %	70-116%	**Recovery greater than upper control limit**
Matrix Spike (MS) Recoveries							
EG020T: Total Metals by ICP-MS	EB1617705--022	TRIP1	**Manganese**	7439-96-5	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG020T: Total Metals by ICP-MS	EB1617705--002	M3	**Manganese**	7439-96-5	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EP080: BTEXN	EB1617705--022	TRIP1	**Benzene**	71-43-2	63.6 %	70-130%	**Recovery less than lower data quality objective**
EP080: BTEXN	EB1617705--022	TRIP1	**Toluene**	108-88-3	63.6 %	70-130%	**Recovery less than lower data quality objective**

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method / Container / Client Sample ID(s)		Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA055: Moisture Content							
Soil Glass Jar - Unpreserved							
M6,	M3,	----	----	----	11-Jul-2016	09-Jul-2016	**2**
M9,	M10,						
M4,	M12,						
M11,	M2						
Soil Glass Jar - Unpreserved							
M8,	M5,	----	----	----	11-Jul-2016	10-Jul-2016	**1**
M1,	M7						
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							

Matrix: **SOIL**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Analysis Holding Time Compliance						
Soil Glass Jar - Unpreserved						
M6, M3, M9, M10, M4, M12, M11, M2	11-Jul-2016	09-Jul-2016	**2**	----	----	----
Soil Glass Jar - Unpreserved						
M8, M5, M1, M7	11-Jul-2016	10-Jul-2016	**1**	----	----	----
EP080/071: Total Petroleum Hydrocarbons						
Soil Glass Jar - Unpreserved						
M6, M3, M9, M10, M4, M12, M11, M2	11-Jul-2016	09-Jul-2016	**2**	----	----	----
Soil Glass Jar - Unpreserved						
M6, M3, M9, M10, M4, M12, M11, M2	11-Jul-2016	09-Jul-2016	**2**	14-Jul-2016	09-Jul-2016	**5**
Soil Glass Jar - Unpreserved						
M8, M5, M1, M7	11-Jul-2016	10-Jul-2016	**1**	----	----	----
Soil Glass Jar - Unpreserved						
M8, M5, M1, M7	11-Jul-2016	10-Jul-2016	**1**	14-Jul-2016	10-Jul-2016	**4**
Soil Glass Jar - Unpreserved						
18, 19	----	----	----	14-Jul-2016	11-Jul-2016	**3**
Soil Glass Jar - Unpreserved						
21, 22	----	----	----	14-Jul-2016	12-Jul-2016	**2**
Soil Glass Jar - Unpreserved						
20	----	----	----	14-Jul-2016	13-Jul-2016	**1**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions						
Soil Glass Jar - Unpreserved						
M6, M3, M9, M10, M4, M12, M11, M2	11-Jul-2016	09-Jul-2016	**2**	----	----	----

Matrix: **SOIL**

Method / Container / Client Sample ID(s)	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Days overdue	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Days overdue
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Analysis Holding Time						
Soil Glass Jar - Unpreserved M6, M3, M9, M10, M4, M12, M11, M2	11-Jul-2016	09-Jul-2016	**2**	14-Jul-2016	09-Jul-2016	**5**
Soil Glass Jar - Unpreserved M8, M5, M1, M7	11-Jul-2016	10-Jul-2016	**1**	----	----	----
Soil Glass Jar - Unpreserved M8, M5, M1, M7	11-Jul-2016	10-Jul-2016	**1**	14-Jul-2016	10-Jul-2016	**4**
Soil Glass Jar - Unpreserved 18, 19	----	----	----	14-Jul-2016	11-Jul-2016	**3**
Soil Glass Jar - Unpreserved 21, 22	----	----	----	14-Jul-2016	12-Jul-2016	**2**
Soil Glass Jar - Unpreserved 20	----	----	----	14-Jul-2016	13-Jul-2016	**1**
EP080: BTEXN						
Soil Glass Jar - Unpreserved M6, M3, M9, M10, M4, M12, M11, M2	11-Jul-2016	09-Jul-2016	**2**	14-Jul-2016	09-Jul-2016	**5**
Soil Glass Jar - Unpreserved M8, M5, M1, M7	11-Jul-2016	10-Jul-2016	**1**	14-Jul-2016	10-Jul-2016	**4**
Soil Glass Jar - Unpreserved 18, 19	----	----	----	14-Jul-2016	11-Jul-2016	**3**
Soil Glass Jar - Unpreserved 21, 22	----	----	----	14-Jul-2016	12-Jul-2016	**2**
Soil Glass Jar - Unpreserved 20	----	----	----	14-Jul-2016	13-Jul-2016	**1**

Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

Quality Control Sample Type / Method	Count: QC	Count: Regular	Rate (%): Actual	Rate (%): Expected	Quality Control Specification
Matrix Spikes (MS)					
Total Metals by ICP-MS - Suite Z	0	27	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: **SOIL**

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
EA055: Moisture Content							
Soil Glass Jar - Unpreserved (EA055-103) 23b, 24b, DUP1	**02-Jul-2016**	**----**	----	----	**11-Jul-2016**	16-Jul-2016	✓
Soil Glass Jar - Unpreserved (EA055-103) DUP2, TRIP1, TRIP BLANK	**02-Jul-2016**	**----**	----	----	**12-Jul-2016**	16-Jul-2016	✓
Soil Glass Jar - Unpreserved (EA055-103) M25	**04-Jul-2016**	**----**	----	----	**12-Jul-2016**	18-Jul-2016	✓
Soil Glass Jar - Unpreserved (EA055-103) M31, M37	**05-Jul-2016**	**----**	----	----	**12-Jul-2016**	19-Jul-2016	✓
Soil Glass Jar - Unpreserved (EA055-103) M43	**06-Jul-2016**	**----**	----	----	**12-Jul-2016**	20-Jul-2016	✓
Soil Glass Jar - Unpreserved (EA055-103) M6, M3, M9, M10, M4, M12, M11, M2	**25-Jun-2016**	**----**	----	----	**11-Jul-2016**	09-Jul-2016	×
Soil Glass Jar - Unpreserved (EA055-103) M8, M5, M1, M7	**26-Jun-2016**	**----**	----	----	**11-Jul-2016**	10-Jul-2016	×
Soil Glass Jar - Unpreserved (EA055-103) 18, 19	**27-Jun-2016**	**----**	----	----	**11-Jul-2016**	11-Jul-2016	✓
Soil Glass Jar - Unpreserved (EA055-103) 21, 22	**28-Jun-2016**	**----**	----	----	**11-Jul-2016**	12-Jul-2016	✓
Soil Glass Jar - Unpreserved (EA055-103) 20	**29-Jun-2016**	**----**	----	----	**11-Jul-2016**	13-Jul-2016	✓

Matrix: **SOIL**

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
EA150: Particle Sizing							
Soil Glass Jar - Unpreserved (EA150H)							
23b, 24b	**02-Jul-2016**	**----**	----	----	**26-Jul-2016**	29-Dec-2016	✓
Soil Glass Jar - Unpreserved (EA150H)							
M31, M37	**05-Jul-2016**	**----**	----	----	**26-Jul-2016**	01-Jan-2017	✓
Soil Glass Jar - Unpreserved (EA150H)							
M43	**06-Jul-2016**	**----**	----	----	**26-Jul-2016**	02-Jan-2017	✓
Soil Glass Jar - Unpreserved (EA150H)							
M6, M3, M9, M10, M4, M12, M11, M2	**25-Jun-2016**	**----**	----	----	**26-Jul-2016**	22-Dec-2016	✓
Soil Glass Jar - Unpreserved (EA150H)							
M8, M5, M1, M7	**26-Jun-2016**	**----**	----	----	**26-Jul-2016**	23-Dec-2016	✓
Soil Glass Jar - Unpreserved (EA150H)							
18, 19	**27-Jun-2016**	**----**	----	----	**26-Jul-2016**	24-Dec-2016	✓
Soil Glass Jar - Unpreserved (EA150H)							
21, 22	**28-Jun-2016**	**----**	----	----	**26-Jul-2016**	25-Dec-2016	✓
Soil Glass Jar - Unpreserved (EA150H)							
20	**29-Jun-2016**	**----**	----	----	**26-Jul-2016**	26-Dec-2016	✓
EA150: Soil Classification based on Particle Size							
Soil Glass Jar - Unpreserved (EA150H)							
23b, 24b	**02-Jul-2016**	**----**	----	----	**26-Jul-2016**	29-Dec-2016	✓
Soil Glass Jar - Unpreserved (EA150H)							
M31, M37	**05-Jul-2016**	**----**	----	----	**26-Jul-2016**	01-Jan-2017	✓
Soil Glass Jar - Unpreserved (EA150H)							
M43	**06-Jul-2016**	**----**	----	----	**26-Jul-2016**	02-Jan-2017	✓
Soil Glass Jar - Unpreserved (EA150H)							
M6, M3, M9, M10, M4, M12, M11, M2	**25-Jun-2016**	**----**	----	----	**26-Jul-2016**	22-Dec-2016	✓
Soil Glass Jar - Unpreserved (EA150H)							
M8, M5, M1, M7	**26-Jun-2016**	**----**	----	----	**26-Jul-2016**	23-Dec-2016	✓
Soil Glass Jar - Unpreserved (EA150H)							
18, 19	**27-Jun-2016**	**----**	----	----	**26-Jul-2016**	24-Dec-2016	✓
Soil Glass Jar - Unpreserved (EA150H)							
21, 22	**28-Jun-2016**	**----**	----	----	**26-Jul-2016**	25-Dec-2016	✓
Soil Glass Jar - Unpreserved (EA150H)							
20	**29-Jun-2016**	**----**	----	----	**26-Jul-2016**	26-Dec-2016	✓

Matrix: **SOIL**

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
EA152: Soil Particle Density							
Soil Glass Jar - Unpreserved (EA152)							
23b, 24b	**02-Jul-2016**	**----**	----	----	**26-Jul-2016**	29-Dec-2016	✓
Soil Glass Jar - Unpreserved (EA152)							
M31, M37	**05-Jul-2016**	**----**	----	----	**26-Jul-2016**	01-Jan-2017	✓
Soil Glass Jar - Unpreserved (EA152)							
M43	**06-Jul-2016**	**----**	----	----	**26-Jul-2016**	02-Jan-2017	✓
Soil Glass Jar - Unpreserved (EA152)							
M6, M3, M9, M10, M4, M12, M11, M2	**25-Jun-2016**	**----**	----	----	**26-Jul-2016**	22-Dec-2016	✓
Soil Glass Jar - Unpreserved (EA152)							
M8, M5, M1, M7	**26-Jun-2016**	**----**	----	----	**26-Jul-2016**	23-Dec-2016	✓
Soil Glass Jar - Unpreserved (EA152)							
18, 19	**27-Jun-2016**	**----**	----	----	**26-Jul-2016**	24-Dec-2016	✓
Soil Glass Jar - Unpreserved (EA152)							
21, 22	**28-Jun-2016**	**----**	----	----	**26-Jul-2016**	25-Dec-2016	✓
Soil Glass Jar - Unpreserved (EA152)							
20	**29-Jun-2016**	**----**	----	----	**26-Jul-2016**	26-Dec-2016	✓

Matrix: **SOIL**

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
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) DUP2, TRIP1, TRIP BLANK	**02-Jul-2016**	**12-Jul-2016**	29-Dec-2016	✓	**13-Jul-2016**	29-Dec-2016	✓
Soil Glass Jar - Unpreserved (EG005T) 23b, 24b, DUP1	**02-Jul-2016**	**13-Jul-2016**	29-Dec-2016	✓	**13-Jul-2016**	29-Dec-2016	✓
Soil Glass Jar - Unpreserved (EG005T) M25	**04-Jul-2016**	**12-Jul-2016**	31-Dec-2016	✓	**13-Jul-2016**	31-Dec-2016	✓
Soil Glass Jar - Unpreserved (EG005T) M31, M37	**05-Jul-2016**	**12-Jul-2016**	01-Jan-2017	✓	**13-Jul-2016**	01-Jan-2017	✓
Soil Glass Jar - Unpreserved (EG005T) M43	**06-Jul-2016**	**12-Jul-2016**	02-Jan-2017	✓	**13-Jul-2016**	02-Jan-2017	✓
Soil Glass Jar - Unpreserved (EG005T) M6, M3, M9, M10, M4, M12, M11, M2	**25-Jun-2016**	**13-Jul-2016**	22-Dec-2016	✓	**13-Jul-2016**	22-Dec-2016	✓
Soil Glass Jar - Unpreserved (EG005T) M8, M5, M1, M7	**26-Jun-2016**	**13-Jul-2016**	23-Dec-2016	✓	**13-Jul-2016**	23-Dec-2016	✓
Soil Glass Jar - Unpreserved (EG005T) 18, 19	**27-Jun-2016**	**13-Jul-2016**	24-Dec-2016	✓	**13-Jul-2016**	24-Dec-2016	✓
Soil Glass Jar - Unpreserved (EG005T) 21, 22	**28-Jun-2016**	**13-Jul-2016**	25-Dec-2016	✓	**13-Jul-2016**	25-Dec-2016	✓
Soil Glass Jar - Unpreserved (EG005T) 20	**29-Jun-2016**	**13-Jul-2016**	26-Dec-2016	✓	**13-Jul-2016**	26-Dec-2016	✓

Matrix: **SOIL**

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
EG020T: Total Metals by ICP-MS							
Soil Glass Jar - Unpreserved (EG020Y-T) DUP2, TRIP1, TRIP BLANK	**02-Jul-2016**	**12-Jul-2016**	29-Dec-2016	✓	**13-Jul-2016**	29-Dec-2016	✓
Soil Glass Jar - Unpreserved (EG020Y-T) 23b, 24b, DUP1	**02-Jul-2016**	**13-Jul-2016**	29-Dec-2016	✓	**13-Jul-2016**	29-Dec-2016	✓
Soil Glass Jar - Unpreserved (EG020Z-T) 23b, 24b, DUP1, DUP2, TRIP1, TRIP BLANK	**02-Jul-2016**	**15-Jul-2016**	29-Dec-2016	✓	**15-Jul-2016**	29-Dec-2016	✓
Soil Glass Jar - Unpreserved (EG020Y-T) M25	**04-Jul-2016**	**12-Jul-2016**	31-Dec-2016	✓	**13-Jul-2016**	31-Dec-2016	✓
Soil Glass Jar - Unpreserved (EG020Z-T) M25	**04-Jul-2016**	**15-Jul-2016**	31-Dec-2016	✓	**15-Jul-2016**	31-Dec-2016	✓
Soil Glass Jar - Unpreserved (EG020Y-T) M31, M37	**05-Jul-2016**	**12-Jul-2016**	01-Jan-2017	✓	**13-Jul-2016**	01-Jan-2017	✓
Soil Glass Jar - Unpreserved (EG020Z-T) M31, M37	**05-Jul-2016**	**15-Jul-2016**	01-Jan-2017	✓	**15-Jul-2016**	01-Jan-2017	✓
Soil Glass Jar - Unpreserved (EG020Y-T) M43	**06-Jul-2016**	**12-Jul-2016**	02-Jan-2017	✓	**13-Jul-2016**	02-Jan-2017	✓
Soil Glass Jar - Unpreserved (EG020Z-T) M43	**06-Jul-2016**	**15-Jul-2016**	02-Jan-2017	✓	**15-Jul-2016**	02-Jan-2017	✓
Soil Glass Jar - Unpreserved (EG020Y-T) M6, M3, M9, M10, M4, M12, M11, M2	**25-Jun-2016**	**13-Jul-2016**	22-Dec-2016	✓	**13-Jul-2016**	22-Dec-2016	✓
Soil Glass Jar - Unpreserved (EG020Z-T) M6, M3, M9, M10, M4, M12, M11, M2	**25-Jun-2016**	**15-Jul-2016**	22-Dec-2016	✓	**15-Jul-2016**	22-Dec-2016	✓
Soil Glass Jar - Unpreserved (EG020Y-T) M8, M5, M1, M7	**26-Jun-2016**	**13-Jul-2016**	23-Dec-2016	✓	**13-Jul-2016**	23-Dec-2016	✓
Soil Glass Jar - Unpreserved (EG020Z-T) M8, M5, M1, M7	**26-Jun-2016**	**15-Jul-2016**	23-Dec-2016	✓	**15-Jul-2016**	23-Dec-2016	✓
Soil Glass Jar - Unpreserved (EG020Y-T) 18, 19	**27-Jun-2016**	**13-Jul-2016**	24-Dec-2016	✓	**13-Jul-2016**	24-Dec-2016	✓
Soil Glass Jar - Unpreserved (EG020Z-T) 18, 19	**27-Jun-2016**	**15-Jul-2016**	24-Dec-2016	✓	**15-Jul-2016**	24-Dec-2016	✓
Soil Glass Jar - Unpreserved (EG020Y-T) 21, 22	**28-Jun-2016**	**13-Jul-2016**	25-Dec-2016	✓	**13-Jul-2016**	25-Dec-2016	✓

Matrix: **SOIL**

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
EG020T: Total Metals by ICP-MS - Continued							
Soil Glass Jar - Unpreserved (EG020Z-T)							
21, 22	**28-Jun-2016**	**15-Jul-2016**	25-Dec-2016	✓	**15-Jul-2016**	25-Dec-2016	✓
Soil Glass Jar - Unpreserved (EG020Y-T)							
20	**29-Jun-2016**	**13-Jul-2016**	26-Dec-2016	✓	**13-Jul-2016**	26-Dec-2016	✓
Soil Glass Jar - Unpreserved (EG020Z-T)							
20	**29-Jun-2016**	**15-Jul-2016**	26-Dec-2016	✓	**15-Jul-2016**	26-Dec-2016	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
DUP2, TRIP1, TRIP BLANK	**02-Jul-2016**	**12-Jul-2016**	30-Jul-2016	✓	**13-Jul-2016**	30-Jul-2016	✓
Soil Glass Jar - Unpreserved (EG035T)							
23b, 24b, DUP1	**02-Jul-2016**	**13-Jul-2016**	30-Jul-2016	✓	**13-Jul-2016**	30-Jul-2016	✓
Soil Glass Jar - Unpreserved (EG035T)							
M25	**04-Jul-2016**	**12-Jul-2016**	01-Aug-2016	✓	**13-Jul-2016**	01-Aug-2016	✓
Soil Glass Jar - Unpreserved (EG035T)							
M31, M37	**05-Jul-2016**	**12-Jul-2016**	02-Aug-2016	✓	**13-Jul-2016**	02-Aug-2016	✓
Soil Glass Jar - Unpreserved (EG035T)							
M43	**06-Jul-2016**	**12-Jul-2016**	03-Aug-2016	✓	**13-Jul-2016**	03-Aug-2016	✓
Soil Glass Jar - Unpreserved (EG035T)							
M6, M3, M9, M10, M4, M12, M11, M2	**25-Jun-2016**	**13-Jul-2016**	23-Jul-2016	✓	**13-Jul-2016**	23-Jul-2016	✓
Soil Glass Jar - Unpreserved (EG035T)							
M8, M5, M1, M7	**26-Jun-2016**	**13-Jul-2016**	24-Jul-2016	✓	**13-Jul-2016**	24-Jul-2016	✓
Soil Glass Jar - Unpreserved (EG035T)							
18, 19	**27-Jun-2016**	**13-Jul-2016**	25-Jul-2016	✓	**13-Jul-2016**	25-Jul-2016	✓
Soil Glass Jar - Unpreserved (EG035T)							
21, 22	**28-Jun-2016**	**13-Jul-2016**	26-Jul-2016	✓	**13-Jul-2016**	26-Jul-2016	✓
Soil Glass Jar - Unpreserved (EG035T)							
20	**29-Jun-2016**	**13-Jul-2016**	27-Jul-2016	✓	**13-Jul-2016**	27-Jul-2016	✓

Matrix: **SOIL**

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
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Soil Glass Jar - Unpreserved (EK059G)							
23b, 24b, DUP1, DUP2, TRIP1, TRIP BLANK	**02-Jul-2016**	**13-Jul-2016**	29-Dec-2016	✓	**13-Jul-2016**	29-Dec-2016	✓
Soil Glass Jar - Unpreserved (EK059G)							
M25	**04-Jul-2016**	**13-Jul-2016**	31-Dec-2016	✓	**13-Jul-2016**	31-Dec-2016	✓
Soil Glass Jar - Unpreserved (EK059G)							
M31, M37	**05-Jul-2016**	**13-Jul-2016**	01-Jan-2017	✓	**13-Jul-2016**	01-Jan-2017	✓
Soil Glass Jar - Unpreserved (EK059G)							
M43	**06-Jul-2016**	**13-Jul-2016**	02-Jan-2017	✓	**13-Jul-2016**	02-Jan-2017	✓
Soil Glass Jar - Unpreserved (EK059G)							
M6, M3, M9, M10, M4, M12, M11, M2	**25-Jun-2016**	**13-Jul-2016**	22-Dec-2016	✓	**13-Jul-2016**	22-Dec-2016	✓
Soil Glass Jar - Unpreserved (EK059G)							
M8, M5, M1, M7	**26-Jun-2016**	**13-Jul-2016**	23-Dec-2016	✓	**13-Jul-2016**	23-Dec-2016	✓
Soil Glass Jar - Unpreserved (EK059G)							
18, 19	**27-Jun-2016**	**13-Jul-2016**	24-Dec-2016	✓	**13-Jul-2016**	24-Dec-2016	✓
Soil Glass Jar - Unpreserved (EK059G)							
21, 22	**28-Jun-2016**	**13-Jul-2016**	25-Dec-2016	✓	**13-Jul-2016**	25-Dec-2016	✓
Soil Glass Jar - Unpreserved (EK059G)							
20	**29-Jun-2016**	**13-Jul-2016**	26-Dec-2016	✓	**13-Jul-2016**	26-Dec-2016	✓

Matrix: **SOIL**

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
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Soil Glass Jar - Unpreserved (EK061G) 23b, 24b, DUP1, DUP2, TRIP1, TRIP BLANK	**02-Jul-2016**	**14-Jul-2016**	29-Dec-2016	✓	**14-Jul-2016**	29-Dec-2016	✓
Soil Glass Jar - Unpreserved (EK061G) M25	**04-Jul-2016**	**14-Jul-2016**	31-Dec-2016	✓	**14-Jul-2016**	31-Dec-2016	✓
Soil Glass Jar - Unpreserved (EK061G) M31, M37	**05-Jul-2016**	**14-Jul-2016**	01-Jan-2017	✓	**14-Jul-2016**	01-Jan-2017	✓
Soil Glass Jar - Unpreserved (EK061G) M43	**06-Jul-2016**	**14-Jul-2016**	02-Jan-2017	✓	**14-Jul-2016**	02-Jan-2017	✓
Soil Glass Jar - Unpreserved (EK061G) M6, M3, M9, M10, M4, M12, M11, M2	**25-Jun-2016**	**14-Jul-2016**	22-Dec-2016	✓	**14-Jul-2016**	22-Dec-2016	✓
Soil Glass Jar - Unpreserved (EK061G) M8, M5, M1, M7	**26-Jun-2016**	**14-Jul-2016**	23-Dec-2016	✓	**14-Jul-2016**	23-Dec-2016	✓
Soil Glass Jar - Unpreserved (EK061G) 18, 19	**27-Jun-2016**	**14-Jul-2016**	24-Dec-2016	✓	**14-Jul-2016**	24-Dec-2016	✓
Soil Glass Jar - Unpreserved (EK061G) 21, 22	**28-Jun-2016**	**14-Jul-2016**	25-Dec-2016	✓	**14-Jul-2016**	25-Dec-2016	✓
Soil Glass Jar - Unpreserved (EK061G) 20	**29-Jun-2016**	**14-Jul-2016**	26-Dec-2016	✓	**14-Jul-2016**	26-Dec-2016	✓

Matrix: **SOIL**

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
EK067G: Total Phosphorus as P by Discrete Analyser							
Soil Glass Jar - Unpreserved (EK067G)							
23b, 24b, DUP1, DUP2, TRIP1, TRIP BLANK	**02-Jul-2016**	**14-Jul-2016**	29-Dec-2016	✓	**14-Jul-2016**	29-Dec-2016	✓
Soil Glass Jar - Unpreserved (EK067G)							
M25	**04-Jul-2016**	**14-Jul-2016**	31-Dec-2016	✓	**14-Jul-2016**	31-Dec-2016	✓
Soil Glass Jar - Unpreserved (EK067G)							
M31, M37	**05-Jul-2016**	**14-Jul-2016**	01-Jan-2017	✓	**14-Jul-2016**	01-Jan-2017	✓
Soil Glass Jar - Unpreserved (EK067G)							
M43	**06-Jul-2016**	**14-Jul-2016**	02-Jan-2017	✓	**14-Jul-2016**	02-Jan-2017	✓
Soil Glass Jar - Unpreserved (EK067G)							
M6, M3, M9, M10, M4, M12, M11, M2	**25-Jun-2016**	**14-Jul-2016**	22-Dec-2016	✓	**14-Jul-2016**	22-Dec-2016	✓
Soil Glass Jar - Unpreserved (EK067G)							
M8, M5, M1, M7	**26-Jun-2016**	**14-Jul-2016**	23-Dec-2016	✓	**14-Jul-2016**	23-Dec-2016	✓
Soil Glass Jar - Unpreserved (EK067G)							
18, 19	**27-Jun-2016**	**14-Jul-2016**	24-Dec-2016	✓	**14-Jul-2016**	24-Dec-2016	✓
Soil Glass Jar - Unpreserved (EK067G)							
21, 22	**28-Jun-2016**	**14-Jul-2016**	25-Dec-2016	✓	**14-Jul-2016**	25-Dec-2016	✓
Soil Glass Jar - Unpreserved (EK067G)							
20	**29-Jun-2016**	**14-Jul-2016**	26-Dec-2016	✓	**14-Jul-2016**	26-Dec-2016	✓

Matrix: **SOIL**

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
EP004: Organic Matter							
Soil Glass Jar - Unpreserved (EP004) 23b, 24b, DUP1, DUP2, TRIP1, TRIP BLANK	**02-Jul-2016**	**12-Jul-2016**	30-Jul-2016	✓	**18-Jul-2016**	30-Jul-2016	✓
Soil Glass Jar - Unpreserved (EP004) M25	**04-Jul-2016**	**12-Jul-2016**	01-Aug-2016	✓	**18-Jul-2016**	01-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP004) M31, M37	**05-Jul-2016**	**12-Jul-2016**	02-Aug-2016	✓	**18-Jul-2016**	02-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP004) M43	**06-Jul-2016**	**12-Jul-2016**	03-Aug-2016	✓	**18-Jul-2016**	03-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP004) M6, M3, M9, M10, M4, M12, M11, M2	**25-Jun-2016**	**12-Jul-2016**	23-Jul-2016	✓	**18-Jul-2016**	23-Jul-2016	✓
Soil Glass Jar - Unpreserved (EP004) M8, M5, M1, M7	**26-Jun-2016**	**12-Jul-2016**	24-Jul-2016	✓	**18-Jul-2016**	24-Jul-2016	✓
Soil Glass Jar - Unpreserved (EP004) 18, 19	**27-Jun-2016**	**12-Jul-2016**	25-Jul-2016	✓	**18-Jul-2016**	25-Jul-2016	✓
Soil Glass Jar - Unpreserved (EP004) 21, 22	**28-Jun-2016**	**12-Jul-2016**	26-Jul-2016	✓	**18-Jul-2016**	26-Jul-2016	✓
Soil Glass Jar - Unpreserved (EP004) 20	**29-Jun-2016**	**12-Jul-2016**	27-Jul-2016	✓	**18-Jul-2016**	27-Jul-2016	✓

Matrix: **SOIL**

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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM)) 23b, 24b, DUP1	**02-Jul-2016**	**11-Jul-2016**	16-Jul-2016	✓	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) DUP2, TRIP1, TRIP BLANK	**02-Jul-2016**	**13-Jul-2016**	16-Jul-2016	✓	**14-Jul-2016**	22-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) M25	**04-Jul-2016**	**13-Jul-2016**	18-Jul-2016	✓	**14-Jul-2016**	22-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) M31, M37	**05-Jul-2016**	**13-Jul-2016**	19-Jul-2016	✓	**14-Jul-2016**	22-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) M43	**06-Jul-2016**	**13-Jul-2016**	20-Jul-2016	✓	**14-Jul-2016**	22-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) M6, M3, M9, M10, M4, M12, M11, M2	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) M8, M5, M1, M7	**26-Jun-2016**	**11-Jul-2016**	10-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) 18, 19	**27-Jun-2016**	**11-Jul-2016**	11-Jul-2016	✓	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) 21, 22	**28-Jun-2016**	**11-Jul-2016**	12-Jul-2016	✓	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) 20	**29-Jun-2016**	**11-Jul-2016**	13-Jul-2016	✓	**12-Jul-2016**	20-Aug-2016	✓

Matrix: **SOIL**

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
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP071) 23b, 24b, DUP1	**02-Jul-2016**	**11-Jul-2016**	16-Jul-2016	✓	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) 23b, 24b, DUP1	**02-Jul-2016**	**11-Jul-2016**	16-Jul-2016	✓	**14-Jul-2016**	16-Jul-2016	✓
Soil Glass Jar - Unpreserved (EP080) DUP2, TRIP1, TRIP BLANK	**02-Jul-2016**	**12-Jul-2016**	16-Jul-2016	✓	**13-Jul-2016**	16-Jul-2016	✓
Soil Glass Jar - Unpreserved (EP071) DUP2, TRIP1, TRIP BLANK	**02-Jul-2016**	**13-Jul-2016**	16-Jul-2016	✓	**14-Jul-2016**	22-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M25	**04-Jul-2016**	**12-Jul-2016**	18-Jul-2016	✓	**13-Jul-2016**	18-Jul-2016	✓
Soil Glass Jar - Unpreserved (EP071) M25	**04-Jul-2016**	**13-Jul-2016**	18-Jul-2016	✓	**14-Jul-2016**	22-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M31, M37	**05-Jul-2016**	**12-Jul-2016**	19-Jul-2016	✓	**13-Jul-2016**	19-Jul-2016	✓
Soil Glass Jar - Unpreserved (EP071) M31, M37	**05-Jul-2016**	**13-Jul-2016**	19-Jul-2016	✓	**14-Jul-2016**	22-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M43	**06-Jul-2016**	**12-Jul-2016**	20-Jul-2016	✓	**13-Jul-2016**	20-Jul-2016	✓
Soil Glass Jar - Unpreserved (EP071) M43	**06-Jul-2016**	**13-Jul-2016**	20-Jul-2016	✓	**14-Jul-2016**	22-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP071) M6	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M6	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**14-Jul-2016**	09-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) M3	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M3	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**14-Jul-2016**	09-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) M9	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M9	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**14-Jul-2016**	09-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) M10	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M10	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**14-Jul-2016**	09-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) M4	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M4	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**14-Jul-2016**	09-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071)							

Matrix: **SOIL**

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
EP080/071: Total Petroleum Hydrocarbons - Continued							
M12	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M12	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**14-Jul-2016**	09-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) M11	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M11	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**14-Jul-2016**	09-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) M2	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M2	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**14-Jul-2016**	09-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) M8	**26-Jun-2016**	**11-Jul-2016**	10-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M8	**26-Jun-2016**	**11-Jul-2016**	10-Jul-2016	×	**14-Jul-2016**	10-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) M5	**26-Jun-2016**	**11-Jul-2016**	10-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M5	**26-Jun-2016**	**11-Jul-2016**	10-Jul-2016	×	**14-Jul-2016**	10-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) M1	**26-Jun-2016**	**11-Jul-2016**	10-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M1	**26-Jun-2016**	**11-Jul-2016**	10-Jul-2016	×	**14-Jul-2016**	10-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) M7	**26-Jun-2016**	**11-Jul-2016**	10-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M7	**26-Jun-2016**	**11-Jul-2016**	10-Jul-2016	×	**14-Jul-2016**	10-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) 18	**27-Jun-2016**	**11-Jul-2016**	11-Jul-2016	✓	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) 18	**27-Jun-2016**	**11-Jul-2016**	11-Jul-2016	✓	**14-Jul-2016**	11-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) 19	**27-Jun-2016**	**11-Jul-2016**	11-Jul-2016	✓	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) 19	**27-Jun-2016**	**11-Jul-2016**	11-Jul-2016	✓	**14-Jul-2016**	11-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) 21	**28-Jun-2016**	**11-Jul-2016**	12-Jul-2016	✓	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) 21	**28-Jun-2016**	**11-Jul-2016**	12-Jul-2016	✓	**14-Jul-2016**	12-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) 22	**28-Jun-2016**	**11-Jul-2016**	12-Jul-2016	✓	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) 22	**28-Jun-2016**	**11-Jul-2016**	12-Jul-2016	✓	**14-Jul-2016**	12-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) 20	**29-Jun-2016**	**11-Jul-2016**	13-Jul-2016	✓	**12-Jul-2016**	20-Aug-2016	✓

Matrix: **SOIL**

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
EP080/071: Total Petroleum Hydrocarbons - Continued							
Soil Glass Jar - Unpreserved (EP080)							
20	**29-Jun-2016**	**11-Jul-2016**	13-Jul-2016	✓	**14-Jul-2016**	13-Jul-2016	×

Matrix: **SOIL**

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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP071) 23b, 24b, DUP1	**02-Jul-2016**	**11-Jul-2016**	16-Jul-2016	✓	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) 23b, 24b, DUP1	**02-Jul-2016**	**11-Jul-2016**	16-Jul-2016	✓	**14-Jul-2016**	16-Jul-2016	✓
Soil Glass Jar - Unpreserved (EP080) DUP2, TRIP1, TRIP BLANK	**02-Jul-2016**	**12-Jul-2016**	16-Jul-2016	✓	**13-Jul-2016**	16-Jul-2016	✓
Soil Glass Jar - Unpreserved (EP071) DUP2, TRIP1, TRIP BLANK	**02-Jul-2016**	**13-Jul-2016**	16-Jul-2016	✓	**14-Jul-2016**	22-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M25	**04-Jul-2016**	**12-Jul-2016**	18-Jul-2016	✓	**13-Jul-2016**	18-Jul-2016	✓
Soil Glass Jar - Unpreserved (EP071) M25	**04-Jul-2016**	**13-Jul-2016**	18-Jul-2016	✓	**14-Jul-2016**	22-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M31, M37	**05-Jul-2016**	**12-Jul-2016**	19-Jul-2016	✓	**13-Jul-2016**	19-Jul-2016	✓
Soil Glass Jar - Unpreserved (EP071) M31, M37	**05-Jul-2016**	**13-Jul-2016**	19-Jul-2016	✓	**14-Jul-2016**	22-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M43	**06-Jul-2016**	**12-Jul-2016**	20-Jul-2016	✓	**13-Jul-2016**	20-Jul-2016	✓
Soil Glass Jar - Unpreserved (EP071) M43	**06-Jul-2016**	**13-Jul-2016**	20-Jul-2016	✓	**14-Jul-2016**	22-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP071) M6	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M6	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**14-Jul-2016**	09-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) M3	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M3	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**14-Jul-2016**	09-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) M9	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M9	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**14-Jul-2016**	09-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) M10	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M10	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**14-Jul-2016**	09-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) M4	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M4	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**14-Jul-2016**	09-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071)							

Matrix: **SOIL**

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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued							
M12	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M12	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**14-Jul-2016**	09-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) M11	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M11	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**14-Jul-2016**	09-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) M2	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M2	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**14-Jul-2016**	09-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) M8	**26-Jun-2016**	**11-Jul-2016**	10-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M8	**26-Jun-2016**	**11-Jul-2016**	10-Jul-2016	×	**14-Jul-2016**	10-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) M5	**26-Jun-2016**	**11-Jul-2016**	10-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M5	**26-Jun-2016**	**11-Jul-2016**	10-Jul-2016	×	**14-Jul-2016**	10-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) M1	**26-Jun-2016**	**11-Jul-2016**	10-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M1	**26-Jun-2016**	**11-Jul-2016**	10-Jul-2016	×	**14-Jul-2016**	10-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) M7	**26-Jun-2016**	**11-Jul-2016**	10-Jul-2016	×	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) M7	**26-Jun-2016**	**11-Jul-2016**	10-Jul-2016	×	**14-Jul-2016**	10-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) 18	**27-Jun-2016**	**11-Jul-2016**	11-Jul-2016	✓	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) 18	**27-Jun-2016**	**11-Jul-2016**	11-Jul-2016	✓	**14-Jul-2016**	11-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) 19	**27-Jun-2016**	**11-Jul-2016**	11-Jul-2016	✓	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) 19	**27-Jun-2016**	**11-Jul-2016**	11-Jul-2016	✓	**14-Jul-2016**	11-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) 21	**28-Jun-2016**	**11-Jul-2016**	12-Jul-2016	✓	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) 21	**28-Jun-2016**	**11-Jul-2016**	12-Jul-2016	✓	**14-Jul-2016**	12-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) 22	**28-Jun-2016**	**11-Jul-2016**	12-Jul-2016	✓	**12-Jul-2016**	20-Aug-2016	✓
Soil Glass Jar - Unpreserved (EP080) 22	**28-Jun-2016**	**11-Jul-2016**	12-Jul-2016	✓	**14-Jul-2016**	12-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) 20	**29-Jun-2016**	**11-Jul-2016**	13-Jul-2016	✓	**12-Jul-2016**	20-Aug-2016	✓

Matrix: **SOIL**

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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued							
Soil Glass Jar - Unpreserved (EP080) 20	**29-Jun-2016**	**11-Jul-2016**	13-Jul-2016	✓	**14-Jul-2016**	13-Jul-2016	×
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) 23b, 24b, DUP1	**02-Jul-2016**	**11-Jul-2016**	16-Jul-2016	✓	**14-Jul-2016**	16-Jul-2016	✓
Soil Glass Jar - Unpreserved (EP080) DUP2, TRIP1, TRIP BLANK	**02-Jul-2016**	**12-Jul-2016**	16-Jul-2016	✓	**13-Jul-2016**	16-Jul-2016	✓
Soil Glass Jar - Unpreserved (EP080) M25	**04-Jul-2016**	**12-Jul-2016**	18-Jul-2016	✓	**13-Jul-2016**	18-Jul-2016	✓
Soil Glass Jar - Unpreserved (EP080) M31, M37	**05-Jul-2016**	**12-Jul-2016**	19-Jul-2016	✓	**13-Jul-2016**	19-Jul-2016	✓
Soil Glass Jar - Unpreserved (EP080) M43	**06-Jul-2016**	**12-Jul-2016**	20-Jul-2016	✓	**13-Jul-2016**	20-Jul-2016	✓
Soil Glass Jar - Unpreserved (EP080) M6, M3, M9, M10, M4, M12, M11, M2	**25-Jun-2016**	**11-Jul-2016**	09-Jul-2016	×	**14-Jul-2016**	09-Jul-2016	×
Soil Glass Jar - Unpreserved (EP080) M8, M5, M1, M7	**26-Jun-2016**	**11-Jul-2016**	10-Jul-2016	×	**14-Jul-2016**	10-Jul-2016	×
Soil Glass Jar - Unpreserved (EP080) 18, 19	**27-Jun-2016**	**11-Jul-2016**	11-Jul-2016	✓	**14-Jul-2016**	11-Jul-2016	×
Soil Glass Jar - Unpreserved (EP080) 21, 22	**28-Jun-2016**	**11-Jul-2016**	12-Jul-2016	✓	**14-Jul-2016**	12-Jul-2016	×
Soil Glass Jar - Unpreserved (EP080) 20	**29-Jun-2016**	**11-Jul-2016**	13-Jul-2016	✓	**14-Jul-2016**	13-Jul-2016	×

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: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	3	27	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	3	27	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	3	27	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	3	27	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	3	27	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	27	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	27	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite X	EG020X-T	6	27	**22.22**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite Y	EG020Y-T	3	27	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite Z	EG020Z-T	3	27	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosporus By Discrete Analyser	EK067G	3	27	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	27	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	27	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	4	27	**14.81**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite X	EG020X-T	4	27	**14.81**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite Y	EG020Y-T	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite Z	EG020Z-T	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosporus By Discrete Analyser	EK067G	4	27	**14.81**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Total Metals by ICP-MS - Suite X	EG020X-T	4	27	**14.81**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite Y	EG020Y-T	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite Z	EG020Z-T	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosporus By Discrete Analyser	EK067G	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite X	EG020X-T	4	27	**14.81**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite Y	EG020Y-T	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite Z	EG020Z-T	0	27	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Phosporus By Discrete Analyser	EK067G	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	27	**7.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	27	**7.41**	**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
Moisture Content	EA055-103	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Particle Size Analysis by Hydrometer	EA150H	SOIL	Particle Size Analysis by Hydrometer according to AS1289.3.6.3 - 2003
Soil Particle Density	EA152	SOIL	Soil Particle Density by AS 1289.3.5.1-2006 : Methods of testing soils for engineering purposes - Soil classification tests - Determination of the soil particle density of a soil - Standard method
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3)
Total Metals by ICP-MS - Suite X	EG020X-T	SOIL	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.
Total Metals by ICP-MS - Suite Y	EG020Y-T	SOIL	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.
Total Metals by ICP-MS - Suite Z	EG020Z-T	SOIL	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.
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 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)
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	SOIL	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) in a water extract is determined by Chemical Reduction, and direct colourimetry by Discrete Analyser.
TKN as N By Discrete Analyser	EK061G	SOIL	In house: Referenced to APHA 4500-Norg-D Soil samples are digested using Kjeldahl digestion followed by determination by Discrete Analyser.
Total Nitrogen as N (TKN + NOx) By Discrete Analyser	EK062G	SOIL	In house: Referenced to APHA 4500 Norg/NO3- Total Nitrogen is determined as the sum of TKN and Oxidised Nitrrogen, each determined seperately as N.
Total Phosporus By Discrete Analyser	EK067G	SOIL	In house: Referenced to APHA 4500 P-B&F This procedure involves sulfuric acid digestion and quantification using Discrete Analyser.
Organic Matter	EP004	SOIL	In house: Referenced to AS1289.4.1.1 - 1997., Dichromate oxidation method after Walkley and Black. This method is compliant with NEPM (2013) Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40.
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 502 and 507)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	SOIL	In house: Referenced to APHA 4500 Norg- D; APHA 4500 P - H. Macro Kjeldahl digestion.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202)
Organic Matter	EP004-PR	SOIL	In house: Referenced to AS1289.4.1.1 - 1997. Dichromate oxidation method after Walkley and Black. This method is compliant with NEPM (2013) Schedule B(3) (Method 105)
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1619150**	Page	: 1 of 7
Client	: **BMT WBM GROUP LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR JEREMY VISSER	Contact	: John Pickering
Address	: PO BOX 203 SPRING HILL BRISBANE QLD 4004	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +61 07 3831 6744	Telephone	: +61 7 3552 8634
Project	: B21414 Elk	Date Samples Received	: 28-Jul-2016 15:15
Order number	: ----	Date Analysis Commenced	: 29-Jul-2016
C-O-C number	: ----	Issue Date	: 09-Aug-2016 10:47
Sampler	: CONOR JONES, DANIEL MORAN		
Site	: ----		
Quote number	: ----		
No. of samples received	: 3		
No. of samples analysed	: 3		

NATA Accredited Laboratory 825
Accredited for compliance with ISO/IEC 17025.

NATA
WORLD RECOGNISED ACCREDITATION

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

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.

Signatories	*Position*	*Accreditation Category*
Dianne Blane	Laboratory Coordinator (2IC)	Newcastle - Inorganics, Mayfield West, NSW
Greg Vogel	Laboratory Manager	Brisbane Inorganics, Stafford, QLD
Matt Frost	Senior Organic Chemist	Brisbane Inorganics, Stafford, QLD
Matt Frost	Senior Organic Chemist	Brisbane Organics, Stafford, QLD

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 sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

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.

- EA150H: Soil particle density results for sample #003 fell outside the scope of AS1289.3.6.3. Results should be scrutinised accordingly.
- **This work order has been created to rebatch samples from previous ALS workorder EB1617705.**
- 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, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	M25 EB1617705-024	16 EB1617705-028	17 EB1617705-029	----	----
			Client sampling date / time	04-Jul-2016 14:30	03-Jul-2016 10:00	03-Jul-2016 14:00	----	----
Compound	CAS Number	LOR	Unit	EB1619150-001	EB1619150-002	EB1619150-003	--------	--------
				Result	Result	Result	----	----
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1	%	----	31.1	21.0	----	----
EA150: Particle Sizing								
+75µm	----	1	%	1	39	97	----	----
+150µm	----	1	%	<1	4	71	----	----
+300µm	----	1	%	<1	<1	28	----	----
+425µm	----	1	%	<1	<1	6	----	----
+600µm	----	1	%	<1	<1	<1	----	----
+1180µm	----	1	%	<1	<1	<1	----	----
+2.36mm	----	1	%	<1	<1	<1	----	----
+4.75mm	----	1	%	<1	<1	<1	----	----
+9.5mm	----	1	%	<1	<1	<1	----	----
+19.0mm	----	1	%	<1	<1	<1	----	----
+37.5mm	----	1	%	<1	<1	<1	----	----
+75.0mm	----	1	%	<1	<1	<1	----	----
EA150: Soil Classification based on Particle Size								
Clay (<2 µm)	----	1	%	40	10	<1	----	----
Silt (2-60 µm)	----	1	%	56	48	1	----	----
Sand (0.06-2.00 mm)	----	1	%	4	42	99	----	----
Gravel (>2mm)	----	1	%	<1	<1	<1	----	----
Cobbles (>6cm)	----	1	%	<1	<1	<1	----	----
EA152: Soil Particle Density								
ø Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3	2.72	2.73	2.24	----	----
EG005T: Total Metals by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	----	21400	15900	----	----
Arsenic	7440-38-2	5	mg/kg	----	<5	<5	----	----
Barium	7440-39-3	10	mg/kg	----	80	60	----	----
Iron	7439-89-6	50	mg/kg	----	40700	37400	----	----
Strontium	7440-24-6	2	mg/kg	----	99	71	----	----
Tin	7440-31-5	5	mg/kg	----	<5	<5	----	----
EG020T: Total Metals by ICP-MS								
Selenium	7782-49-2	1	mg/kg	----	<1	<1	----	----
Silver	7440-22-4	0.1	mg/kg	----	0.1	<0.1	----	----
Thallium	7440-28-0	0.1	mg/kg	----	<0.1	<0.1	----	----
Beryllium	7440-41-7	0.1	mg/kg	----	0.5	0.4	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	M25 EB1617705-024	16 EB1617705-028	17 EB1617705-029	----	----
				Client sampling date / time	04-Jul-2016 14:30	03-Jul-2016 10:00	03-Jul-2016 14:00	----	----
Compound	CAS Number	LOR	Unit		EB1619150-001	EB1619150-002	EB1619150-003	--------	--------
					Result	Result	Result	----	----
EG020T: Total Metals by ICP-MS - Continued									
Cadmium	7440-43-9	0.1	mg/kg		----	<0.1	<0.1	----	----
Cobalt	7440-48-4	0.1	mg/kg		----	**20.7**	**20.6**	----	----
Chromium	7440-47-3	0.1	mg/kg		----	**47.1**	**45.8**	----	----
Copper	7440-50-8	0.1	mg/kg		----	**41.3**	**23.1**	----	----
Manganese	7439-96-5	0.1	mg/kg		----	**759**	**676**	----	----
Molybdenum	7439-98-7	0.1	mg/kg		----	**0.3**	**0.2**	----	----
Nickel	7440-02-0	0.1	mg/kg		----	**43.4**	**47.4**	----	----
Lead	7439-92-1	0.1	mg/kg		----	**10.1**	**6.1**	----	----
Antimony	7440-36-0	0.1	mg/kg		----	<0.1	<0.1	----	----
Zinc	7440-66-6	0.5	mg/kg		----	**93.5**	**78.3**	----	----
Vanadium	7440-62-2	1	mg/kg		----	**96**	**107**	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		----	<0.1	<0.1	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg		----	<0.1	**0.1**	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	20	mg/kg		----	**590**	**220**	----	----
EK062: Total Nitrogen as N (TKN + NOx)									
^ Total Nitrogen as N	----	20	mg/kg		----	**590**	**220**	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	2	mg/kg		----	**534**	**771**	----	----
EP004: Organic Matter									
Organic Matter	----	0.5	%		----	**1.1**	<0.5	----	----
Total Organic Carbon	----	0.5	%		----	**0.6**	<0.5	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		----	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		----	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg		----	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg		----	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg		----	<0.5	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg		----	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg		----	<0.5	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg		----	<0.5	<0.5	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		----	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	M25 EB1617705-024	16 EB1617705-028	17 EB1617705-029	----	----
				Client sampling date / time	04-Jul-2016 14:30	03-Jul-2016 10:00	03-Jul-2016 14:00	----	----
Compound	CAS Number	LOR	Unit		EB1619150-001	EB1619150-002	EB1619150-003	--------	--------
					Result	Result	Result	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Chrysene	218-01-9	0.5	mg/kg		----	<0.5	<0.5	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		----	<0.5	<0.5	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		----	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		----	<0.5	<0.5	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		----	<0.5	<0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		----	<0.5	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		----	<0.5	<0.5	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		----	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		----	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		----	**0.6**	**0.6**	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		----	**1.2**	**1.2**	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		----	<10	<10	----	----
C10 - C14 Fraction	----	50	mg/kg		----	<50	<50	----	----
C15 - C28 Fraction	----	100	mg/kg		----	<100	<100	----	----
C29 - C36 Fraction	----	100	mg/kg		----	<100	<100	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	<10	<10	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	<10	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg		----	<50	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg		----	<100	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg		----	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	<50	<50	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	<50	<50	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	<0.2	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg		----	<0.5	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		----	<0.5	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	<0.5	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		----	<0.5	<0.5	----	----
^ Sum of BTEX	----	0.2	mg/kg		----	<0.2	<0.2	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	M25 EB1617705-024	16 EB1617705-028	17 EB1617705-029	----	----
				Client sampling date / time	04-Jul-2016 14:30	03-Jul-2016 10:00	03-Jul-2016 14:00	----	----
Compound	CAS Number	LOR	Unit		EB1619150-001	EB1619150-002	EB1619150-003	--------	--------
					Result	Result	Result	----	----
EP080: BTEXN - Continued									
^ **Total Xylenes**	1330-20-7	0.5	mg/kg		----	<0.5	<0.5	----	----
Naphthalene	91-20-3	1	mg/kg		----	<1	<1	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		----	**105**	**104**	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		----	**97.7**	**98.8**	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		----	**66.7**	**61.6**	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		----	**95.9**	**99.9**	----	----
Anthracene-d10	1719-06-8	0.5	%		----	**77.6**	**76.9**	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		----	**85.4**	**86.6**	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	**78.7**	**75.9**	----	----
Toluene-D8	2037-26-5	0.2	%		----	**82.6**	**84.6**	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		----	**80.3**	**80.4**	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	35	155
2-Chlorophenol-D4	93951-73-6	42	153
2.4.6-Tribromophenol	118-79-6	26	157
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	34	157
Anthracene-d10	1719-06-8	37	153
4-Terphenyl-d14	1718-51-0	42	172
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	53	134
Toluene-D8	2037-26-5	60	131
4-Bromofluorobenzene	460-00-4	59	127

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB1619150**	Page	: 1 of 8
Client	: **BMT WBM GROUP LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR JEREMY VISSER	Contact	: John Pickering
Address	: PO BOX 203 SPRING HILL BRISBANE QLD 4004	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +61 07 3831 6744	Telephone	: +61 7 3552 8634
Project	: B21414 Elk	Date Samples Received	: 28-Jul-2016
Order number	: ----	Date Analysis Commenced	: 29-Jul-2016
C-O-C number	: ----	Issue Date	: 09-Aug-2016
Sampler	: CONOR JONES, DANIEL MORAN		
Site	: ----		
Quote number	: ----		
No. of samples received	: 3		
No. of samples analysed	: 3		

NATA Accredited Laboratory 825
Accredited for compliance with ISO/IEC 17025.

NATA WORLD RECOGNISED ACCREDITATION

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted.

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.

Signatories	*Position*	*Accreditation Category*
Dianne Blane	Laboratory Coordinator (2IC)	Newcastle - Inorganics, Mayfield West, NSW
Greg Vogel	Laboratory Manager	Brisbane Inorganics, Stafford, QLD
Matt Frost	Senior Organic Chemist	Brisbane Inorganics, Stafford, QLD
Matt Frost	Senior Organic Chemist	Brisbane Organics, Stafford, QLD

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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: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA055: Moisture Content (QC Lot: 534221)									
EB1619150-002	16 EB1617705-028	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	31.1	32.8	5.52	0% - 20%
EB1619170-010	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	12.8	14.8	14.4	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 539161)									
EB1619254-009	Anonymous	EG005T: Barium	7440-39-3	10	mg/kg	110	110	0.00	0% - 50%
		EG005T: Strontium	7440-24-6	2	mg/kg	6	5	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Aluminium	7429-90-5	50	mg/kg	37900	37800	0.214	0% - 20%
		EG005T: Iron	7439-89-6	50	mg/kg	104000	104000	0.626	0% - 20%
EB1619150-002	16 EB1617705-028	EG005T: Barium	7440-39-3	10	mg/kg	80	80	0.00	No Limit
		EG005T: Strontium	7440-24-6	2	mg/kg	99	100	0.00	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Aluminium	7429-90-5	50	mg/kg	21400	21600	0.647	0% - 20%
		EG005T: Iron	7439-89-6	50	mg/kg	40700	40900	0.389	0% - 20%
EG020T: Total Metals by ICP-MS (QC Lot: 539158)									
EB1619150-002	16 EB1617705-028	EG020X-T: Lead	7439-92-1	0.1	mg/kg	10.1	9.5	5.85	0% - 20%
EB1619150-002	16 EB1617705-028	EG020X-T: Beryllium	7440-41-7	0.1	mg/kg	0.5	0.5	0.00	No Limit
		EG020X-T: Cobalt	7440-48-4	0.1	mg/kg	20.7	21.7	4.78	0% - 20%
		EG020X-T: Chromium	7440-47-3	0.1	mg/kg	47.1	48.9	3.84	0% - 20%
		EG020X-T: Copper	7440-50-8	0.1	mg/kg	41.3	43.2	4.49	0% - 20%
		EG020X-T: Manganese	7439-96-5	0.1	mg/kg	759	790	3.99	0% - 20%
		EG020X-T: Molybdenum	7439-98-7	0.1	mg/kg	0.3	0.3	0.00	No Limit
		EG020X-T: Nickel	7440-02-0	0.1	mg/kg	43.4	45.8	5.57	0% - 20%

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 539158) - continued									
EB1619150-002	16 EB1617705-028	EG020X-T: Antimony	7440-36-0	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
		EG020X-T: Zinc	7440-66-6	0.5	mg/kg	93.5	97.2	3.94	0% - 20%
		EG020X-T: Vanadium	7440-62-2	1	mg/kg	96	99	2.88	0% - 20%
EG020T: Total Metals by ICP-MS (QC Lot: 539159)									
EB1619150-002	16 EB1617705-028	EG020Y-T: Thallium	7440-28-0	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
		EG020Y-T: Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
		EG020Y-T: Selenium	7782-49-2	1	mg/kg	<1	<1	0.00	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 539162)									
EB1619150-002	16 EB1617705-028	EG020Z-T: Silver	7440-22-4	0.1	mg/kg	0.1	<0.1	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 539160)									
EB1619254-009	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	0.1	0.00	No Limit
EB1619150-002	16 EB1617705-028	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 538774)									
EB1619151-030	Anonymous	EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EB1619099-001	Anonymous	EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 541157)									
EB1619150-002	16 EB1617705-028	EK061G: Total Kjeldahl Nitrogen as N	----	20	mg/kg	590	580	0.00	0% - 20%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 541158)									
EB1619150-002	16 EB1617705-028	EK067G: Total Phosphorus as P	----	2	mg/kg	534	560	4.73	0% - 20%
EP004: Organic Matter (QC Lot: 533673)									
EB1619150-002	16 EB1617705-028	EP004: Organic Matter	----	0.5	%	1.1	1.1	0.00	No Limit
		EP004: Total Organic Carbon	----	0.5	%	0.6	0.6	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 534220)									
EB1619150-002	16 EB1617705-028	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 534220) - continued									
EB1619150-002	16 EB1617705-028	EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 534218)									
EB1619150-002	16 EB1617705-028	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EB1619170-010	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 534219)									
EB1619170-010	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EB1619150-002	16 EB1617705-028	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 534218)									
EB1619150-002	16 EB1617705-028	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EB1619170-010	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	13	<10	26.3	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 534219)									
EB1619170-010	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EB1619150-002	16 EB1617705-028	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080: BTEXN (QC Lot: 534218)									
EB1619150-002	16 EB1617705-028	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EB1619170-010	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	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: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 539161)								
EG005T: Aluminium	7429-90-5	50	mg/kg	<50	----	----	----	----
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	118.9 mg/kg	96.7	84	123
EG005T: Barium	7440-39-3	10	mg/kg	<10	105.1967 mg/kg	94.8	89	129
EG005T: Iron	7439-89-6	50	mg/kg	<50	34900 mg/kg	93.9	70	120
EG005T: Strontium	7440-24-6	2	mg/kg	<2	44.50816 mg/kg	113	83	117
EG005T: Tin	7440-31-5	5	mg/kg	<5	5.7 mg/kg	91.6	75	130
EG020T: Total Metals by ICP-MS (QCLot: 539158)								
EG020X-T: Beryllium	7440-41-7	0.1	mg/kg	<0.1	0.64 mg/kg	98.4	79	130
EG020X-T: Cobalt	7440-48-4	0.1	mg/kg	<0.1	11.6 mg/kg	113	88	129
EG020X-T: Chromium	7440-47-3	0.1	mg/kg	<0.1	22.9 mg/kg	107	75	130
EG020X-T: Copper	7440-50-8	0.1	mg/kg	<0.1	52.9 mg/kg	119	84	120
EG020X-T: Manganese	7439-96-5	0.1	mg/kg	<0.1	592 mg/kg	119	86	130
EG020X-T: Molybdenum	7439-98-7	0.1	mg/kg	<0.1	2 mg/kg	113	82	118
EG020X-T: Nickel	7440-02-0	0.1	mg/kg	<0.1	16.1 mg/kg	112	89	127
EG020X-T: Lead	7439-92-1	0.1	mg/kg	<0.1	66.3 mg/kg	114	85	117
EG020X-T: Antimony	7440-36-0	0.1	mg/kg	<0.1	----	----	----	----
EG020X-T: Zinc	7440-66-6	0.5	mg/kg	<0.5	187 mg/kg	118	71	130
EG020X-T: Vanadium	7440-62-2	1	mg/kg	<1	67.8 mg/kg	112	86	130
EG020T: Total Metals by ICP-MS (QCLot: 539159)								
EG020Y-T: Selenium	7782-49-2	1	mg/kg	<1	----	----	----	----
EG020Y-T: Thallium	7440-28-0	0.1	mg/kg	<0.1	----	----	----	----
EG020Y-T: Cadmium	7440-43-9	0.1	mg/kg	<0.1	1.43 mg/kg	117	81	121
EG020T: Total Metals by ICP-MS (QCLot: 539162)								
EG020Z-T: Silver	7440-22-4	0.1	mg/kg	<0.1	3.16 mg/kg	72.5	72	120
EG035T: Total Recoverable Mercury by FIMS (QCLot: 539160)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.09821 mg/kg	116	78	122
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 538774)								
EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.1	2.5 mg/kg	102	86	115
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 541157)								
EK061G: Total Kjeldahl Nitrogen as N	----	20	mg/kg	<20	877 mg/kg	93.6	70	110
				<20	3644 mg/kg	82.7	70	110
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 541158)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 541158) - continued								
EK067G: Total Phosphorus as P	----	2	mg/kg	<2	766 mg/kg	81.8	70	110
				<2	1200 mg/kg	97.0	70	110
EP004: Organic Matter (QCLot: 533673)								
EP004: Organic Matter	----	0.5	%	<0.5	2.3 %	88.2	83	115
EP004: Total Organic Carbon	----	0.5	%	<0.5	1.3 %	88.2	85	115
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 534220)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	1.5 mg/kg	98.6	74	119
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	1.5 mg/kg	90.7	74	118
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	1.5 mg/kg	98.2	83	121
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	1.5 mg/kg	94.9	81	116
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	1.5 mg/kg	104	72	117
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	1.5 mg/kg	99.4	72	115
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	1.5 mg/kg	101	70	116
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	1.5 mg/kg	102	70	134
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	1.5 mg/kg	87.5	64	120
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	1.5 mg/kg	114	66	119
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	1.5 mg/kg	82.8	59	129
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	1.5 mg/kg	96.6	70	129
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	1.5 mg/kg	84.9	76	121
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	1.5 mg/kg	91.7	53	135
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	1.5 mg/kg	93.3	45	134
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	1.5 mg/kg	105	64	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 534218)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	16 mg/kg	98.7	66	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 534219)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	318 mg/kg	89.7	79	123
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	531 mg/kg	89.5	77	123
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 534218)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	18.5 mg/kg	96.9	66	119
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 534219)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	428 mg/kg	90.0	81	122
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	395 mg/kg	88.3	74	122
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
EP080: BTEXN (QCLot: 534218)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	101	73	105
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	92.2	73	105

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080: BTEXN (QCLot: 534218) - continued								
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	94.4	67	104
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	96.6	66	106
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	95.9	68	105
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	92.4	72	115

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: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005T: Total Metals by ICP-AES (QCLot: 539161)							
EB1619150-003	17 EB1617705-029	EG005T: Arsenic	7440-38-2	50 mg/kg	92.4	70	130
		EG005T: Barium	7440-39-3	50 mg/kg	117	70	130
EG020T: Total Metals by ICP-MS (QCLot: 539158)							
EB1619150-003	17 EB1617705-029	EG020X-T: Lead	7439-92-1	50 mg/kg	105	70	130
EB1619150-003	17 EB1617705-029	EG020X-T: Beryllium	7440-41-7	5 mg/kg	90.8	70	130
		EG020X-T: Cobalt	7440-48-4	50 mg/kg	126	70	130
		EG020X-T: Chromium	7440-47-3	50 mg/kg	119	70	130
		EG020X-T: Copper	7440-50-8	50 mg/kg	125	70	130
		EG020X-T: Manganese	7439-96-5	50 mg/kg	# Not Determined	70	130
		EG020X-T: Nickel	7440-02-0	50 mg/kg	120	70	130
		EG020X-T: Zinc	7440-66-6	50 mg/kg	115	70	130
		EG020X-T: Vanadium	7440-62-2	50 mg/kg	109	70	130
EG020T: Total Metals by ICP-MS (QCLot: 539159)							
EB1619150-003	17 EB1617705-029	EG020Y-T: Cadmium	7440-43-9	25 mg/kg	119	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 539160)							
EB1619150-003	17 EB1617705-029	EG035T: Mercury	7439-97-6	2.5 mg/kg	122	70	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 538774)							
EB1619099-005	Anonymous	EK059G: Nitrite + Nitrate as N (Sol.)	----	2 mg/kg	98.0	70	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 541157)							
EB1619150-003	17 EB1617705-029	EK061G: Total Kjeldahl Nitrogen as N	----	500 mg/kg	99.2	70	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 541158)							
EB1619150-003	17 EB1617705-029						

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 541158) - continued							
EB1619150-003	17 EB1617705-029	EK067G: Total Phosphorus as P	----	100 mg/kg	# Not Determined	70	130
EP004: Organic Matter (QCLot: 533673)							
EB1619150-003	17 EB1617705-029	EP004: Organic Matter	----	1.84 %	81.9	70	130
		EP004: Total Organic Carbon	----	1.04 %	81.6	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 534220)							
EB1619150-003	17 EB1617705-029	EP075(SIM): Acenaphthene	83-32-9	1.5 mg/kg	92.4	70	130
		EP075(SIM): Pyrene	129-00-0	1.5 mg/kg	99.5	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 534218)							
EB1619150-003	17 EB1617705-029	EP080: C6 - C9 Fraction	----	8 mg/kg	72.3	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 534219)							
EB1619150-003	17 EB1617705-029	EP071: C10 - C14 Fraction	----	318 mg/kg	88.8	70	130
		EP071: C15 - C28 Fraction	----	531 mg/kg	89.6	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 534218)							
EB1619150-003	17 EB1617705-029	EP080: C6 - C10 Fraction	C6_C10	8 mg/kg	72.0	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 534219)							
EB1619150-003	17 EB1617705-029	EP071: >C10 - C16 Fraction	----	428 mg/kg	89.7	70	130
		EP071: >C16 - C34 Fraction	----	395 mg/kg	88.6	70	130
EP080: BTEXN (QCLot: 534218)							
EB1619150-003	17 EB1617705-029	EP080: Benzene	71-43-2	2 mg/kg	75.9	70	130
		EP080: Toluene	108-88-3	2 mg/kg	71.4	70	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB1619150**	Page	: 1 of 8
Client	: **BMT WBM GROUP LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR JEREMY VISSER	Telephone	: +61 7 3552 8634
Project	: B21414 Elk	Date Samples Received	: 28-Jul-2016
Site	: ----	Issue Date	: 09-Aug-2016
Sampler	: CONOR JONES, DANIEL MORAN	No. of samples received	: 3
Order number	: ----	No. of samples analysed	: 3

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: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EG020T: Total Metals by ICP-MS	EB1619150--003	17 EB1617705-029	**Manganese**	7439-96-5	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EK067G: Total Phosphorus as P by Discrete Analyser	EB1619150--003	17 EB1617705-029	**Total Phosphorus as P**	----	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method / Container / Client Sample ID(s)		Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA055: Moisture Content							
Soil Glass Jar - Unpreserved							
16 - EB1617705-028,	17 - EB1617705-029	----	----	----	29-Jul-2016	17-Jul-2016	**12**
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved							
16 - EB1617705-028,	17 - EB1617705-029	04-Aug-2016	31-Jul-2016	**4**	05-Aug-2016	31-Jul-2016	**5**
EP004: Organic Matter							
Soil Glass Jar - Unpreserved							
16 - EB1617705-028,	17 - EB1617705-029	----	----	----	02-Aug-2016	31-Jul-2016	**2**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved							
16 - EB1617705-028,	17 - EB1617705-029	29-Jul-2016	17-Jul-2016	**12**	----	----	----
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved							
16 - EB1617705-028,	17 - EB1617705-029	29-Jul-2016	17-Jul-2016	**12**	01-Aug-2016	17-Jul-2016	**15**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved							
16 - EB1617705-028,	17 - EB1617705-029	29-Jul-2016	17-Jul-2016	**12**	01-Aug-2016	17-Jul-2016	**15**
EP080: BTEXN							
Soil Glass Jar - Unpreserved							
16 - EB1617705-028,	17 - EB1617705-029	29-Jul-2016	17-Jul-2016	**12**	01-Aug-2016	17-Jul-2016	**15**

Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Matrix Spikes (MS)					
Total Metals by ICP-MS - Suite Z	0	2	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: **SOIL**

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
EA055: Moisture Content							
Soil Glass Jar - Unpreserved (EA055-103)							
16 - EB1617705-028, 17 - EB1617705-029	**03-Jul-2016**	**----**	----	----	**29-Jul-2016**	17-Jul-2016	×
EA150: Particle Sizing							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H)							
16 - EB1617705-028, 17 - EB1617705-029	**03-Jul-2016**	**----**	----	----	**03-Aug-2016**	30-Dec-2016	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H)							
M25 - EB1617705-024	**04-Jul-2016**	**----**	----	----	**03-Aug-2016**	31-Dec-2016	✓
EA150: Soil Classification based on Particle Size							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H)							
16 - EB1617705-028, 17 - EB1617705-029	**03-Jul-2016**	**----**	----	----	**03-Aug-2016**	30-Dec-2016	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA150H)							
M25 - EB1617705-024	**04-Jul-2016**	**----**	----	----	**03-Aug-2016**	31-Dec-2016	✓
EA152: Soil Particle Density							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA152)							
16 - EB1617705-028, 17 - EB1617705-029	**03-Jul-2016**	**----**	----	----	**03-Aug-2016**	30-Dec-2016	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA152)							
M25 - EB1617705-024	**04-Jul-2016**	**----**	----	----	**03-Aug-2016**	31-Dec-2016	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
16 - EB1617705-028, 17 - EB1617705-029	**03-Jul-2016**	**04-Aug-2016**	30-Dec-2016	✓	**05-Aug-2016**	30-Dec-2016	✓
EG020T: Total Metals by ICP-MS							
Soil Glass Jar - Unpreserved (EG020Z-T)							
16 - EB1617705-028, 17 - EB1617705-029	**03-Jul-2016**	**04-Aug-2016**	30-Dec-2016	✓	**05-Aug-2016**	30-Dec-2016	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
16 - EB1617705-028, 17 - EB1617705-029	**03-Jul-2016**	**04-Aug-2016**	31-Jul-2016	×	**05-Aug-2016**	31-Jul-2016	×
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Soil Glass Jar - Unpreserved (EK059G)							
16 - EB1617705-028, 17 - EB1617705-029	**03-Jul-2016**	**05-Aug-2016**	30-Dec-2016	✓	**05-Aug-2016**	30-Dec-2016	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Soil Glass Jar - Unpreserved (EK061G)							
16 - EB1617705-028, 17 - EB1617705-029	**03-Jul-2016**	**05-Aug-2016**	30-Dec-2016	✓	**05-Aug-2016**	30-Dec-2016	✓

Matrix: **SOIL**

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
EK067G: Total Phosphorus as P by Discrete Analyser							
Soil Glass Jar - Unpreserved (EK067G) 16 - EB1617705-028, 17 - EB1617705-029	**03-Jul-2016**	**05-Aug-2016**	30-Dec-2016	✓	**05-Aug-2016**	30-Dec-2016	✓
EP004: Organic Matter							
Soil Glass Jar - Unpreserved (EP004) 16 - EB1617705-028, 17 - EB1617705-029	**03-Jul-2016**	**29-Jul-2016**	31-Jul-2016	✓	**02-Aug-2016**	31-Jul-2016	×
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM)) 16 - EB1617705-028, 17 - EB1617705-029	**03-Jul-2016**	**29-Jul-2016**	17-Jul-2016	×	**01-Aug-2016**	07-Sep-2016	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP071) 16 - EB1617705-028	**03-Jul-2016**	**29-Jul-2016**	17-Jul-2016	×	**01-Aug-2016**	07-Sep-2016	✓
Soil Glass Jar - Unpreserved (EP080) 16 - EB1617705-028	**03-Jul-2016**	**29-Jul-2016**	17-Jul-2016	×	**01-Aug-2016**	17-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) 17 - EB1617705-029	**03-Jul-2016**	**29-Jul-2016**	17-Jul-2016	×	**01-Aug-2016**	07-Sep-2016	✓
Soil Glass Jar - Unpreserved (EP080) 17 - EB1617705-029	**03-Jul-2016**	**29-Jul-2016**	17-Jul-2016	×	**01-Aug-2016**	17-Jul-2016	×
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP071) 16 - EB1617705-028	**03-Jul-2016**	**29-Jul-2016**	17-Jul-2016	×	**01-Aug-2016**	07-Sep-2016	✓
Soil Glass Jar - Unpreserved (EP080) 16 - EB1617705-028	**03-Jul-2016**	**29-Jul-2016**	17-Jul-2016	×	**01-Aug-2016**	17-Jul-2016	×
Soil Glass Jar - Unpreserved (EP071) 17 - EB1617705-029	**03-Jul-2016**	**29-Jul-2016**	17-Jul-2016	×	**01-Aug-2016**	07-Sep-2016	✓
Soil Glass Jar - Unpreserved (EP080) 17 - EB1617705-029	**03-Jul-2016**	**29-Jul-2016**	17-Jul-2016	×	**01-Aug-2016**	17-Jul-2016	×
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) 16 - EB1617705-028, 17 - EB1617705-029	**03-Jul-2016**	**29-Jul-2016**	17-Jul-2016	×	**01-Aug-2016**	17-Jul-2016	×

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: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	2	12	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	16	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite X	EG020X-T	2	2	**100.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite Y	EG020Y-T	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite Z	EG020Z-T	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosporus By Discrete Analyser	EK067G	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	12	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	12	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	2	2	**100.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite X	EG020X-T	2	2	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite Y	EG020Y-T	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite Z	EG020Z-T	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosporus By Discrete Analyser	EK067G	2	2	**100.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Total Metals by ICP-MS - Suite X	EG020X-T	2	2	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite Y	EG020Y-T	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite Z	EG020Z-T	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosporus By Discrete Analyser	EK067G	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	16	**6.25**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite X	EG020X-T	2	2	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite Y	EG020Y-T	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite Z	EG020Z-T	0	2	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Phosporus By Discrete Analyser	EK067G	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	12	**8.33**	**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
Moisture Content	EA055-103	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Particle Size Analysis by Hydrometer	EA150H	SOIL	Particle Size Analysis by Hydrometer according to AS1289.3.6.3 - 2003
Soil Particle Density	* EA152	SOIL	Soil Particle Density by AS 1289.3.5.1-2006 : Methods of testing soils for engineering purposes - Soil classification tests - Determination of the soil particle density of a soil - Standard method
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3)
Total Metals by ICP-MS - Suite X	EG020X-T	SOIL	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.
Total Metals by ICP-MS - Suite Y	EG020Y-T	SOIL	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.
Total Metals by ICP-MS - Suite Z	EG020Z-T	SOIL	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.
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 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)
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	SOIL	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) in a water extract is determined by Chemical Reduction, and direct colourimetry by Discrete Analyser.
TKN as N By Discrete Analyser	EK061G	SOIL	In house: Referenced to APHA 4500-Norg-D Soil samples are digested using Kjeldahl digestion followed by determination by Discrete Analyser.
Total Nitrogen as N (TKN + NOx) By Discrete Analyser	EK062G	SOIL	In house: Referenced to APHA 4500 Norg/NO3- Total Nitrogen is determined as the sum of TKN and Oxidised Nitrrogen, each determined seperately as N.
Total Phosporus By Discrete Analyser	EK067G	SOIL	In house: Referenced to APHA 4500 P-B&F This procedure involves sulfuric acid digestion and quantification using Discrete Analyser.
Organic Matter	EP004	SOIL	In house: Referenced to AS1289.4.1.1 - 1997., Dichromate oxidation method after Walkley and Black. This method is compliant with NEPM (2013) Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40.
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 502 and 507)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	SOIL	In house: Referenced to APHA 4500 Norg- D; APHA 4500 P - H. Macro Kjeldahl digestion.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202)
Organic Matter	EP004-PR	SOIL	In house: Referenced to AS1289.4.1.1 - 1997. Dichromate oxidation method after Walkley and Black. This method is compliant with NEPM (2013) Schedule B(3) (Method 105)
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1702000**	Page	: 1 of 7
Client	: **BMT WBM GROUP LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR JEREMY VISSER	Contact	: Customer Services EB
Address	: PO BOX 203 SPRING HILL BRISBANE QLD 4004	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +61 07 3831 6744	Telephone	: +61-7-3243 7222
Project	: B21414 Elk	Date Samples Received	: 02-Feb-2017 11:30
Order number	: ----	Date Analysis Commenced	: 02-Feb-2017
C-O-C number	: ----	Issue Date	: 23-Feb-2017 21:26
Sampler	: BRAD HILES, DANIEL MORAN		
Site	: ----		
Quote number	: BN/250/15 V5		
No. of samples received	: 3		
No. of samples analysed	: 3		

ilac-MRA NATA
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.

Signatories	*Position*	*Accreditation Category*
Diana Mesa	2IC Organic Chemist	Brisbane Organics, Stafford, QLD
Greg Vogel	Laboratory Manager	Brisbane Inorganics, Stafford, QLD
Satishkumar Trivedi	Acid Sulfate Soils Supervisor	Brisbane Acid Sulphate Soils, Stafford, QLD
Satishkumar Trivedi	Acid Sulfate Soils Supervisor	Brisbane Inorganics, Stafford, QLD

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.

- EK061G (Total Kjeldahl Nitrogen): Sample EB1702000-001 (M45) shows poor duplicate results due to sample heterogeneity. Confirmed by visual inspection.
- EP075(SIM): High LCS recovery deemed acceptable as all associated analyte results are less than LOR.
- 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, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	M45	M46	Trip blank	----	----
				Client sampling date / time	16-Jan-2017 15:00	16-Jan-2017 14:00	16-Jan-2017 15:00	----	----
Compound	CAS Number	LOR	Unit		EB1702000-001	EB1702000-002	EB1702000-003	--------	--------
					Result	Result	Result	----	----
EA055: Moisture Content									
Moisture Content (dried @ 103°C)	----	1	%		28.6	53.4	----	----	----
EA150: Particle Sizing									
+75µm	----	1	%		91	<1	----	----	----
+150µm	----	1	%		80	<1	----	----	----
+300µm	----	1	%		11	<1	----	----	----
+425µm	----	1	%		<1	<1	----	----	----
+600µm	----	1	%		<1	<1	----	----	----
+1180µm	----	1	%		<1	<1	----	----	----
+2.36mm	----	1	%		<1	<1	----	----	----
+4.75mm	----	1	%		<1	<1	----	----	----
+9.5mm	----	1	%		<1	<1	----	----	----
+19.0mm	----	1	%		<1	<1	----	----	----
+37.5mm	----	1	%		<1	<1	----	----	----
+75.0mm	----	1	%		<1	<1	----	----	----
EA150: Soil Classification based on Particle Size									
Clay (<2 µm)	----	1	%		6	23	----	----	----
Silt (2-60 µm)	----	1	%		3	74	----	----	----
Sand (0.06-2.00 mm)	----	1	%		91	3	----	----	----
Gravel (>2mm)	----	1	%		<1	<1	----	----	----
Cobbles (>6cm)	----	1	%		<1	<1	----	----	----
EA152: Soil Particle Density									
Soil Particle Density (Clay/Silt/Sand)	----	0.01	g/cm3		2.57	2.22	----	----	----
EG005T: Total Metals by ICP-AES									
Aluminium	7429-90-5	50	mg/kg		20100	33400	----	----	----
Arsenic	7440-38-2	5	mg/kg		5	10	----	----	----
Barium	7440-39-3	10	mg/kg		50	30	----	----	----
Iron	7439-89-6	50	mg/kg		41400	55300	----	----	----
Strontium	7440-24-6	2	mg/kg		51	88	----	----	----
Tin	7440-31-5	5	mg/kg		<5	<5	----	----	----
EG020T: Total Metals by ICP-MS									
Selenium	7782-49-2	1	mg/kg		<1	<1	----	----	----
Silver	7440-22-4	0.1	mg/kg		<0.1	<0.1	----	----	----
Thallium	7440-28-0	0.1	mg/kg		<0.1	<0.1	----	----	----
Beryllium	7440-41-7	0.1	mg/kg		0.5	0.7	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	M45	M46	Trip blank	----	----
				Client sampling date / time	16-Jan-2017 15:00	16-Jan-2017 14:00	16-Jan-2017 15:00	----	----
Compound	CAS Number	LOR	Unit		EB1702000-001	EB1702000-002	EB1702000-003	--------	--------
					Result	Result	Result	----	----
EG020T: Total Metals by ICP-MS - Continued									
Cadmium	7440-43-9	0.1	mg/kg		<0.1	<0.1	----	----	----
Cobalt	7440-48-4	0.1	mg/kg		**22.4**	**21.1**	----	----	----
Chromium	7440-47-3	0.1	mg/kg		**41.6**	**56.6**	----	----	----
Copper	7440-50-8	0.1	mg/kg		**22.9**	**53.0**	----	----	----
Manganese	7439-96-5	0.1	mg/kg		**621**	**836**	----	----	----
Molybdenum	7439-98-7	0.1	mg/kg		**0.2**	**0.4**	----	----	----
Nickel	7440-02-0	0.1	mg/kg		**39.8**	**46.4**	----	----	----
Lead	7439-92-1	0.1	mg/kg		**8.7**	**13.2**	----	----	----
Antimony	7440-36-0	0.1	mg/kg		<0.1	**0.1**	----	----	----
Zinc	7440-66-6	0.5	mg/kg		**66.0**	**93.5**	----	----	----
Vanadium	7440-62-2	1	mg/kg		**84**	**110**	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg		**1.5**	<0.1	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	20	mg/kg		**420**	**710**	----	----	----
EK062: Total Nitrogen as N (TKN + NOx)									
^ Total Nitrogen as N	----	20	mg/kg		**420**	**710**	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	2	mg/kg		**682**	**505**	----	----	----
EP004: Organic Matter									
Organic Matter	----	0.5	%		**0.5**	**3.2**	----	----	----
Total Organic Carbon	----	0.5	%		<0.5	**1.8**	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	----	----	----
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	----	----	----
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	----	----	----
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	M45	M46	Trip blank	----	----
				Client sampling date / time	16-Jan-2017 15:00	16-Jan-2017 14:00	16-Jan-2017 15:00	----	----
Compound	CAS Number	LOR	Unit		EB1702000-001	EB1702000-002	EB1702000-003	--------	--------
					Result	Result	Result	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	<50	----	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	----	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
^ Total Xylenes	1330-20-7	0.5	mg/kg		<0.5	<0.5	<0.5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	M45	M46	Trip blank	----	----
				Client sampling date / time	16-Jan-2017 15:00	16-Jan-2017 14:00	16-Jan-2017 15:00	----	----
Compound	CAS Number	LOR	Unit		EB1702000-001	EB1702000-002	EB1702000-003	--------	--------
					Result	Result	Result	----	----
EP080: BTEXN - Continued									
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**99.4**	**92.7**	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**101**	**90.0**	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		**90.8**	**92.3**	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**99.0**	**90.8**	----	----	----
Anthracene-d10	1719-06-8	0.5	%		**101**	**98.6**	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		**103**	**102**	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**72.5**	**69.1**	**92.2**	----	----
Toluene-D8	2037-26-5	0.2	%		**69.2**	**68.2**	**84.2**	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		**77.9**	**72.5**	**92.2**	----	----

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	35	155
2-Chlorophenol-D4	93951-73-6	42	153
2.4.6-Tribromophenol	118-79-6	26	157
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	34	157
Anthracene-d10	1719-06-8	37	153
4-Terphenyl-d14	1718-51-0	42	172
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	53	134
Toluene-D8	2037-26-5	60	131
4-Bromofluorobenzene	460-00-4	59	127

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB1702000**	Page	: 1 of 8
Client	: **BMT WBM GROUP LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR JEREMY VISSER	Contact	: Customer Services EB
Address	: PO BOX 203 SPRING HILL BRISBANE QLD 4004	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +61 07 3831 6744	Telephone	: +61-7-3243 7222
Project	: B21414 Elk	Date Samples Received	: 02-Feb-2017
Order number	: ----	Date Analysis Commenced	: 02-Feb-2017
C-O-C number	: ----	Issue Date	: 23-Feb-2017
Sampler	: BRAD HILES, DANIEL MORAN		
Site	: ----		
Quote number	: BN/250/15 V5		
No. of samples received	: 3		
No. of samples analysed	: 3		

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.

Signatories	*Position*	*Accreditation Category*
Diana Mesa	2IC Organic Chemist	Brisbane Organics, Stafford, QLD
Greg Vogel	Laboratory Manager	Brisbane Inorganics, Stafford, QLD
Satishkumar Trivedi	Acid Sulfate Soils Supervisor	Brisbane Acid Sulphate Soils, Stafford, QLD
Satishkumar Trivedi	Acid Sulfate Soils Supervisor	Brisbane Inorganics, Stafford, QLD

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: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EA055: Moisture Content (QC Lot: 741422)									
EB1702000-001	M45	EA055-103: Moisture Content (dried @ 103°C)	----	1	%	28.6	28.1	1.68	0% - 20%
EG005T: Total Metals by ICP-AES (QC Lot: 741414)									
EB1702000-001	M45	EG005T: Strontium	7440-24-6	2	mg/kg	51	51	0.00	0% - 20%
EB1702000-001	M45	EG005T: Barium	7440-39-3	10	mg/kg	50	50	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	5	6	0.00	No Limit
		EG005T: Tin	7440-31-5	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Aluminium	7429-90-5	50	mg/kg	20100	20400	1.53	0% - 20%
		EG005T: Iron	7439-89-6	50	mg/kg	41400	41300	0.265	0% - 20%
EG020T: Total Metals by ICP-MS (QC Lot: 741416)									
EB1702000-001	M45	EG020X-T: Beryllium	7440-41-7	0.1	mg/kg	0.5	0.5	0.00	No Limit
		EG020X-T: Cobalt	7440-48-4	0.1	mg/kg	22.4	22.8	1.71	0% - 20%
		EG020X-T: Chromium	7440-47-3	0.1	mg/kg	41.6	41.5	0.379	0% - 20%
		EG020X-T: Copper	7440-50-8	0.1	mg/kg	22.9	23.1	0.711	0% - 20%
		EG020X-T: Manganese	7439-96-5	0.1	mg/kg	621	606	2.48	0% - 20%
		EG020X-T: Molybdenum	7439-98-7	0.1	mg/kg	0.2	0.2	0.00	No Limit
		EG020X-T: Nickel	7440-02-0	0.1	mg/kg	39.8	39.6	0.426	0% - 20%
		EG020X-T: Lead	7439-92-1	0.1	mg/kg	8.7	9.0	3.48	0% - 20%
		EG020X-T: Antimony	7440-36-0	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
		EG020X-T: Zinc	7440-66-6	0.5	mg/kg	66.0	65.6	0.567	0% - 20%
		EG020X-T: Vanadium	7440-62-2	1	mg/kg	84	83	0.00	0% - 20%
EG020T: Total Metals by ICP-MS (QC Lot: 741417)									
EB1702000-001	M45	EG020Y-T: Thallium	7440-28-0	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
		EG020Y-T: Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
		EG020Y-T: Selenium	7782-49-2	1	mg/kg	<1	<1	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 741418)									
EB1702000-001	M45	EG020Z-T: Silver	7440-22-4	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 741415)									
EB1702000-001	M45	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 741421)									
EB1702000-001	M45	EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	1.5	1.5	0.00	0% - 50%
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 741420)									
EB1702000-001	M45	EK061G: Total Kjeldahl Nitrogen as N	----	20	mg/kg	420	# 310	30.6	0% - 20%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 741419)									
EB1702000-001	M45	EK067G: Total Phosphorus as P	----	2	mg/kg	682	638	6.64	0% - 20%
EP004: Organic Matter (QC Lot: 741917)									
EB1702000-001	M45	EP004: Organic Matter	----	0.5	%	0.5	<0.5	0.00	No Limit
		EP004: Total Organic Carbon	----	0.5	%	<0.5	<0.5	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 741307)									
EB1702000-001	M45	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 741306)									
EB1702000-001	M45	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 741308)									
EB1702000-001	M45	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 741306)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 741306) - continued									
EB1702000-001	M45	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 741308)									
EB1702000-001	M45	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080: BTEXN (QC Lot: 741306)									
EB1702000-001	M45	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	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: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 741414)								
EG005T: Aluminium	7429-90-5	50	mg/kg	<50	----	----	----	----
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	118.9 mg/kg	101	84	123
EG005T: Barium	7440-39-3	10	mg/kg	<10	105.1967 mg/kg	103	89	129
EG005T: Iron	7439-89-6	50	mg/kg	<50	34900 mg/kg	104	70	120
EG005T: Strontium	7440-24-6	2	mg/kg	<2	68.55697 mg/kg	88.3	83	117
EG005T: Tin	7440-31-5	5	mg/kg	<5	5.7 mg/kg	108	75	130
EG020T: Total Metals by ICP-MS (QCLot: 741416)								
EG020X-T: Beryllium	7440-41-7	0.1	mg/kg	<0.1	0.64 mg/kg	104	79	130
EG020X-T: Cobalt	7440-48-4	0.1	mg/kg	<0.1	11.6 mg/kg	116	88	129
EG020X-T: Chromium	7440-47-3	0.1	mg/kg	<0.1	22.9 mg/kg	113	75	130
EG020X-T: Copper	7440-50-8	0.1	mg/kg	<0.1	52.9 mg/kg	109	84	120
EG020X-T: Manganese	7439-96-5	0.1	mg/kg	<0.1	592 mg/kg	111	86	130
EG020X-T: Molybdenum	7439-98-7	0.1	mg/kg	<0.1	2 mg/kg	103	82	118
EG020X-T: Nickel	7440-02-0	0.1	mg/kg	<0.1	16.1 mg/kg	105	89	127
EG020X-T: Lead	7439-92-1	0.1	mg/kg	<0.1	66.3 mg/kg	116	85	117
EG020X-T: Antimony	7440-36-0	0.1	mg/kg	<0.1	----	----	----	----
EG020X-T: Zinc	7440-66-6	0.5	mg/kg	<0.5	187 mg/kg	108	71	130
EG020X-T: Vanadium	7440-62-2	1	mg/kg	<1	67.8 mg/kg	116	86	130
EG020T: Total Metals by ICP-MS (QCLot: 741417)								
EG020Y-T: Selenium	7782-49-2	1	mg/kg	<1	----	----	----	----
EG020Y-T: Thallium	7440-28-0	0.1	mg/kg	<0.1	----	----	----	----
EG020Y-T: Cadmium	7440-43-9	0.1	mg/kg	<0.1	1.43 mg/kg	108	81	121
EG020T: Total Metals by ICP-MS (QCLot: 741418)								
EG020Z-T: Silver	7440-22-4	0.1	mg/kg	<0.1	3.16 mg/kg	96.5	72	120
EG035T: Total Recoverable Mercury by FIMS (QCLot: 741415)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.09821 mg/kg	105	78	122
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 741421)								
EK059G: Nitrite + Nitrate as N (Sol.)	----	0.1	mg/kg	<0.1	2.5 mg/kg	96.8	86	115
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 741420)								
EK061G: Total Kjeldahl Nitrogen as N	----	20	mg/kg	<20	877 mg/kg	90.8	70	110
				<20	3644 mg/kg	97.5	70	110
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 741419)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 741419) - continued								
EK067G: Total Phosphorus as P	----	2	mg/kg	<2	766 mg/kg	92.2	70	110
				<2	1200 mg/kg	110	70	110
EP004: Organic Matter (QCLot: 741917)								
EP004: Organic Matter	----	0.5	%	<0.5	80 %	89.0	83	115
EP004: Total Organic Carbon	----	0.5	%	<0.5	46.4 %	89.0	85	115
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 741307)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	1.5 mg/kg	102	74	119
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	1.5 mg/kg	111	74	118
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	1.5 mg/kg	106	83	121
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	1.5 mg/kg	109	81	116
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	1.5 mg/kg	105	72	117
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	1.5 mg/kg	114	72	115
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	1.5 mg/kg	108	70	116
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	1.5 mg/kg	110	70	134
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	1.5 mg/kg	# 129	64	120
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	1.5 mg/kg	110	66	119
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	1.5 mg/kg	# 140	59	129
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	1.5 mg/kg	105	70	129
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	1.5 mg/kg	112	76	121
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	1.5 mg/kg	109	53	135
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	1.5 mg/kg	110	45	134
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	1.5 mg/kg	111	64	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 741306)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	16 mg/kg	93.6	66	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 741308)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	318 mg/kg	99.6	79	123
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	531 mg/kg	103	77	123
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 741306)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	18.5 mg/kg	93.6	66	119
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 741308)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	428 mg/kg	101	81	122
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	395 mg/kg	99.8	74	122
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
EP080: BTEXN (QCLot: 741306)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	80.0	73	105
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	90.1	73	105

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080: BTEXN (QCLot: 741306) - continued								
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	91.0	67	104
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	88.1	66	106
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	82.6	68	105
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	88.8	72	115

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: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005T: Total Metals by ICP-AES (QCLot: 741414)							
EB1702000-002	M46	EG005T: Arsenic	7440-38-2	50 mg/kg	99.7	70	130
		EG005T: Barium	7440-39-3	50 mg/kg	114	70	130
EG020T: Total Metals by ICP-MS (QCLot: 741416)							
EB1702000-002	M46	EG020X-T: Beryllium	7440-41-7	5 mg/kg	89.4	70	130
		EG020X-T: Cobalt	7440-48-4	50 mg/kg	111	70	130
		EG020X-T: Chromium	7440-47-3	50 mg/kg	104	70	130
		EG020X-T: Copper	7440-50-8	50 mg/kg	102	70	130
		EG020X-T: Manganese	7439-96-5	50 mg/kg	# Not Determined	70	130
		EG020X-T: Nickel	7440-02-0	50 mg/kg	108	70	130
		EG020X-T: Lead	7439-92-1	50 mg/kg	108	70	130
		EG020X-T: Zinc	7440-66-6	50 mg/kg	102	70	130
		EG020X-T: Vanadium	7440-62-2	50 mg/kg	99.8	70	130
EG020T: Total Metals by ICP-MS (QCLot: 741417)							
EB1702000-002	M46	EG020Y-T: Cadmium	7440-43-9	25 mg/kg	98.9	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 741415)							
EB1702000-002	M46	EG035T: Mercury	7439-97-6	2.5 mg/kg	108	70	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 741421)							
EB1702000-002	M46	EK059G: Nitrite + Nitrate as N (Sol.)	----	2 mg/kg	96.6	70	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 741420)							
EB1702000-002	M46	EK061G: Total Kjeldahl Nitrogen as N	----	500 mg/kg	103	70	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 741419)							
EB1702000-002	M46	EK067G: Total Phosphorus as P	----	100 mg/kg	94.5	70	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP004: Organic Matter (QCLot: 741917)							
EB1702000-002	M46	EP004: Organic Matter	----	1.84 %	79.2	70	130
		EP004: Total Organic Carbon	----	1.04 %	79.3	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 741307)							
EB1702000-002	M46	EP075(SIM): Acenaphthene	83-32-9	1.5 mg/kg	102	70	130
		EP075(SIM): Pyrene	129-00-0	1.5 mg/kg	101	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 741306)							
EB1702000-002	M46	EP080: C6 - C9 Fraction	----	8 mg/kg	84.8	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 741308)							
EB1702000-002	M46	EP071: C10 - C14 Fraction	----	318 mg/kg	99.8	70	130
		EP071: C15 - C28 Fraction	----	531 mg/kg	103	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 741306)							
EB1702000-002	M46	EP080: C6 - C10 Fraction	C6_C10	8 mg/kg	86.7	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 741308)							
EB1702000-002	M46	EP071: >C10 - C16 Fraction	----	428 mg/kg	101	70	130
		EP071: >C16 - C34 Fraction	----	395 mg/kg	101	70	130
EP080: BTEXN (QCLot: 741306)							
EB1702000-002	M46	EP080: Benzene	71-43-2	2 mg/kg	73.3	70	130
		EP080: Toluene	108-88-3	2 mg/kg	72.0	70	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB1702000**	Page	: 1 of 8
Client	: **BMT WBM GROUP LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR JEREMY VISSER	Telephone	: +61-7-3243 7222
Project	: B21414 Elk	Date Samples Received	: 02-Feb-2017
Site	: ----	Issue Date	: 23-Feb-2017
Sampler	: BRAD HILES, DANIEL MORAN	No. of samples received	: 3
Order number	: ----	No. of samples analysed	: 3

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.**
- **Duplicate outliers exist - please see following pages for full details.**
- **Laboratory Control 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: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser	EB1702000--001	M45	**Total Kjeldahl Nitrogen as N**	----	30.6 %	0% - 20%	**RPD exceeds LOR based limits**
Laboratory Control Spike (LCS) Recoveries							
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	QC-741307-002	----	**Benz(a)anthracene**	56-55-3	129 %	64-120%	**Recovery greater than upper control limit**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons	QC-741307-002	----	**Benzo(b+j)fluoranthene**	205-99-2 205-82-3	140 %	59-129%	**Recovery greater than upper control limit**
Matrix Spike (MS) Recoveries							
EG020T: Total Metals by ICP-MS	EB1702000--002	M46	**Manganese**	7439-96-5	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method / Container / Client Sample ID(s)		Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA055: Moisture Content							
Soil Glass Jar - Unpreserved							
M45,	M46	----	----	----	02-Feb-2017	30-Jan-2017	**3**
EP004: Organic Matter							
Soil Glass Jar - Unpreserved							
M45,	M46	20-Feb-2017	13-Feb-2017	**7**	22-Feb-2017	13-Feb-2017	**9**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved							
M45,	M46	03-Feb-2017	30-Jan-2017	**4**	----	----	----
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved							
M45, Trip blank	M46,	03-Feb-2017	30-Jan-2017	**4**	03-Feb-2017	30-Jan-2017	**4**
Soil Glass Jar - Unpreserved							
M45,	M46	03-Feb-2017	30-Jan-2017	**4**	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved							
M45, Trip blank	M46,	03-Feb-2017	30-Jan-2017	**4**	03-Feb-2017	30-Jan-2017	**4**
Soil Glass Jar - Unpreserved							
M45,	M46	03-Feb-2017	30-Jan-2017	**4**	----	----	----
EP080: BTEXN							

Matrix: **SOIL**

Method / Container / Client Sample ID(s)	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Days overdue	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Days overdue
EP080: BTEXN - Analysis Holding Time Compliance						
Soil Glass Jar - Unpreserved						
M45, M46, Trip blank	03-Feb-2017	30-Jan-2017	**4**	03-Feb-2017	30-Jan-2017	**4**

Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

Quality Control Sample Type / Method	Count: QC	Count: Regular	Rate (%): Actual	Rate (%): Expected	Quality Control Specification
Matrix Spikes (MS)					
Total Metals by ICP-MS - Suite Z	0	2	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: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Evaluation	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Evaluation
EA055: Moisture Content							
Soil Glass Jar - Unpreserved (EA055-103)							
M45, M46	**16-Jan-2017**	**----**	----	----	**02-Feb-2017**	30-Jan-2017	×
EA150: Particle Sizing							
Snap Lock Bag (EA150H)							
M45, M46	**16-Jan-2017**	**----**	----	----	**23-Feb-2017**	15-Jul-2017	✓
EA150: Soil Classification based on Particle Size							
Snap Lock Bag (EA150H)							
M45, M46	**16-Jan-2017**	**----**	----	----	**23-Feb-2017**	15-Jul-2017	✓
EA152: Soil Particle Density							
Snap Lock Bag (EA152)							
M45, M46	**16-Jan-2017**	**----**	----	----	**23-Feb-2017**	15-Jul-2017	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
M45, M46	**16-Jan-2017**	**03-Feb-2017**	15-Jul-2017	✓	**03-Feb-2017**	15-Jul-2017	✓
EG020T: Total Metals by ICP-MS							
Soil Glass Jar - Unpreserved (EG020Z-T)							
M45, M46	**16-Jan-2017**	**03-Feb-2017**	15-Jul-2017	✓	**03-Feb-2017**	15-Jul-2017	✓

Matrix: **SOIL**

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
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
M45, M46	**16-Jan-2017**	**03-Feb-2017**	13-Feb-2017	✓	**06-Feb-2017**	13-Feb-2017	✓
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Soil Glass Jar - Unpreserved (EK059G)							
M45, M46	**16-Jan-2017**	**09-Feb-2017**	15-Jul-2017	✓	**20-Feb-2017**	15-Jul-2017	✓
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Soil Glass Jar - Unpreserved (EK061G)							
M45, M46	**16-Jan-2017**	**03-Feb-2017**	15-Jul-2017	✓	**06-Feb-2017**	15-Jul-2017	✓
EK067G: Total Phosphorus as P by Discrete Analyser							
Soil Glass Jar - Unpreserved (EK067G)							
M45, M46	**16-Jan-2017**	**03-Feb-2017**	15-Jul-2017	✓	**06-Feb-2017**	15-Jul-2017	✓
EP004: Organic Matter							
Soil Glass Jar - Unpreserved (EP004)							
M45, M46	**16-Jan-2017**	**20-Feb-2017**	13-Feb-2017	×	**22-Feb-2017**	13-Feb-2017	×
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
M45, M46	**16-Jan-2017**	**03-Feb-2017**	30-Jan-2017	×	**06-Feb-2017**	15-Mar-2017	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP071)							
M45	**16-Jan-2017**	**03-Feb-2017**	30-Jan-2017	×	**06-Feb-2017**	15-Mar-2017	✓
Soil Glass Jar - Unpreserved (EP080)							
M45	**16-Jan-2017**	**03-Feb-2017**	30-Jan-2017	×	**03-Feb-2017**	30-Jan-2017	×
Soil Glass Jar - Unpreserved (EP071)							
M46	**16-Jan-2017**	**03-Feb-2017**	30-Jan-2017	×	**06-Feb-2017**	15-Mar-2017	✓
Soil Glass Jar - Unpreserved (EP080)							
M46, Trip blank	**16-Jan-2017**	**03-Feb-2017**	30-Jan-2017	×	**03-Feb-2017**	30-Jan-2017	×
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP071)							
M45	**16-Jan-2017**	**03-Feb-2017**	30-Jan-2017	×	**06-Feb-2017**	15-Mar-2017	✓
Soil Glass Jar - Unpreserved (EP080)							
M45	**16-Jan-2017**	**03-Feb-2017**	30-Jan-2017	×	**03-Feb-2017**	30-Jan-2017	×
Soil Glass Jar - Unpreserved (EP071)							
M46	**16-Jan-2017**	**03-Feb-2017**	30-Jan-2017	×	**06-Feb-2017**	15-Mar-2017	✓
Soil Glass Jar - Unpreserved (EP080)							
M46, Trip blank	**16-Jan-2017**	**03-Feb-2017**	30-Jan-2017	×	**03-Feb-2017**	30-Jan-2017	×
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
M45, M46, Trip blank	**16-Jan-2017**	**03-Feb-2017**	30-Jan-2017	×	**03-Feb-2017**	30-Jan-2017	×

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: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	2	**100.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite X	EG020X-T	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite Y	EG020Y-T	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite Z	EG020Z-T	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosporus By Discrete Analyser	EK067G	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	3	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	2	2	**100.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	2	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite X	EG020X-T	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite Y	EG020Y-T	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite Z	EG020Z-T	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosporus By Discrete Analyser	EK067G	2	2	**100.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	2	**100.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Total Metals by ICP-MS - Suite X	EG020X-T	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite Y	EG020Y-T	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite Z	EG020Z-T	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosporus By Discrete Analyser	EK067G	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Organic Matter	EP004	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TKN as N By Discrete Analyser	EK061G	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite X	EG020X-T	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite Y	EG020Y-T	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite Z	EG020Z-T	0	2	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Phosporus By Discrete Analyser	EK067G	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	3	**33.33**	**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
Moisture Content	EA055-103	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Particle Size Analysis by Hydrometer	EA150H	SOIL	Particle Size Analysis by Hydrometer according to AS1289.3.6.3 - 2003
Soil Particle Density	EA152	SOIL	Soil Particle Density by AS 1289.3.5.1-2006 : Methods of testing soils for engineering purposes - Soil classification tests - Determination of the soil particle density of a soil - Standard method
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3)
Total Metals by ICP-MS - Suite X	EG020X-T	SOIL	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.
Total Metals by ICP-MS - Suite Y	EG020Y-T	SOIL	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.
Total Metals by ICP-MS - Suite Z	EG020Z-T	SOIL	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.
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 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)
Nitrite and Nitrate as N (NOx)- Soluble by Discrete Analyser	EK059G	SOIL	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) in a water extract is determined by Chemical Reduction, and direct colourimetry by Discrete Analyser.
TKN as N By Discrete Analyser	EK061G	SOIL	In house: Referenced to APHA 4500-Norg-D Soil samples are digested using Kjeldahl digestion followed by determination by Discrete Analyser.
Total Nitrogen as N (TKN + NOx) By Discrete Analyser	EK062G	SOIL	In house: Referenced to APHA 4500 Norg/NO3- Total Nitrogen is determined as the sum of TKN and Oxidised Nitrrogen, each determined seperately as N.
Total Phosporus By Discrete Analyser	EK067G	SOIL	In house: Referenced to APHA 4500 P-B&F This procedure involves sulfuric acid digestion and quantification using Discrete Analyser.
Organic Matter	EP004	SOIL	In house: Referenced to AS1289.4.1.1 - 1997., Dichromate oxidation method after Walkley and Black. This method is compliant with NEPM (2013) Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40.
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 502 and 507)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260B Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve.

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	SOIL	In house: Referenced to APHA 4500 Norg- D; APHA 4500 P - H. Macro Kjeldahl digestion.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of distilled water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202)
Organic Matter	EP004-PR	SOIL	In house: Referenced to AS1289.4.1.1 - 1997. Dichromate oxidation method after Walkley and Black. This method is compliant with NEPM (2013) Schedule B(3) (Method 105)
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EB1702002**	Page	: 1 of 67
Amendment	: **2**		
Client	: **BMT WBM GROUP LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR JEREMY VISSER	Contact	: Customer Services EB
Address	: PO BOX 203 SPRING HILL BRISBANE QLD 4004	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +61 07 3831 6744	Telephone	: +61-7-3243 7222
Project	: B21414 Elk	Date Samples Received	: 02-Feb-2017 11:30
Order number	: ----	Date Analysis Commenced	: 03-Feb-2017
C-O-C number	: ----	Issue Date	: 02-Mar-2017 18:34
Sampler	: BRAD HILES, DANIEL MORAN		
Site	: ----		
Quote number	: BN/250/15 V5		
No. of samples received	: 77		
No. of samples analysed	: 77		

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.

Signatories	*Position*	*Accreditation Category*
Andrew Epps	Senior Inorganic Chemist	WB Water Lab Brisbane, Stafford, QLD
Diana Mesa	2IC Organic Chemist	Brisbane Organics, Stafford, QLD
Greg Vogel	Laboratory Manager	Brisbane Inorganics, Stafford, QLD
Greg Vogel	Laboratory Manager	WB Water Lab Brisbane, Stafford, QLD
Kim McCabe	Senior Inorganic Chemist	WB Water Lab Brisbane, Stafford, QLD

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.

- EK055G (Ammonia as N): Some samples were diluted due to matrix interference. LOR adjusted accordingly.
- It is recognised that EK061G (Total Kjeldahl Nitrogen) is less than EK055G (Ammonia) for some samples. However, the difference is within experimental variation of the methods.
- It is recognised that EG093-T (Total Metals in Saline Water by ORC-ICP-MS) is less than EG093-F (Dissolved Metals in Saline Water by ORC-ICP-MS) for some samples. However, the difference is within experimental variation of the methods.
- EG035F (Dissolved Mercury): Positive mercury results have been confirmed by re-extraction and re-analysis.
- EG035T (Total Mercury): Positive results for Mercury have been confirmed by re-extraction and re-analysis.
- EG093-F (Dissolved Metals in Saline Water by ORC-ICP-MS) were found to be higher than EG094-T (Total Metals in Saline Water by ORC-ICP-MS) for sample EB1702002 - 018 (M1-B). This was confirmed by re-digestion and re-analysis.
- Amendment (21/02/2017): This report has been amended following changes to the analytical data reported. The quality system is being utilised to resolve this issue. The specific data affected includes the total and dissolved results for sample EB1702002-031 (M46-M) and the dissolved aluminium result for sample EB1702002-067 (M19-S).
- Amendment 2 (2/03/2017): This report has been amended following changes to the analytical data reported. The quality system is being utilised to resolve this issue. The specific data affected includes the total and dissolved results for sample EB1702002-018 (M1-B).
- EK061/67 (Total Kjeldahl Nitrogen/Total Phosphorus): The LOR has been raised due to matrix interference.
- 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	M6-S	M6-B	M3-S	M3-M	M3-B
				Client sampling date / time	15-Jan-2017 08:30	15-Jan-2017 08:30	15-Jan-2017 10:30	15-Jan-2017 10:30	15-Jan-2017 10:30
Compound	CAS Number	LOR	Unit		EB1702002-001	EB1702002-002	EB1702002-003	EB1702002-004	EB1702002-005
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		<1	1	1	<1	<1
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	<5	<5	<5	<5
Iron	7439-89-6	5	µg/L		<5	<5	<5	<5	<5
Arsenic	7440-38-2	0.5	µg/L		1.0	1.2	1.0	1.2	1.4
Barium	7440-39-3	1	µg/L		13	7	11	6	5
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Lead	7439-92-1	0.2	µg/L		0.3	0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		5620	6560	6020	6650	6990
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		1.8	1.6	1.8	1.6	1.6
Zinc	7440-66-6	5	µg/L		6	<5	<5	<5	<5
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		27	16	11	<5	<5
Iron	7439-89-6	5	µg/L		45	32	23	9	24
Arsenic	7440-38-2	0.5	µg/L		2.1	1.4	1.1	1.6	1.0
Barium	7440-39-3	1	µg/L		13	8	9	7	6
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Lead	7439-92-1	0.2	µg/L		0.3	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	0.8
Strontium	7440-24-6	10	µg/L		5840	6760	5630	6800	7020
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		5.4	3.4	2.4	2.3	2.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M6-S	M6-B	M3-S	M3-M	M3-B
				Client sampling date / time	15-Jan-2017 08:30	15-Jan-2017 08:30	15-Jan-2017 10:30	15-Jan-2017 10:30	15-Jan-2017 10:30
Compound	CAS Number	LOR	Unit		EB1702002-001	EB1702002-002	EB1702002-003	EB1702002-004	EB1702002-005
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		<0.25	<0.25	<0.25	<0.25	<0.25
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.05	<0.05	<0.05	<0.05	**0.23**
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	**0.02**	<0.01	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	<1	<1	<1	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M6-S	M6-B	M3-S	M3-M	M3-B
				Client sampling date / time	15-Jan-2017 08:30	15-Jan-2017 08:30	15-Jan-2017 10:30	15-Jan-2017 10:30	15-Jan-2017 10:30
Compound	CAS Number	LOR	Unit		EB1702002-001	EB1702002-002	EB1702002-003	EB1702002-004	EB1702002-005
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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
EP080/071: Total Petroleum Hydrocarbons									
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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		3	<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		3	<1	<1	<1	<1
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		37.9	41.1	30.5	35.9	30.7
2-Chlorophenol-D4	93951-73-6	1	%		83.4	84.0	68.2	74.0	62.0
2.4.6-Tribromophenol	118-79-6	1	%		82.5	93.5	84.5	93.1	80.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M6-S	M6-B	M3-S	M3-M	M3-B
				Client sampling date / time	15-Jan-2017 08:30	15-Jan-2017 08:30	15-Jan-2017 10:30	15-Jan-2017 10:30	15-Jan-2017 10:30
Compound	CAS Number	LOR	Unit		EB1702002-001	EB1702002-002	EB1702002-003	EB1702002-004	EB1702002-005
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		**92.2**	**88.3**	**75.0**	**88.1**	**76.1**
Anthracene-d10	1719-06-8	1	%		**79.5**	**84.8**	**71.7**	**79.4**	**70.2**
4-Terphenyl-d14	1718-51-0	1	%		**94.2**	**82.5**	**66.0**	**92.7**	**67.6**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**102**	**102**	**107**	**98.5**	**105**
Toluene-D8	2037-26-5	2	%		**100**	**98.6**	**99.4**	**97.7**	**102**
4-Bromofluorobenzene	460-00-4	2	%		**109**	**104**	**105**	**103**	**111**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M9-S	M9-M	M9-B	M10-S	M10-B
				Client sampling date / time	15-Jan-2017 12:00	15-Jan-2017 12:00	15-Jan-2017 12:00	15-Jan-2017 14:00	15-Jan-2017 14:00
Compound	CAS Number	LOR	Unit		EB1702002-006	EB1702002-007	EB1702002-008	EB1702002-009	EB1702002-010
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		1	<1	<1	<1	<1
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	0.0002
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	0.0002
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	<5	<5	<5	<5
Iron	7439-89-6	5	µg/L		<5	<5	<5	<5	<5
Arsenic	7440-38-2	0.5	µg/L		1.2	1.4	1.5	1.1	1.2
Barium	7440-39-3	1	µg/L		10	6	5	11	6
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		6290	6740	7060	6160	6940
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		1.8	1.5	1.7	2.1	1.6
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		13	<5	<5	12	<5
Iron	7439-89-6	5	µg/L		29	13	12	89	13
Arsenic	7440-38-2	0.5	µg/L		1.2	1.3	1.5	1.4	1.5
Barium	7440-39-3	1	µg/L		11	6	6	11	7
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		6100	6650	6720	5990	6720
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		2.4	2.5	2.4	2.8	2.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M9-S	M9-M	M9-B	M10-S	M10-B
				Client sampling date / time	15-Jan-2017 12:00	15-Jan-2017 12:00	15-Jan-2017 12:00	15-Jan-2017 14:00	15-Jan-2017 14:00
Compound	CAS Number	LOR	Unit		EB1702002-006	EB1702002-007	EB1702002-008	EB1702002-009	EB1702002-010
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.72**	**0.27**	<0.25	<0.25	<0.25
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	**0.05**	<0.01	<0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	**0.05**	<0.01	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	<1	<1	<1	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M9-S	M9-M	M9-B	M10-S	M10-B
				Client sampling date / time	15-Jan-2017 12:00	15-Jan-2017 12:00	15-Jan-2017 12:00	15-Jan-2017 14:00	15-Jan-2017 14:00
Compound	CAS Number	LOR	Unit		EB1702002-006	EB1702002-007	EB1702002-008	EB1702002-009	EB1702002-010
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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
EP080/071: Total Petroleum Hydrocarbons									
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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**34.4**	**32.4**	**35.6**	**30.2**	**28.4**
2-Chlorophenol-D4	93951-73-6	1	%		**70.5**	**63.1**	**75.9**	**72.0**	**72.7**
2.4.6-Tribromophenol	118-79-6	1	%		**88.1**	**81.6**	**89.6**	**86.3**	**81.0**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M9-S	M9-M	M9-B	M10-S	M10-B
				Client sampling date / time	15-Jan-2017 12:00	15-Jan-2017 12:00	15-Jan-2017 12:00	15-Jan-2017 14:00	15-Jan-2017 14:00
Compound	CAS Number	LOR	Unit		EB1702002-006	EB1702002-007	EB1702002-008	EB1702002-009	EB1702002-010
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		**83.6**	**74.5**	**83.9**	**80.0**	**74.7**
Anthracene-d10	1719-06-8	1	%		**79.9**	**69.3**	**77.7**	**78.4**	**76.3**
4-Terphenyl-d14	1718-51-0	1	%		**97.4**	**77.7**	**90.7**	**89.3**	**74.1**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**106**	**103**	**110**	**103**	**101**
Toluene-D8	2037-26-5	2	%		**98.0**	**99.6**	**99.4**	**97.2**	**97.4**
4-Bromofluorobenzene	460-00-4	2	%		**107**	**105**	**103**	**104**	**104**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M4-S	M4-M	M4-B	M12-S	M12-M
				Client sampling date / time	15-Jan-2017 15:45	15-Jan-2017 16:00	15-Jan-2017 16:00	15-Jan-2017 17:00	15-Jan-2017 17:00
Compound	CAS Number	LOR	Unit		EB1702002-011	EB1702002-012	EB1702002-013	EB1702002-014	EB1702002-015
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		2	<1	<1	2	<1
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	<5	<5	<5	<5
Iron	7439-89-6	5	µg/L		<5	<5	<5	<5	<5
Arsenic	7440-38-2	0.5	µg/L		0.9	1.1	1.3	0.7	1.3
Barium	7440-39-3	1	µg/L		20	6	7	18	6
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		4710	6980	7030	5380	6800
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		2.2	1.8	1.6	2.2	1.7
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	6
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		34	<5	19	18	<5
Iron	7439-89-6	5	µg/L		50	60	42	41	12
Arsenic	7440-38-2	0.5	µg/L		0.9	1.3	1.7	1.2	1.5
Barium	7440-39-3	1	µg/L		16	6	6	17	6
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	1.0	1.7
Strontium	7440-24-6	10	µg/L		5370	6810	6840	5280	6790
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		2.8	2.9	3.0	2.8	3.1

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M4-S	M4-M	M4-B	M12-S	M12-M
				Client sampling date / time	15-Jan-2017 15:45	15-Jan-2017 16:00	15-Jan-2017 16:00	15-Jan-2017 17:00	15-Jan-2017 17:00
Compound	CAS Number	LOR	Unit		EB1702002-011	EB1702002-012	EB1702002-013	EB1702002-014	EB1702002-015
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.66**	<0.25	<0.25	<0.25	<0.25
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	<1	<1	<1	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID	M4-S	M4-M	M4-B	M12-S	M12-M
				Client sampling date / time	15-Jan-2017 15:45	15-Jan-2017 16:00	15-Jan-2017 16:00	15-Jan-2017 17:00	15-Jan-2017 17:00
					EB1702002-011	EB1702002-012	EB1702002-013	EB1702002-014	EB1702002-015
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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
EP080/071: Total Petroleum Hydrocarbons									
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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**27.6**	**29.1**	**27.2**	**28.2**	**40.9**
2-Chlorophenol-D4	93951-73-6	1	%		**73.3**	**75.0**	**73.0**	**79.8**	**86.3**
2.4.6-Tribromophenol	118-79-6	1	%		**77.2**	**82.5**	**76.6**	**80.0**	**89.3**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M4-S	M4-M	M4-B	M12-S	M12-M
				Client sampling date / time	15-Jan-2017 15:45	15-Jan-2017 16:00	15-Jan-2017 16:00	15-Jan-2017 17:00	15-Jan-2017 17:00
Compound	CAS Number	LOR	Unit		EB1702002-011	EB1702002-012	EB1702002-013	EB1702002-014	EB1702002-015
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		**81.6**	**79.2**	**73.5**	**82.9**	**84.2**
Anthracene-d10	1719-06-8	1	%		**71.1**	**77.9**	**71.8**	**74.9**	**74.8**
4-Terphenyl-d14	1718-51-0	1	%		**87.9**	**79.5**	**74.7**	**73.5**	**87.2**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**102**	**103**	**105**	**97.6**	**103**
Toluene-D8	2037-26-5	2	%		**98.4**	**99.1**	**97.9**	**97.9**	**100**
4-Bromofluorobenzene	460-00-4	2	%		**105**	**106**	**105**	**102**	**109**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M12-B	M1-S	M1-B	M5-S	M5-B
				Client sampling date / time	15-Jan-2017 17:00	16-Jan-2017 08:00	16-Jan-2017 08:00	16-Jan-2017 08:45	16-Jan-2017 08:45
Compound	CAS Number	LOR	Unit		EB1702002-016	EB1702002-017	EB1702002-018	EB1702002-019	EB1702002-020
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		<1	<1	6	<1	1
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	<5	12	<5	<5
Iron	7439-89-6	5	µg/L		<5	<5	6	<5	<5
Arsenic	7440-38-2	0.5	µg/L		1.3	1.1	1.0	1.3	1.5
Barium	7440-39-3	1	µg/L		6	11	8	11	7
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.1	µg/L		<0.1	<0.1	0.2	<0.1	<0.1
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	0.6	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		7100	6110	6380	6320	7040
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		1.7	2.0	2.2	1.8	1.8
Zinc	7440-66-6	5	µg/L		<5	5	<5	<5	11
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	17	288	5	34
Iron	7439-89-6	5	µg/L		10	29	360	15	65
Arsenic	7440-38-2	0.5	µg/L		1.6	1.3	1.1	1.5	1.3
Barium	7440-39-3	1	µg/L		6	11	8	11	7
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	0.7	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	0.3	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		0.8	<0.5	1.0	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		6840	6200	6640	6080	6540
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		2.7	2.9	3.1	3.0	3.1

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M12-B	M1-S	M1-B	M5-S	M5-B
				Client sampling date / time	15-Jan-2017 17:00	16-Jan-2017 08:00	16-Jan-2017 08:00	16-Jan-2017 08:45	16-Jan-2017 08:45
Compound	CAS Number	LOR	Unit		EB1702002-016	EB1702002-017	EB1702002-018	EB1702002-019	EB1702002-020
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		<0.25	<0.25	<0.25	**0.31**	**0.31**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	<1	**2**	<1	**1**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M12-B	M1-S	M1-B	M5-S	M5-B
				Client sampling date / time	15-Jan-2017 17:00	16-Jan-2017 08:00	16-Jan-2017 08:00	16-Jan-2017 08:45	16-Jan-2017 08:45
Compound	CAS Number	LOR	Unit		EB1702002-016	EB1702002-017	EB1702002-018	EB1702002-019	EB1702002-020
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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
EP080/071: Total Petroleum Hydrocarbons									
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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**34.1**	**38.6**	**36.6**	**34.8**	**29.7**
2-Chlorophenol-D4	93951-73-6	1	%		**78.8**	**79.2**	**70.4**	**73.5**	**59.1**
2.4.6-Tribromophenol	118-79-6	1	%		**83.4**	**88.5**	**80.3**	**82.8**	**69.8**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M12-B	M1-S	M1-B	M5-S	M5-B
				Client sampling date / time	15-Jan-2017 17:00	16-Jan-2017 08:00	16-Jan-2017 08:00	16-Jan-2017 08:45	16-Jan-2017 08:45
Compound	CAS Number	LOR	Unit		EB1702002-016	EB1702002-017	EB1702002-018	EB1702002-019	EB1702002-020
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		**85.4**	**86.1**	**73.0**	**74.7**	**57.2**
Anthracene-d10	1719-06-8	1	%		**74.6**	**73.6**	**67.8**	**68.6**	**58.0**
4-Terphenyl-d14	1718-51-0	1	%		**88.7**	**84.7**	**77.5**	**81.0**	**69.6**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**108**	**100**	**108**	**102**	**106**
Toluene-D8	2037-26-5	2	%		**97.9**	**99.8**	**99.0**	**97.6**	**100**
4-Bromofluorobenzene	460-00-4	2	%		**105**	**104**	**106**	**105**	**105**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M8-S	M8-B	M11-S	M11-SD	M11-M
				Client sampling date / time	16-Jan-2017 09:45	16-Jan-2017 09:45	16-Jan-2017 10:45	16-Jan-2017 10:45	16-Jan-2017 10:45
Compound	CAS Number	LOR	Unit		EB1702002-021	EB1702002-022	EB1702002-023	EB1702002-024	EB1702002-025
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		<1	2	2	<1	<1
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	<5	<5	<5	<5
Iron	7439-89-6	5	µg/L		<5	<5	<5	<5	<5
Arsenic	7440-38-2	0.5	µg/L		0.9	1.4	0.9	1.0	1.3
Barium	7440-39-3	1	µg/L		8	7	11	11	6
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	0.9
Cobalt	7440-48-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		6330	6740	5960	6000	6770
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		1.6	2.1	1.7	1.8	1.6
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	115	10	27	<5
Iron	7439-89-6	5	µg/L		12	148	19	26	9
Arsenic	7440-38-2	0.5	µg/L		1.9	1.4	1.6	1.7	2.0
Barium	7440-39-3	1	µg/L		8	8	11	12	6
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	0.7	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		6730	7040	6450	6380	7480
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		4.2	3.8	2.7	2.3	2.8

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M8-S	M8-B	M11-S	M11-SD	M11-M
				Client sampling date / time	16-Jan-2017 09:45	16-Jan-2017 09:45	16-Jan-2017 10:45	16-Jan-2017 10:45	16-Jan-2017 10:45
Compound	CAS Number	LOR	Unit		EB1702002-021	EB1702002-022	EB1702002-023	EB1702002-024	EB1702002-025
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.64**	**0.78**	<0.25	<0.25	<0.25
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	<1	<1	<1	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M8-S	M8-B	M11-S	M11-SD	M11-M
				Client sampling date / time	16-Jan-2017 09:45	16-Jan-2017 09:45	16-Jan-2017 10:45	16-Jan-2017 10:45	16-Jan-2017 10:45
Compound	CAS Number	LOR	Unit		EB1702002-021	EB1702002-022	EB1702002-023	EB1702002-024	EB1702002-025
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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
EP080/071: Total Petroleum Hydrocarbons									
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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**43.0**	**36.3**	**39.3**	**44.0**	**40.4**
2-Chlorophenol-D4	93951-73-6	1	%		**90.3**	**76.9**	**81.9**	**93.2**	**81.7**
2.4.6-Tribromophenol	118-79-6	1	%		**94.4**	**81.7**	**91.2**	**103**	**85.7**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M8-S	M8-B	M11-S	M11-SD	M11-M
				Client sampling date / time	16-Jan-2017 09:45	16-Jan-2017 09:45	16-Jan-2017 10:45	16-Jan-2017 10:45	16-Jan-2017 10:45
Compound	CAS Number	LOR	Unit		EB1702002-021	EB1702002-022	EB1702002-023	EB1702002-024	EB1702002-025
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		**85.2**	**76.9**	**85.9**	**90.8**	**85.4**
Anthracene-d10	1719-06-8	1	%		**76.4**	**69.4**	**76.5**	**81.4**	**69.6**
4-Terphenyl-d14	1718-51-0	1	%		**88.3**	**80.5**	**91.7**	**93.8**	**79.1**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**102**	**105**	**102**	**103**	**109**
Toluene-D8	2037-26-5	2	%		**98.6**	**99.4**	**99.1**	**100**	**97.9**
4-Bromofluorobenzene	460-00-4	2	%		**94.3**	**95.2**	**98.8**	**99.2**	**99.2**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M11-B	M2-S	M2-SD	M2-B	M46-S
				Client sampling date / time	16-Jan-2017 10:45	16-Jan-2017 12:00	16-Jan-2017 12:00	16-Jan-2017 12:00	16-Jan-2017 14:00
Compound	CAS Number	LOR	Unit		EB1702002-026	EB1702002-027	EB1702002-028	EB1702002-029	EB1702002-030
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		**1**	<1	<1	<1	**1**
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	<5	<5	<5	**6**
Iron	7439-89-6	5	µg/L		<5	<5	<5	<5	<5
Arsenic	7440-38-2	0.5	µg/L		**1.4**	**1.1**	**0.9**	**1.1**	**1.1**
Barium	7440-39-3	1	µg/L		**6**	**12**	**11**	**7**	**13**
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	**1.4**	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		**6940**	**5940**	**6090**	**6550**	**5380**
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		**1.5**	**1.6**	**1.9**	**1.7**	**2.0**
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	**10**	**14**	<5	**73**
Iron	7439-89-6	5	µg/L		**10**	**20**	**31**	**12**	**95**
Arsenic	7440-38-2	0.5	µg/L		**1.8**	**2.1**	**2.3**	**2.0**	**1.6**
Barium	7440-39-3	1	µg/L		**6**	**11**	**10**	**7**	**13**
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		**7360**	**6730**	**6370**	**6800**	**5560**
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		**2.5**	**2.7**	**2.6**	**2.6**	**2.8**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M11-B	M2-S	M2-SD	M2-B	M46-S
				Client sampling date / time	16-Jan-2017 10:45	16-Jan-2017 12:00	16-Jan-2017 12:00	16-Jan-2017 12:00	16-Jan-2017 14:00
Compound	CAS Number	LOR	Unit		EB1702002-026	EB1702002-027	EB1702002-028	EB1702002-029	EB1702002-030
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.74**	**0.88**	**0.73**	<0.25	<0.25
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.05	**0.06**	**0.15**	<0.05	**0.15**
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	**0.03**	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	<1	<1	<1	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M11-B	M2-S	M2-SD	M2-B	M46-S
				Client sampling date / time	16-Jan-2017 10:45	16-Jan-2017 12:00	16-Jan-2017 12:00	16-Jan-2017 12:00	16-Jan-2017 14:00
Compound	CAS Number	LOR	Unit		EB1702002-026	EB1702002-027	EB1702002-028	EB1702002-029	EB1702002-030
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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
EP080/071: Total Petroleum Hydrocarbons									
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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**49.8**	**28.3**	**37.5**	**40.7**	**33.6**
2-Chlorophenol-D4	93951-73-6	1	%		**85.0**	**54.4**	**80.1**	**82.0**	**77.2**
2.4.6-Tribromophenol	118-79-6	1	%		**97.4**	**59.4**	**84.7**	**85.7**	**84.2**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M11-B	M2-S	M2-SD	M2-B	M46-S
				Client sampling date / time	16-Jan-2017 10:45	16-Jan-2017 12:00	16-Jan-2017 12:00	16-Jan-2017 12:00	16-Jan-2017 14:00
Compound	CAS Number	LOR	Unit		EB1702002-026	EB1702002-027	EB1702002-028	EB1702002-029	EB1702002-030
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		**91.7**	**57.3**	**82.0**	**87.7**	**79.2**
Anthracene-d10	1719-06-8	1	%		**80.8**	**53.0**	**75.7**	**75.2**	**77.5**
4-Terphenyl-d14	1718-51-0	1	%		**89.7**	**64.6**	**88.3**	**89.9**	**83.6**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**110**	**115**	**116**	**117**	**113**
Toluene-D8	2037-26-5	2	%		**101**	**95.1**	**95.7**	**93.6**	**96.7**
4-Bromofluorobenzene	460-00-4	2	%		**95.9**	**94.6**	**98.3**	**95.9**	**93.5**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M46-M	M46-B	M45-S	M45-B	Trip Blank
				Client sampling date / time	16-Jan-2017 14:00	16-Jan-2017 14:00	16-Jan-2017 15:00	16-Jan-2017 15:00	16-Jan-2017 15:00
Compound	CAS Number	LOR	Unit		EB1702002-031	EB1702002-032	EB1702002-033	EB1702002-034	EB1702002-035
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		<1	10	100	99	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	----
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	10	18	13	----
Iron	7439-89-6	5	µg/L		25	<5	14	8	----
Arsenic	7440-38-2	0.5	µg/L		1.8	1.0	<0.5	<0.5	----
Barium	7440-39-3	1	µg/L		11	8	14	34	----
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	----
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Cobalt	7440-48-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	----
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	----
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	----
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	----
Strontium	7440-24-6	10	µg/L		5930	6540	250	911	----
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	----
Vanadium	7440-62-2	0.5	µg/L		2.7	1.6	2.5	2.6	----
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	----
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		31	406	3620	2990	----
Iron	7439-89-6	5	µg/L		42	566	5610	5020	----
Arsenic	7440-38-2	0.5	µg/L		1.1	1.4	0.7	0.8	----
Barium	7440-39-3	1	µg/L		12	8	23	38	----
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	----
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	5.2	4.5	----
Cobalt	7440-48-4	0.2	µg/L		<0.2	0.3	2.0	1.9	----
Copper	7440-50-8	1	µg/L		<1	<1	6	4	----
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	1.5	1.3	----
Nickel	7440-02-0	0.5	µg/L		<0.5	1.0	5.6	4.8	----
Strontium	7440-24-6	10	µg/L		6130	6460	310	995	----
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	----
Vanadium	7440-62-2	0.5	µg/L		2.1	3.9	12.9	13.0	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M46-M	M46-B	M45-S	M45-B	Trip Blank
				Client sampling date / time	16-Jan-2017 14:00	16-Jan-2017 14:00	16-Jan-2017 15:00	16-Jan-2017 15:00	16-Jan-2017 15:00
Compound	CAS Number	LOR	Unit		EB1702002-031	EB1702002-032	EB1702002-033	EB1702002-034	EB1702002-035
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	<5	**10**	**9**	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		<0.25	<0.25	<0.25	<0.25	----
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	----
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	<0.01	**0.04**	**0.03**	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	<0.01	**0.04**	**0.03**	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	**0.5**	**0.3**	**0.2**	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	**0.5**	**0.3**	**0.2**	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.05	**0.26**	**0.13**	**0.08**	----
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	<0.01	**0.01**	----
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	<1	<1	<1	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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	----
Benz(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	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M46-M	M46-B	M45-S	M45-B	Trip Blank
				Client sampling date / time	16-Jan-2017 14:00	16-Jan-2017 14:00	16-Jan-2017 15:00	16-Jan-2017 15:00	16-Jan-2017 15:00
Compound	CAS Number	LOR	Unit		EB1702002-031	EB1702002-032	EB1702002-033	EB1702002-034	EB1702002-035
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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	----
EP080/071: Total Petroleum Hydrocarbons									
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	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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	----
>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	----
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**41.3**	**35.2**	**31.2**	**32.6**	----
2-Chlorophenol-D4	93951-73-6	1	%		**82.1**	**77.5**	**78.7**	**78.0**	----
2.4.6-Tribromophenol	118-79-6	1	%		**94.5**	**89.2**	**91.2**	**90.9**	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M46-M	M46-B	M45-S	M45-B	Trip Blank
				Client sampling date / time	16-Jan-2017 14:00	16-Jan-2017 14:00	16-Jan-2017 15:00	16-Jan-2017 15:00	16-Jan-2017 15:00
Compound	CAS Number	LOR	Unit		EB1702002-031	EB1702002-032	EB1702002-033	EB1702002-034	EB1702002-035
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		**85.8**	**82.8**	**85.3**	**82.4**	**----**
Anthracene-d10	1719-06-8	1	%		**83.3**	**79.6**	**81.2**	**81.2**	**----**
4-Terphenyl-d14	1718-51-0	1	%		**88.7**	**86.0**	**86.4**	**86.4**	**----**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**122**	**119**	**122**	**125**	**121**
Toluene-D8	2037-26-5	2	%		**94.9**	**94.6**	**94.4**	**94.2**	**91.5**
4-Bromofluorobenzene	460-00-4	2	%		**93.3**	**92.8**	**94.1**	**93.1**	**90.0**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M25-S	M25-M	M25-B	M31-S	M31-M
				Client sampling date / time	23-Jan-2017 17:00	23-Jan-2017 17:00	23-Jan-2017 17:00	24-Jan-2017 11:30	24-Jan-2017 11:30
Compound	CAS Number	LOR	Unit		EB1702002-036	EB1702002-037	EB1702002-038	EB1702002-039	EB1702002-040
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		1	<1	<1	<1	<1
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	<5	<5	<5	<5
Iron	7439-89-6	5	µg/L		<5	<5	11	<5	<5
Arsenic	7440-38-2	0.5	µg/L		0.9	1.4	1.4	0.8	1.2
Barium	7440-39-3	1	µg/L		11	6	6	10	5
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		0.5	0.9	1.6	<0.5	<0.5
Cobalt	7440-48-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	0.6	0.7	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		5180	6670	6800	5570	6890
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		1.8	1.8	1.6	1.9	1.8
Zinc	7440-66-6	5	µg/L		<5	<5	<5	8	<5
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		48	<5	<5	8	<5
Iron	7439-89-6	5	µg/L		81	12	7	18	12
Arsenic	7440-38-2	0.5	µg/L		1.4	1.9	2.2	1.9	2.0
Barium	7440-39-3	1	µg/L		11	6	6	9	5
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		5630	7160	7310	5960	7170
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		3.4	2.7	3.1	2.5	2.5

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M25-S	M25-M	M25-B	M31-S	M31-M
				Client sampling date / time	23-Jan-2017 17:00	23-Jan-2017 17:00	23-Jan-2017 17:00	24-Jan-2017 11:30	24-Jan-2017 11:30
Compound	CAS Number	LOR	Unit		EB1702002-036	EB1702002-037	EB1702002-038	EB1702002-039	EB1702002-040
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		<0.25	**0.86**	<0.25	<0.25	<0.25
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.05	**0.12**	<0.05	**0.07**	<0.05
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	<1	<1	<1	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M25-S	M25-M	M25-B	M31-S	M31-M
				Client sampling date / time	23-Jan-2017 17:00	23-Jan-2017 17:00	23-Jan-2017 17:00	24-Jan-2017 11:30	24-Jan-2017 11:30
Compound	CAS Number	LOR	Unit		EB1702002-036	EB1702002-037	EB1702002-038	EB1702002-039	EB1702002-040
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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
EP080/071: Total Petroleum Hydrocarbons									
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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**33.1**	**33.0**	**30.3**	**30.2**	**32.8**
2-Chlorophenol-D4	93951-73-6	1	%		**77.2**	**73.6**	**70.9**	**71.6**	**77.3**
2.4.6-Tribromophenol	118-79-6	1	%		**90.6**	**84.9**	**80.1**	**83.6**	**88.9**

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID	M25-S	M25-M	M25-B	M31-S	M31-M
				Client sampling date / time	23-Jan-2017 17:00	23-Jan-2017 17:00	23-Jan-2017 17:00	24-Jan-2017 11:30	24-Jan-2017 11:30
					EB1702002-036	EB1702002-037	EB1702002-038	EB1702002-039	EB1702002-040
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		**85.0**	**79.2**	**73.3**	**79.2**	**84.1**
Anthracene-d10	1719-06-8	1	%		**81.1**	**77.6**	**71.3**	**76.2**	**79.3**
4-Terphenyl-d14	1718-51-0	1	%		**85.8**	**82.8**	**75.8**	**79.6**	**84.5**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**122**	**132**	**131**	**129**	**133**
Toluene-D8	2037-26-5	2	%		**94.6**	**93.9**	**94.5**	**91.1**	**89.8**
4-Bromofluorobenzene	460-00-4	2	%		**92.7**	**89.8**	**95.8**	**96.0**	**90.5**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M31-B	M37-S	M37-M	M37-B	M43-S
				Client sampling date / time	24-Jan-2017 11:30	24-Jan-2017 16:00	24-Jan-2017 16:00	24-Jan-2017 16:00	25-Jan-2017 10:00
Compound	CAS Number	LOR	Unit		EB1702002-041	EB1702002-042	EB1702002-043	EB1702002-044	EB1702002-045
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		<1	<1	<1	<1	2
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	<5	<5	<5	<5
Iron	7439-89-6	5	µg/L		<5	<5	13	<5	<5
Arsenic	7440-38-2	0.5	µg/L		1.6	1.0	1.2	1.4	1.2
Barium	7440-39-3	1	µg/L		4	9	5	5	8
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Copper	7440-50-8	1	µg/L		<1	<1	10	<1	<1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	0.9	<0.5	0.6
Strontium	7440-24-6	10	µg/L		7410	6040	7200	7140	6070
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		1.8	1.8	1.6	1.8	1.7
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		17	11	<5	<5	39
Iron	7439-89-6	5	µg/L		41	34	10	10	54
Arsenic	7440-38-2	0.5	µg/L		2.3	1.5	1.5	2.6	2.0
Barium	7440-39-3	1	µg/L		4	10	6	7	10
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		0.6	0.8	0.9	0.6	0.5
Strontium	7440-24-6	10	µg/L		7650	6320	7380	7730	6660
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		2.7	4.7	3.4	3.2	3.6

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M31-B	M37-S	M37-M	M37-B	M43-S
				Client sampling date / time	24-Jan-2017 11:30	24-Jan-2017 16:00	24-Jan-2017 16:00	24-Jan-2017 16:00	25-Jan-2017 10:00
Compound	CAS Number	LOR	Unit		EB1702002-041	EB1702002-042	EB1702002-043	EB1702002-044	EB1702002-045
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		<0.25	**0.74**	<0.25	<0.25	<0.25
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		**0.02**	<0.01	<0.01	<0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		**0.02**	<0.01	<0.01	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.05	**0.08**	<0.05	<0.05	<0.05
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	<1	<1	<1	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID	M31-B	M37-S	M37-M	M37-B	M43-S
				Client sampling date / time	24-Jan-2017 11:30	24-Jan-2017 16:00	24-Jan-2017 16:00	24-Jan-2017 16:00	25-Jan-2017 10:00
					EB1702002-041	EB1702002-042	EB1702002-043	EB1702002-044	EB1702002-045
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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
EP080/071: Total Petroleum Hydrocarbons									
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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**35.0**	**48.2**	**46.2**	**43.5**	**39.6**
2-Chlorophenol-D4	93951-73-6	1	%		**78.4**	**91.2**	**87.1**	**86.6**	**86.0**
2.4.6-Tribromophenol	118-79-6	1	%		**89.6**	**80.5**	**73.8**	**69.3**	**71.7**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M31-B	M37-S	M37-M	M37-B	M43-S
				Client sampling date / time	24-Jan-2017 11:30	24-Jan-2017 16:00	24-Jan-2017 16:00	24-Jan-2017 16:00	25-Jan-2017 10:00
Compound	CAS Number	LOR	Unit		EB1702002-041	EB1702002-042	EB1702002-043	EB1702002-044	EB1702002-045
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		**83.6**	**90.5**	**86.6**	**85.7**	**88.7**
Anthracene-d10	1719-06-8	1	%		**78.7**	**97.7**	**96.3**	**97.7**	**98.4**
4-Terphenyl-d14	1718-51-0	1	%		**83.1**	**101**	**97.6**	**101**	**103**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**106**	**105**	**102**	**103**	**104**
Toluene-D8	2037-26-5	2	%		**100.0**	**101**	**99.4**	**96.0**	**97.7**
4-Bromofluorobenzene	460-00-4	2	%		**107**	**109**	**108**	**102**	**106**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M43-M	M43-B	M13-S	M13-M	M13-B
				Client sampling date / time	25-Jan-2017 10:00	25-Jan-2017 10:00	25-Jan-2017 12:00	25-Jan-2017 12:00	25-Jan-2017 12:00
Compound	CAS Number	LOR	Unit		EB1702002-046	EB1702002-047	EB1702002-048	EB1702002-049	EB1702002-050
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		<1	<1	<1	<1	<1
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	<5	<5	<5	<5
Iron	7439-89-6	5	µg/L		<5	<5	<5	<5	<5
Arsenic	7440-38-2	0.5	µg/L		**1.6**	**1.6**	**1.2**	**1.3**	**1.3**
Barium	7440-39-3	1	µg/L		**6**	**5**	**8**	**7**	**6**
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		**7000**	**7350**	**5780**	**6210**	**6700**
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		**1.9**	**1.7**	**1.8**	**1.7**	**1.7**
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	<5	**28**	**10**	<5
Iron	7439-89-6	5	µg/L		**13**	**12**	**55**	**21**	**19**
Arsenic	7440-38-2	0.5	µg/L		**1.9**	**1.7**	**1.6**	**1.6**	**1.5**
Barium	7440-39-3	1	µg/L		**6**	**6**	**10**	**10**	**8**
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		**7610**	**7920**	**6260**	**6570**	**7200**
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		**2.8**	**2.6**	**2.6**	**2.7**	**2.8**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M43-M	M43-B	M13-S	M13-M	M13-B
				Client sampling date / time	25-Jan-2017 10:00	25-Jan-2017 10:00	25-Jan-2017 12:00	25-Jan-2017 12:00	25-Jan-2017 12:00
Compound	CAS Number	LOR	Unit		EB1702002-046	EB1702002-047	EB1702002-048	EB1702002-049	EB1702002-050
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		<0.25	**0.35**	**0.96**	**0.26**	**0.56**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.13**	**0.07**	**0.05**	<0.05	<0.05
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	**0.02**	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	<1	<1	<1	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M43-M	M43-B	M13-S	M13-M	M13-B
				Client sampling date / time	25-Jan-2017 10:00	25-Jan-2017 10:00	25-Jan-2017 12:00	25-Jan-2017 12:00	25-Jan-2017 12:00
Compound	CAS Number	LOR	Unit		EB1702002-046	EB1702002-047	EB1702002-048	EB1702002-049	EB1702002-050
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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
EP080/071: Total Petroleum Hydrocarbons									
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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**33.6**	**42.6**	**43.1**	**38.5**	**43.6**
2-Chlorophenol-D4	93951-73-6	1	%		**71.9**	**87.5**	**89.5**	**79.7**	**94.7**
2.4.6-Tribromophenol	118-79-6	1	%		**59.7**	**69.2**	**71.2**	**62.8**	**82.2**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M43-M	M43-B	M13-S	M13-M	M13-B
				Client sampling date / time	25-Jan-2017 10:00	25-Jan-2017 10:00	25-Jan-2017 12:00	25-Jan-2017 12:00	25-Jan-2017 12:00
Compound	CAS Number	LOR	Unit		EB1702002-046	EB1702002-047	EB1702002-048	EB1702002-049	EB1702002-050
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		**71.6**	**86.4**	**87.2**	**78.0**	**97.7**
Anthracene-d10	1719-06-8	1	%		**86.2**	**96.5**	**94.7**	**90.0**	**105**
4-Terphenyl-d14	1718-51-0	1	%		**89.8**	**102**	**97.4**	**92.1**	**115**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**103**	**103**	**105**	**104**	**104**
Toluene-D8	2037-26-5	2	%		**97.7**	**98.8**	**96.2**	**99.4**	**98.3**
4-Bromofluorobenzene	460-00-4	2	%		**104**	**105**	**103**	**107**	**105**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M23-S	M23-B	M22-S	M22-B	M24-S
				Client sampling date / time	25-Jan-2017 13:00	25-Jan-2017 13:00	26-Jan-2017 07:30	26-Jan-2017 07:30	26-Jan-2017 09:00
Compound	CAS Number	LOR	Unit		EB1702002-051	EB1702002-052	EB1702002-053	EB1702002-054	EB1702002-055
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		<1	2	2	2	2
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	15	<5	<5	<5
Iron	7439-89-6	5	µg/L		<5	<5	<5	<5	<5
Arsenic	7440-38-2	0.5	µg/L		1.3	1.3	1.3	1.2	1.2
Barium	7440-39-3	1	µg/L		7	8	7	7	8
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Lead	7439-92-1	0.2	µg/L		<0.2	0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	1.0	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		6400	6410	6540	6300	6470
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		1.8	1.6	1.7	1.8	1.8
Zinc	7440-66-6	5	µg/L		7	8	<5	<5	9
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		9	8	10	18	6
Iron	7439-89-6	5	µg/L		32	37	25	42	14
Arsenic	7440-38-2	0.5	µg/L		1.3	1.3	1.4	2.0	1.8
Barium	7440-39-3	1	µg/L		9	9	9	9	8
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	<1	1	<1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	0.7	<0.5
Strontium	7440-24-6	10	µg/L		6720	6580	6600	6630	6710
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		2.5	2.4	2.3	2.6	3.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M23-S	M23-B	M22-S	M22-B	M24-S
				Client sampling date / time	25-Jan-2017 13:00	25-Jan-2017 13:00	26-Jan-2017 07:30	26-Jan-2017 07:30	26-Jan-2017 09:00
Compound	CAS Number	LOR	Unit		EB1702002-051	EB1702002-052	EB1702002-053	EB1702002-054	EB1702002-055
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	**11**	<5	<5	<5
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.53**	**0.62**	**0.71**	**0.77**	**0.63**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.43**	**0.08**	**0.23**	**0.32**	**0.23**
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		**0.02**	<0.01	<0.01	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	<1	<1	<1	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M23-S	M23-B	M22-S	M22-B	M24-S
				Client sampling date / time	25-Jan-2017 13:00	25-Jan-2017 13:00	26-Jan-2017 07:30	26-Jan-2017 07:30	26-Jan-2017 09:00
Compound	CAS Number	LOR	Unit		EB1702002-051	EB1702002-052	EB1702002-053	EB1702002-054	EB1702002-055
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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
EP080/071: Total Petroleum Hydrocarbons									
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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**40.9**	**35.4**	**37.5**	**36.1**	**39.2**
2-Chlorophenol-D4	93951-73-6	1	%		**84.4**	**78.5**	**78.5**	**73.9**	**86.9**
2.4.6-Tribromophenol	118-79-6	1	%		**72.3**	**65.6**	**68.2**	**64.3**	**76.0**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M23-S	M23-B	M22-S	M22-B	M24-S
				Client sampling date / time	25-Jan-2017 13:00	25-Jan-2017 13:00	26-Jan-2017 07:30	26-Jan-2017 07:30	26-Jan-2017 09:00
Compound	CAS Number	LOR	Unit		EB1702002-051	EB1702002-052	EB1702002-053	EB1702002-054	EB1702002-055
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		**89.9**	**82.2**	**80.3**	**79.3**	**87.8**
Anthracene-d10	1719-06-8	1	%		**97.4**	**91.2**	**90.9**	**84.3**	**98.8**
4-Terphenyl-d14	1718-51-0	1	%		**108**	**97.5**	**99.6**	**91.2**	**105**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**102**	**107**	**104**	**104**	**106**
Toluene-D8	2037-26-5	2	%		**99.6**	**104**	**96.6**	**97.2**	**99.4**
4-Bromofluorobenzene	460-00-4	2	%		**103**	**111**	**104**	**107**	**106**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M24-M	M24-B	M15-S	M15-M	M15-B
				Client sampling date / time	26-Jan-2017 09:00	26-Jan-2017 09:00	26-Jan-2017 11:00	26-Jan-2017 11:00	26-Jan-2017 11:00
Compound	CAS Number	LOR	Unit		EB1702002-056	EB1702002-057	EB1702002-058	EB1702002-059	EB1702002-060
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		<1	**2**	<1	<1	<1
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	<5	<5	<5	<5
Iron	7439-89-6	5	µg/L		<5	<5	<5	<5	<5
Arsenic	7440-38-2	0.5	µg/L		**1.2**	**1.4**	**1.2**	**1.3**	**1.4**
Barium	7440-39-3	1	µg/L		**8**	**8**	**9**	**7**	**6**
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		**6540**	**6440**	**6020**	**6450**	**6970**
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		**1.7**	**1.8**	**1.7**	**1.8**	**1.8**
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	<5	**37**	**16**	**12**
Iron	7439-89-6	5	µg/L		**21**	**16**	**69**	**34**	**30**
Arsenic	7440-38-2	0.5	µg/L		**1.5**	**1.4**	**1.5**	**1.6**	**1.5**
Barium	7440-39-3	1	µg/L		**9**	**9**	**10**	**9**	**7**
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		**6750**	**6860**	**6220**	**6670**	**7320**
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		**2.8**	**2.4**	**2.8**	**2.6**	**3.0**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M24-M	M24-B	M15-S	M15-M	M15-B
				Client sampling date / time	26-Jan-2017 09:00	26-Jan-2017 09:00	26-Jan-2017 11:00	26-Jan-2017 11:00	26-Jan-2017 11:00
Compound	CAS Number	LOR	Unit		EB1702002-056	EB1702002-057	EB1702002-058	EB1702002-059	EB1702002-060
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.62**	**0.64**	**0.62**	**0.68**	**0.59**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.05	<0.05	**0.12**	<0.05	**0.06**
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	<1	<1	**1**	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID	M24-M	M24-B	M15-S	M15-M	M15-B
				Client sampling date / time	26-Jan-2017 09:00	26-Jan-2017 09:00	26-Jan-2017 11:00	26-Jan-2017 11:00	26-Jan-2017 11:00
					EB1702002-056	EB1702002-057	EB1702002-058	EB1702002-059	EB1702002-060
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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
EP080/071: Total Petroleum Hydrocarbons									
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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**36.4**	**40.3**	**37.7**	**42.0**	**27.7**
2-Chlorophenol-D4	93951-73-6	1	%		**78.8**	**82.8**	**84.4**	**82.8**	**54.7**
2.4.6-Tribromophenol	118-79-6	1	%		**67.7**	**70.8**	**68.9**	**70.4**	**86.3**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M24-M	M24-B	M15-S	M15-M	M15-B
				Client sampling date / time	26-Jan-2017 09:00	26-Jan-2017 09:00	26-Jan-2017 11:00	26-Jan-2017 11:00	26-Jan-2017 11:00
Compound	CAS Number	LOR	Unit		EB1702002-056	EB1702002-057	EB1702002-058	EB1702002-059	EB1702002-060
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		**80.6**	**82.2**	**85.5**	**78.5**	**59.7**
Anthracene-d10	1719-06-8	1	%		**87.8**	**90.7**	**92.9**	**90.4**	**71.2**
4-Terphenyl-d14	1718-51-0	1	%		**94.1**	**96.2**	**99.4**	**95.6**	**89.6**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**98.7**	**104**	**110**	**109**	**134**
Toluene-D8	2037-26-5	2	%		**97.0**	**98.9**	**98.1**	**101**	**90.2**
4-Bromofluorobenzene	460-00-4	2	%		**103**	**106**	**105**	**109**	**89.1**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M16-S	M16-M	M16-B	M17-S	M17-SD
				Client sampling date / time	26-Jan-2017 12:00	26-Jan-2017 12:00	26-Jan-2017 12:00	26-Jan-2017 13:00	26-Jan-2017 13:00
Compound	CAS Number	LOR	Unit		EB1702002-061	EB1702002-062	EB1702002-063	EB1702002-064	EB1702002-065
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		1	<1	<1	1	<1
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	<5	5	<5	<5
Iron	7439-89-6	5	µg/L		<5	<5	<5	<5	<5
Arsenic	7440-38-2	0.5	µg/L		1.2	1.0	1.1	1.0	0.9
Barium	7440-39-3	1	µg/L		8	8	7	7	7
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		6180	6440	6800	6460	6350
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		1.7	1.5	1.7	1.7	1.6
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		20	42	13	17	11
Iron	7439-89-6	5	µg/L		37	19	31	62	24
Arsenic	7440-38-2	0.5	µg/L		1.3	1.6	1.3	2.2	1.8
Barium	7440-39-3	1	µg/L		9	9	8	9	9
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	0.8	<0.5
Strontium	7440-24-6	10	µg/L		6420	6380	6240	6660	6560
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		2.3	3.4	1.1	3.3	2.8

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M16-S	M16-M	M16-B	M17-S	M17-SD
				Client sampling date / time	26-Jan-2017 12:00	26-Jan-2017 12:00	26-Jan-2017 12:00	26-Jan-2017 13:00	26-Jan-2017 13:00
Compound	CAS Number	LOR	Unit		EB1702002-061	EB1702002-062	EB1702002-063	EB1702002-064	EB1702002-065
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.58**	**0.61**	**0.45**	**0.50**	**0.53**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.32**	**0.42**	**0.38**	**0.06**	**0.13**
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	<1	<1	<1	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M16-S	M16-M	M16-B	M17-S	M17-SD
				Client sampling date / time	26-Jan-2017 12:00	26-Jan-2017 12:00	26-Jan-2017 12:00	26-Jan-2017 13:00	26-Jan-2017 13:00
Compound	CAS Number	LOR	Unit		EB1702002-061	EB1702002-062	EB1702002-063	EB1702002-064	EB1702002-065
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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
EP080/071: Total Petroleum Hydrocarbons									
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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**19.6**	**35.9**	**38.5**	**29.2**	**42.2**
2-Chlorophenol-D4	93951-73-6	1	%		**51.5**	**81.8**	**76.4**	**63.3**	**81.5**
2.4.6-Tribromophenol	118-79-6	1	%		**59.9**	**92.0**	**84.8**	**72.5**	**86.8**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M16-S	M16-M	M16-B	M17-S	M17-SD
				Client sampling date / time	26-Jan-2017 12:00	26-Jan-2017 12:00	26-Jan-2017 12:00	26-Jan-2017 13:00	26-Jan-2017 13:00
Compound	CAS Number	LOR	Unit		EB1702002-061	EB1702002-062	EB1702002-063	EB1702002-064	EB1702002-065
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		60.6	82.2	79.6	66.6	81.6
Anthracene-d10	1719-06-8	1	%		56.6	80.0	76.5	63.5	78.0
4-Terphenyl-d14	1718-51-0	1	%		53.2	85.7	86.5	67.9	80.3
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		114	97.2	106	98.3	117
Toluene-D8	2037-26-5	2	%		106	94.9	98.4	93.9	100
4-Bromofluorobenzene	460-00-4	2	%		103	103	106	105	105

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M17-B	M19-S	M19-SD	M19-B	M20-S
				Client sampling date / time	26-Jan-2017 13:00	26-Jan-2017 14:10	26-Jan-2017 14:10	26-Jan-2017 14:10	26-Jan-2017 15:30
Compound	CAS Number	LOR	Unit		EB1702002-066	EB1702002-067	EB1702002-068	EB1702002-069	EB1702002-070
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		2	2	<1	<1	1
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	<5	5	<5	<5
Iron	7439-89-6	5	µg/L		<5	<5	<5	<5	<5
Arsenic	7440-38-2	0.5	µg/L		1.1	1.2	1.1	0.9	1.1
Barium	7440-39-3	1	µg/L		8	7	8	8	9
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		6380	6340	6290	6520	6460
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		1.8	1.8	1.7	1.8	1.8
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		6	6	6	12	55
Iron	7439-89-6	5	µg/L		19	19	19	27	127
Arsenic	7440-38-2	0.5	µg/L		1.4	1.4	1.4	1.8	1.3
Barium	7440-39-3	1	µg/L		9	8	9	9	10
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	0.8
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	0.7
Strontium	7440-24-6	10	µg/L		6730	6160	6510	6550	6400
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		2.4	1.6	2.2	2.3	2.4

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M17-B	M19-S	M19-SD	M19-B	M20-S
				Client sampling date / time	26-Jan-2017 13:00	26-Jan-2017 14:10	26-Jan-2017 14:10	26-Jan-2017 14:10	26-Jan-2017 15:30
Compound	CAS Number	LOR	Unit		EB1702002-066	EB1702002-067	EB1702002-068	EB1702002-069	EB1702002-070
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.49**	**0.48**	**0.46**	**0.45**	**0.49**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		**0.09**	<0.05	**0.09**	**0.49**	**0.05**
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	<1	<1	<1	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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

Analytical Results

Sub-Matrix: **WATER** (Matrix: **WATER**)

Compound	CAS Number	LOR	Unit	Client sample ID	M17-B	M19-S	M19-SD	M19-B	M20-S
				Client sampling date / time	26-Jan-2017 13:00	26-Jan-2017 14:10	26-Jan-2017 14:10	26-Jan-2017 14:10	26-Jan-2017 15:30
					EB1702002-066	EB1702002-067	EB1702002-068	EB1702002-069	EB1702002-070
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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
EP080/071: Total Petroleum Hydrocarbons									
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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**32.2**	**39.3**	**29.2**	**30.9**	**34.2**
2-Chlorophenol-D4	93951-73-6	1	%		**73.4**	**84.2**	**70.3**	**66.8**	**73.5**
2.4.6-Tribromophenol	118-79-6	1	%		**83.8**	**94.8**	**82.6**	**79.4**	**87.4**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M17-B	M19-S	M19-SD	M19-B	M20-S
				Client sampling date / time	26-Jan-2017 13:00	26-Jan-2017 14:10	26-Jan-2017 14:10	26-Jan-2017 14:10	26-Jan-2017 15:30
Compound	CAS Number	LOR	Unit		EB1702002-066	EB1702002-067	EB1702002-068	EB1702002-069	EB1702002-070
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		**75.5**	**79.0**	**72.0**	**71.2**	**75.3**
Anthracene-d10	1719-06-8	1	%		**73.6**	**81.4**	**72.8**	**69.8**	**76.6**
4-Terphenyl-d14	1718-51-0	1	%		**82.8**	**87.0**	**77.6**	**75.2**	**80.6**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**105**	**99.7**	**101**	**100**	**95.3**
Toluene-D8	2037-26-5	2	%		**98.7**	**98.8**	**101**	**104**	**94.5**
4-Bromofluorobenzene	460-00-4	2	%		**103**	**102**	**113**	**106**	**109**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M20-SD	M20-B	M21-S	M21-SD	M21-B
				Client sampling date / time	26-Jan-2017 15:30	26-Jan-2017 15:30	26-Jan-2017 17:00	26-Jan-2017 17:00	26-Jan-2017 17:00
Compound	CAS Number	LOR	Unit		EB1702002-071	EB1702002-072	EB1702002-073	EB1702002-074	EB1702002-075
					Result	Result	Result	Result	Result
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		<1	<1	<1	1	2
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	<5	<5	<5	<5
Iron	7439-89-6	5	µg/L		<5	<5	<5	<5	<5
Arsenic	7440-38-2	0.5	µg/L		1.1	1.0	1.2	0.9	1.1
Barium	7440-39-3	1	µg/L		8	8	8	8	8
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.1	µg/L		<0.1	<0.1	<0.1	<0.1	<0.1
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		6320	6270	6240	6230	6240
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		1.8	1.7	1.7	1.9	1.8
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		47	18	11	15	29
Iron	7439-89-6	5	µg/L		86	66	25	32	60
Arsenic	7440-38-2	0.5	µg/L		1.8	1.8	1.5	1.7	1.3
Barium	7440-39-3	1	µg/L		8	12	9	9	9
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Copper	7440-50-8	1	µg/L		<1	<1	<1	<1	<1
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	<0.2	<0.2	<0.2
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Strontium	7440-24-6	10	µg/L		6340	6300	6220	6260	6240
Tin	7440-31-5	5	µg/L		<5	<5	<5	<5	<5
Vanadium	7440-62-2	0.5	µg/L		2.4	2.2	2.2	2.3	2.6

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M20-SD	M20-B	M21-S	M21-SD	M21-B
				Client sampling date / time	26-Jan-2017 15:30	26-Jan-2017 15:30	26-Jan-2017 17:00	26-Jan-2017 17:00	26-Jan-2017 17:00
Compound	CAS Number	LOR	Unit		EB1702002-071	EB1702002-072	EB1702002-073	EB1702002-074	EB1702002-075
					Result	Result	Result	Result	Result
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued									
Zinc	7440-66-6	5	µg/L		<5	<5	<5	<5	<5
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		**0.42**	**0.53**	**0.83**	**0.47**	**0.42**
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		<0.05	<0.05	<0.05	**0.05**	<0.05
EK071G: Reactive Phosphorus as P by discrete analyser									
Reactive Phosphorus as P	14265-44-2	0.01	mg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP008: Chlorophyll a & Pheophytin a									
Chlorophyll a	----	1	mg/m³		<1	<1	<1	<1	<1
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
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

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M20-SD	M20-B	M21-S	M21-SD	M21-B
				Client sampling date / time	26-Jan-2017 15:30	26-Jan-2017 15:30	26-Jan-2017 17:00	26-Jan-2017 17:00	26-Jan-2017 17:00
Compound	CAS Number	LOR	Unit		EB1702002-071	EB1702002-072	EB1702002-073	EB1702002-074	EB1702002-075
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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
EP080/071: Total Petroleum Hydrocarbons									
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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
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
EP080: BTEXN									
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
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**28.8**	**31.2**	**32.5**	**35.8**	**30.9**
2-Chlorophenol-D4	93951-73-6	1	%		**62.3**	**68.4**	**75.3**	**71.6**	**75.5**
2.4.6-Tribromophenol	118-79-6	1	%		**74.6**	**79.6**	**82.5**	**80.0**	**89.2**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M20-SD	M20-B	M21-S	M21-SD	M21-B
				Client sampling date / time	26-Jan-2017 15:30	26-Jan-2017 15:30	26-Jan-2017 17:00	26-Jan-2017 17:00	26-Jan-2017 17:00
Compound	CAS Number	LOR	Unit		EB1702002-071	EB1702002-072	EB1702002-073	EB1702002-074	EB1702002-075
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		64.4	70.2	72.5	75.6	78.8
Anthracene-d10	1719-06-8	1	%		64.8	71.7	75.2	71.6	78.0
4-Terphenyl-d14	1718-51-0	1	%		68.8	76.7	68.2	77.4	82.5
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		102	102	114	95.7	99.2
Toluene-D8	2037-26-5	2	%		101	101	100	102	98.8
4-Bromofluorobenzene	460-00-4	2	%		104	104	99.8	106	103

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M7-S	M7-B	----	----	----
				Client sampling date / time	16-Jan-2017 13:00	16-Jan-2017 13:00	----	----	----
Compound	CAS Number	LOR	Unit		EB1702002-076	EB1702002-077	--------	--------	--------
					Result	Result	----	----	----
EA025: Total Suspended Solids dried at 104 ± 2°C									
Suspended Solids (SS)	----	1	mg/L		**1**	**4**	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	<0.0001	----	----	----
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		<5	<5	----	----	----
Iron	7439-89-6	5	µg/L		<5	<5	----	----	----
Arsenic	7440-38-2	0.5	µg/L		**1.0**	**1.2**	----	----	----
Barium	7440-39-3	1	µg/L		**8**	**8**	----	----	----
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	----	----	----
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	----	----	----
Cobalt	7440-48-4	0.1	µg/L		<0.1	<0.1	----	----	----
Copper	7440-50-8	1	µg/L		<1	<1	----	----	----
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	----	----	----
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	----	----	----
Strontium	7440-24-6	10	µg/L		**6610**	**6780**	----	----	----
Tin	7440-31-5	5	µg/L		<5	<5	----	----	----
Vanadium	7440-62-2	0.5	µg/L		**1.6**	**1.7**	----	----	----
Zinc	7440-66-6	5	µg/L		<5	<5	----	----	----
EG093T: Total Metals in Saline Water by ORC-ICPMS									
Aluminium	7429-90-5	5	µg/L		**25**	**163**	----	----	----
Iron	7439-89-6	5	µg/L		**41**	**240**	----	----	----
Arsenic	7440-38-2	0.5	µg/L		**1.4**	**1.6**	----	----	----
Barium	7440-39-3	1	µg/L		**8**	**8**	----	----	----
Cadmium	7440-43-9	0.2	µg/L		<0.2	<0.2	----	----	----
Chromium	7440-47-3	0.5	µg/L		<0.5	<0.5	----	----	----
Cobalt	7440-48-4	0.2	µg/L		<0.2	<0.2	----	----	----
Copper	7440-50-8	1	µg/L		<1	<1	----	----	----
Lead	7439-92-1	0.2	µg/L		<0.2	<0.2	----	----	----
Nickel	7440-02-0	0.5	µg/L		<0.5	<0.5	----	----	----
Strontium	7440-24-6	10	µg/L		**6220**	**6870**	----	----	----
Tin	7440-31-5	5	µg/L		<5	<5	----	----	----
Vanadium	7440-62-2	0.5	µg/L		**2.0**	**2.9**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Client sample ID	M7-S	M7-B	----	----	----
			Client sampling date / time	16-Jan-2017 13:00	16-Jan-2017 13:00	----	----	----
Compound	CAS Number	LOR	Unit	EB1702002-076	EB1702002-077	--------	--------	--------
				Result	Result	----	----	----
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued								
Zinc	7440-66-6	5	µg/L	<5	<5	----	----	----
EK055G: Ammonia as N by Discrete Analyser								
Ammonia as N	7664-41-7	0.01	mg/L	<0.25	**0.33**	----	----	----
EK057G: Nitrite as N by Discrete Analyser								
Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	----	----	----
EK058G: Nitrate as N by Discrete Analyser								
Nitrate as N	14797-55-8	0.01	mg/L	**0.03**	<0.01	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser								
Nitrite + Nitrate as N	----	0.01	mg/L	**0.03**	<0.01	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser								
Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.5	<0.5	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser								
^ Total Nitrogen as N	----	0.1	mg/L	<0.5	<0.5	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser								
Total Phosphorus as P	----	0.01	mg/L	**0.09**	**0.23**	----	----	----
EK071G: Reactive Phosphorus as P by discrete analyser								
Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	----	----	----
EP008: Chlorophyll a & Pheophytin a								
Chlorophyll a	----	1	mg/m³	<1	**2**	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
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	----	----	----
Benz(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	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M7-S	M7-B	----	----	----
				Client sampling date / time	16-Jan-2017 13:00	16-Jan-2017 13:00	----	----	----
Compound	CAS Number	LOR	Unit		EB1702002-076	EB1702002-077	--------	--------	--------
					Result	Result	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
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	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<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	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<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	----	----	----
EP080: BTEXN									
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	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1	%		**28.6**	**29.5**	----	----	----
2-Chlorophenol-D4	93951-73-6	1	%		**68.7**	**66.4**	----	----	----
2.4.6-Tribromophenol	118-79-6	1	%		**77.6**	**72.8**	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	M7-S	M7-B	----	----	----
				Client sampling date / time	16-Jan-2017 13:00	16-Jan-2017 13:00	----	----	----
Compound	CAS Number	LOR	Unit		EB1702002-076	EB1702002-077	--------	--------	--------
					Result	Result	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1	%		**70.5**	**64.2**	**----**	**----**	**----**
Anthracene-d10	1719-06-8	1	%		**70.5**	**64.7**	**----**	**----**	**----**
4-Terphenyl-d14	1718-51-0	1	%		**74.7**	**72.4**	**----**	**----**	**----**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**99.3**	**98.9**	**----**	**----**	**----**
Toluene-D8	2037-26-5	2	%		**101**	**97.2**	**----**	**----**	**----**
4-Bromofluorobenzene	460-00-4	2	%		**107**	**106**	**----**	**----**	**----**

Surrogate Control Limits

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	72
2-Chlorophenol-D4	93951-73-6	27	130
2.4.6-Tribromophenol	118-79-6	19	181
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	14	146
Anthracene-d10	1719-06-8	35	137
4-Terphenyl-d14	1718-51-0	36	154
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	66	138
Toluene-D8	2037-26-5	79	120
4-Bromofluorobenzene	460-00-4	74	118

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EB1702002**	Page	: 1 of 30
Amendment	: **2**		
Client	: **BMT WBM GROUP LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR JEREMY VISSER	Contact	: Customer Services EB
Address	: PO BOX 203 SPRING HILL BRISBANE QLD 4004	Address	: 2 Byth Street Stafford QLD Australia 4053
Telephone	: +61 07 3831 6744	Telephone	: +61-7-3243 7222
Project	: B21414 Elk	Date Samples Received	: 02-Feb-2017
Order number	: ----	Date Analysis Commenced	: 03-Feb-2017
C-O-C number	: ----	Issue Date	: 02-Mar-2017
Sampler	: BRAD HILES, DANIEL MORAN		
Site	: ----		
Quote number	: BN/250/15 V5		
No. of samples received	: 77		
No. of samples analysed	: 77		

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.

Signatories	*Position*	*Accreditation Category*
Andrew Epps	Senior Inorganic Chemist	WB Water Lab Brisbane, Stafford, QLD
Diana Mesa	2IC Organic Chemist	Brisbane Organics, Stafford, QLD
Greg Vogel	Laboratory Manager	Brisbane Inorganics, Stafford, QLD
Greg Vogel	Laboratory Manager	WB Water Lab Brisbane, Stafford, QLD
Kim McCabe	Senior Inorganic Chemist	WB Water Lab Brisbane, Stafford, QLD

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 (%)*
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 742748)									
EB1702002-001	M6-S	EA025: Suspended Solids (SS)	----	1	mg/L	<1	1	0.00	No Limit
EB1702002-011	M4-S	EA025: Suspended Solids (SS)	----	1	mg/L	2	2	0.00	No Limit
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 742749)									
EB1702002-021	M8-S	EA025: Suspended Solids (SS)	----	1	mg/L	<1	<1	0.00	No Limit
EB1702002-031	M46-M	EA025: Suspended Solids (SS)	----	1	mg/L	<1	<1	0.00	No Limit
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 742756)									
EB1702002-034	M45-B	EA025: Suspended Solids (SS)	----	1	mg/L	99	98	1.37	0% - 20%
EB1702002-045	M43-S	EA025: Suspended Solids (SS)	----	1	mg/L	2	2	0.00	No Limit
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 742757)									
EB1702002-055	M24-S	EA025: Suspended Solids (SS)	----	1	mg/L	2	2	0.00	No Limit
EB1702002-065	M17-SD	EA025: Suspended Solids (SS)	----	1	mg/L	<1	1	0.00	No Limit
EA025: Total Suspended Solids dried at 104 ± 2°C (QC Lot: 742758)									
EB1702002-075	M21-B	EA025: Suspended Solids (SS)	----	1	mg/L	2	2	0.00	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 743708)									
EB1702002-003	M3-S	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EB1702002-011	M4-S	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 743709)									
EB1702002-023	M11-S	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EB1702002-031	M46-M	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 743719)									
EB1702002-044	M37-B	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EB1702002-052	M23-B	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 743720)									

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 (%)*
EG035F: Dissolved Mercury by FIMS (QC Lot: 743720) - continued									
EB1702002-064	M17-S	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EB1702002-072	M20-B	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 743620)									
EB1702002-003	M3-S	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EB1702002-012	M4-M	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 743621)									
EB1702002-023	M11-S	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EB1702002-032	M46-B	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 743624)									
EB1702002-044	M37-B	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EB1702002-052	M23-B	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 743625)									
EB1702002-064	M17-S	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EB1702002-072	M20-B	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 743593)									
EB1702002-001	M6-S	EG093B-F: Iron	7439-89-6	5	µg/L	<5	<5	0.00	No Limit
EB1702002-010	M10-B	EG093B-F: Iron	7439-89-6	5	µg/L	<5	<5	0.00	No Limit
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 743594)									
EB1702002-001	M6-S	EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.1	<0.1	0.00	No Limit
		EG093A-F: Lead	7439-92-1	0.2	µg/L	0.3	0.3	0.00	No Limit
		EG093A-F: Arsenic	7440-38-2	0.5	µg/L	1.0	0.9	12.3	No Limit
		EG093A-F: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Vanadium	7440-62-2	0.5	µg/L	1.8	2.0	9.47	No Limit
		EG093A-F: Barium	7440-39-3	1	µg/L	13	13	0.00	0% - 50%
		EG093A-F: Copper	7440-50-8	1	µg/L	<1	<1	0.00	No Limit
		EG093A-F: Strontium	7440-24-6	10	µg/L	5620	5770	2.69	0% - 20%
		EG093A-F: Aluminium	7429-90-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-F: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-F: Zinc	7440-66-6	5	µg/L	6	5	0.00	No Limit
EB1702002-010	M10-B	EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.1	<0.1	0.00	No Limit
		EG093A-F: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Arsenic	7440-38-2	0.5	µg/L	1.2	1.3	14.0	No Limit
		EG093A-F: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Vanadium	7440-62-2	0.5	µg/L	1.6	1.5	9.81	No Limit
		EG093A-F: Barium	7440-39-3	1	µg/L	6	6	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 (%)*
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 743594) - continued									
EB1702002-010	M10-B	EG093A-F: Copper	7440-50-8	1	µg/L	1	<1	0.00	No Limit
		EG093A-F: Strontium	7440-24-6	10	µg/L	6940	6820	1.77	0% - 20%
		EG093A-F: Aluminium	7429-90-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-F: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-F: Zinc	7440-66-6	5	µg/L	<5	<5	0.00	No Limit
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 743595)									
EB1702002-021	M8-S	EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.1	<0.1	0.00	No Limit
		EG093A-F: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Arsenic	7440-38-2	0.5	µg/L	0.9	1.1	13.9	No Limit
		EG093A-F: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Vanadium	7440-62-2	0.5	µg/L	1.6	1.7	0.00	No Limit
		EG093A-F: Barium	7440-39-3	1	µg/L	8	8	0.00	No Limit
		EG093A-F: Copper	7440-50-8	1	µg/L	<1	<1	0.00	No Limit
		EG093A-F: Strontium	7440-24-6	10	µg/L	6330	6460	2.09	0% - 20%
		EG093A-F: Aluminium	7429-90-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-F: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-F: Zinc	7440-66-6	5	µg/L	<5	<5	0.00	No Limit
EB1702002-030	M46-S	EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.1	<0.1	0.00	No Limit
		EG093A-F: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Arsenic	7440-38-2	0.5	µg/L	1.1	1.1	0.00	No Limit
		EG093A-F: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Vanadium	7440-62-2	0.5	µg/L	2.0	2.0	0.00	No Limit
		EG093A-F: Barium	7440-39-3	1	µg/L	13	14	0.00	0% - 50%
		EG093A-F: Copper	7440-50-8	1	µg/L	<1	<1	0.00	No Limit
		EG093A-F: Strontium	7440-24-6	10	µg/L	5380	5410	0.554	0% - 20%
		EG093A-F: Aluminium	7429-90-5	5	µg/L	6	<5	0.00	No Limit
		EG093A-F: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-F: Zinc	7440-66-6	5	µg/L	<5	<5	0.00	No Limit
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 743596)									
EB1702002-021	M8-S	EG093B-F: Iron	7439-89-6	5	µg/L	<5	<5	0.00	No Limit
EB1702002-030	M46-S	EG093B-F: Iron	7439-89-6	5	µg/L	<5	<5	0.00	No Limit
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 743597)									
EB1702002-042	M37-S	EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.1	<0.1	0.00	No Limit
		EG093A-F: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Arsenic	7440-38-2	0.5	µg/L	1.0	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 (%)*
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 743597) - continued									
EB1702002-042	M37-S	EG093A-F: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Vanadium	7440-62-2	0.5	µg/L	1.8	1.8	0.00	No Limit
		EG093A-F: Barium	7440-39-3	1	µg/L	9	9	0.00	No Limit
		EG093A-F: Copper	7440-50-8	1	µg/L	<1	<1	0.00	No Limit
		EG093A-F: Strontium	7440-24-6	10	µg/L	6040	6040	0.137	0% - 20%
		EG093A-F: Aluminium	7429-90-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-F: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-F: Zinc	7440-66-6	5	µg/L	<5	<5	0.00	No Limit
EB1702002-051	M23-S	EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.1	<0.1	0.00	No Limit
		EG093A-F: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Arsenic	7440-38-2	0.5	µg/L	1.3	1.3	0.00	No Limit
		EG093A-F: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Vanadium	7440-62-2	0.5	µg/L	1.8	1.7	0.00	No Limit
		EG093A-F: Barium	7440-39-3	1	µg/L	7	7	0.00	No Limit
		EG093A-F: Copper	7440-50-8	1	µg/L	<1	<1	0.00	No Limit
		EG093A-F: Strontium	7440-24-6	10	µg/L	6400	6440	0.582	0% - 20%
		EG093A-F: Aluminium	7429-90-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-F: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-F: Zinc	7440-66-6	5	µg/L	7	6	15.9	No Limit
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 743598)									
EB1702002-042	M37-S	EG093B-F: Iron	7439-89-6	5	µg/L	<5	<5	0.00	No Limit
EB1702002-051	M23-S	EG093B-F: Iron	7439-89-6	5	µg/L	<5	<5	0.00	No Limit
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 743599)									
EB1702002-062	M16-M	EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.1	<0.1	0.00	No Limit
		EG093A-F: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Arsenic	7440-38-2	0.5	µg/L	1.0	1.0	0.00	No Limit
		EG093A-F: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Vanadium	7440-62-2	0.5	µg/L	1.5	1.8	17.4	No Limit
		EG093A-F: Barium	7440-39-3	1	µg/L	8	8	0.00	No Limit
		EG093A-F: Copper	7440-50-8	1	µg/L	<1	<1	0.00	No Limit
		EG093A-F: Strontium	7440-24-6	10	µg/L	6440	6370	1.18	0% - 20%
		EG093A-F: Aluminium	7429-90-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-F: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-F: Zinc	7440-66-6	5	µg/L	<5	<5	0.00	No Limit
EB1702002-071	M20-SD	EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	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 (%)*
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 743599) - continued									
EB1702002-071	M20-SD	EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.1	<0.1	0.00	No Limit
		EG093A-F: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-F: Arsenic	7440-38-2	0.5	µg/L	1.1	1.2	0.00	No Limit
		EG093A-F: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-F: Vanadium	7440-62-2	0.5	µg/L	1.8	1.6	9.18	No Limit
		EG093A-F: Barium	7440-39-3	1	µg/L	8	9	0.00	No Limit
		EG093A-F: Copper	7440-50-8	1	µg/L	<1	<1	0.00	No Limit
		EG093A-F: Strontium	7440-24-6	10	µg/L	6320	6310	0.206	0% - 20%
		EG093A-F: Aluminium	7429-90-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-F: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-F: Zinc	7440-66-6	5	µg/L	<5	<5	0.00	No Limit
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QC Lot: 743600)									
EB1702002-062	M16-M	EG093B-F: Iron	7439-89-6	5	µg/L	<5	<5	0.00	No Limit
EB1702002-071	M20-SD	EG093B-F: Iron	7439-89-6	5	µg/L	<5	<5	0.00	No Limit
EG093T: Total Metals in Saline Water by ORC-ICPMS (QC Lot: 743603)									
EB1702002-001	M6-S	EG093B-T: Iron	7439-89-6	5	µg/L	45	44	0.00	No Limit
EB1702002-010	M10-B	EG093B-T: Iron	7439-89-6	5	µg/L	13	14	0.00	No Limit
EG093T: Total Metals in Saline Water by ORC-ICPMS (QC Lot: 743604)									
EB1702002-001	M6-S	EG093A-T: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Cobalt	7440-48-4	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Lead	7439-92-1	0.2	µg/L	0.3	0.3	0.00	No Limit
		EG093A-T: Arsenic	7440-38-2	0.5	µg/L	2.1	1.3	42.7	No Limit
		EG093A-T: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-T: Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-T: Vanadium	7440-62-2	0.5	µg/L	5.4	3.3	48.9	0% - 50%
		EG093A-T: Barium	7440-39-3	1	µg/L	13	16	17.6	0% - 50%
		EG093A-T: Copper	7440-50-8	1	µg/L	<1	<1	0.00	No Limit
		EG093A-T: Strontium	7440-24-6	10	µg/L	5840	6060	3.67	0% - 20%
		EG093A-T: Aluminium	7429-90-5	5	µg/L	27	27	0.00	No Limit
		EG093A-T: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-T: Zinc	7440-66-6	5	µg/L	<5	<5	0.00	No Limit
EB1702002-010	M10-B	EG093A-T: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Cobalt	7440-48-4	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Arsenic	7440-38-2	0.5	µg/L	1.5	1.5	0.00	No Limit
		EG093A-T: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-T: Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-T: Vanadium	7440-62-2	0.5	µg/L	2.5	2.4	0.00	No Limit
		EG093A-T: Barium	7440-39-3	1	µg/L	7	7	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 (%)*
EG093T: Total Metals in Saline Water by ORC-ICPMS (QC Lot: 743604) - continued									
EB1702002-010	M10-B	EG093A-T: Copper	7440-50-8	1	µg/L	<1	<1	0.00	No Limit
		EG093A-T: Strontium	7440-24-6	10	µg/L	6720	6800	1.25	0% - 20%
		EG093A-T: Aluminium	7429-90-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-T: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-T: Zinc	7440-66-6	5	µg/L	<5	<5	0.00	No Limit
EG093T: Total Metals in Saline Water by ORC-ICPMS (QC Lot: 743605)									
EB1702002-021	M8-S	EG093A-T: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Cobalt	7440-48-4	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Arsenic	7440-38-2	0.5	µg/L	1.9	1.6	13.6	No Limit
		EG093A-T: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-T: Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-T: Vanadium	7440-62-2	0.5	µg/L	4.2	3.4	22.2	No Limit
		EG093A-T: Barium	7440-39-3	1	µg/L	8	8	0.00	No Limit
		EG093A-T: Copper	7440-50-8	1	µg/L	<1	<1	0.00	No Limit
		EG093A-T: Strontium	7440-24-6	10	µg/L	6730	6760	0.330	0% - 20%
		EG093A-T: Aluminium	7429-90-5	5	µg/L	<5	7	26.6	No Limit
		EG093A-T: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-T: Zinc	7440-66-6	5	µg/L	<5	<5	0.00	No Limit
EB1702002-030	M46-S	EG093A-T: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Cobalt	7440-48-4	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Arsenic	7440-38-2	0.5	µg/L	1.6	1.6	0.00	No Limit
		EG093A-T: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-T: Nickel	7440-02-0	0.5	µg/L	<0.5	0.7	27.6	No Limit
		EG093A-T: Vanadium	7440-62-2	0.5	µg/L	2.8	3.0	7.70	No Limit
		EG093A-T: Barium	7440-39-3	1	µg/L	13	13	0.00	0% - 50%
		EG093A-T: Copper	7440-50-8	1	µg/L	<1	<1	0.00	No Limit
		EG093A-T: Strontium	7440-24-6	10	µg/L	5560	5730	2.93	0% - 20%
		EG093A-T: Aluminium	7429-90-5	5	µg/L	73	78	5.80	0% - 50%
		EG093A-T: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-T: Zinc	7440-66-6	5	µg/L	<5	<5	0.00	No Limit
EG093T: Total Metals in Saline Water by ORC-ICPMS (QC Lot: 743606)									
EB1702002-021	M8-S	EG093B-T: Iron	7439-89-6	5	µg/L	12	12	0.00	No Limit
EB1702002-030	M46-S	EG093B-T: Iron	7439-89-6	5	µg/L	95	99	3.82	0% - 50%
EG093T: Total Metals in Saline Water by ORC-ICPMS (QC Lot: 743616)									
EB1702002-042	M37-S	EG093A-T: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Cobalt	7440-48-4	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Arsenic	7440-38-2	0.5	µg/L	1.5	1.4	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 (%)*
EG093T: Total Metals in Saline Water by ORC-ICPMS (QC Lot: 743616) - continued									
EB1702002-042	M37-S	EG093A-T: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-T: Nickel	7440-02-0	0.5	µg/L	0.8	1.1	32.3	No Limit
		EG093A-T: Vanadium	7440-62-2	0.5	µg/L	4.7	3.0	42.5	No Limit
		EG093A-T: Barium	7440-39-3	1	µg/L	10	10	0.00	No Limit
		EG093A-T: Copper	7440-50-8	1	µg/L	<1	<1	0.00	No Limit
		EG093A-T: Strontium	7440-24-6	10	µg/L	6320	6450	2.09	0% - 20%
		EG093A-T: Aluminium	7429-90-5	5	µg/L	11	12	0.00	No Limit
		EG093A-T: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-T: Zinc	7440-66-6	5	µg/L	<5	<5	0.00	No Limit
EB1702002-051	M23-S	EG093A-T: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Cobalt	7440-48-4	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Arsenic	7440-38-2	0.5	µg/L	1.3	1.6	23.4	No Limit
		EG093A-T: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-T: Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-T: Vanadium	7440-62-2	0.5	µg/L	2.5	2.3	9.78	No Limit
		EG093A-T: Barium	7440-39-3	1	µg/L	9	8	0.00	No Limit
		EG093A-T: Copper	7440-50-8	1	µg/L	<1	<1	0.00	No Limit
		EG093A-T: Strontium	7440-24-6	10	µg/L	6720	6780	0.886	0% - 20%
		EG093A-T: Aluminium	7429-90-5	5	µg/L	9	7	17.4	No Limit
		EG093A-T: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-T: Zinc	7440-66-6	5	µg/L	<5	<5	0.00	No Limit
EG093T: Total Metals in Saline Water by ORC-ICPMS (QC Lot: 743617)									
EB1702002-042	M37-S	EG093B-T: Iron	7439-89-6	5	µg/L	34	47	31.6	No Limit
EB1702002-051	M23-S	EG093B-T: Iron	7439-89-6	5	µg/L	32	20	47.4	No Limit
EG093T: Total Metals in Saline Water by ORC-ICPMS (QC Lot: 743618)									
EB1702002-062	M16-M	EG093A-T: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Cobalt	7440-48-4	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Arsenic	7440-38-2	0.5	µg/L	1.6	1.3	20.6	No Limit
		EG093A-T: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-T: Nickel	7440-02-0	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-T: Vanadium	7440-62-2	0.5	µg/L	3.4	1.8	59.2	No Limit
		EG093A-T: Barium	7440-39-3	1	µg/L	9	9	0.00	No Limit
		EG093A-T: Copper	7440-50-8	1	µg/L	<1	<1	0.00	No Limit
		EG093A-T: Strontium	7440-24-6	10	µg/L	6380	6530	2.38	0% - 20%
		EG093A-T: Aluminium	7429-90-5	5	µg/L	42	11	118	No Limit
		EG093A-T: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-T: Zinc	7440-66-6	5	µg/L	<5	<5	0.00	No Limit
EB1702002-071	M20-SD	EG093A-T: Cadmium	7440-43-9	0.2	µg/L	<0.2	<0.2	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 (%)*
EG093T: Total Metals in Saline Water by ORC-ICPMS (QC Lot: 743618) - continued									
EB1702002-071	M20-SD	EG093A-T: Cobalt	7440-48-4	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Lead	7439-92-1	0.2	µg/L	<0.2	<0.2	0.00	No Limit
		EG093A-T: Arsenic	7440-38-2	0.5	µg/L	1.8	1.5	17.3	No Limit
		EG093A-T: Chromium	7440-47-3	0.5	µg/L	<0.5	<0.5	0.00	No Limit
		EG093A-T: Nickel	7440-02-0	0.5	µg/L	<0.5	1.0	60.7	No Limit
		EG093A-T: Vanadium	7440-62-2	0.5	µg/L	2.4	2.7	12.2	No Limit
		EG093A-T: Barium	7440-39-3	1	µg/L	8	9	12.4	No Limit
		EG093A-T: Copper	7440-50-8	1	µg/L	<1	<1	0.00	No Limit
		EG093A-T: Strontium	7440-24-6	10	µg/L	6340	6240	1.72	0% - 20%
		EG093A-T: Aluminium	7429-90-5	5	µg/L	47	46	0.00	No Limit
		EG093A-T: Tin	7440-31-5	5	µg/L	<5	<5	0.00	No Limit
		EG093A-T: Zinc	7440-66-6	5	µg/L	<5	<5	0.00	No Limit
EG093T: Total Metals in Saline Water by ORC-ICPMS (QC Lot: 743619)									
EB1702002-062	M16-M	EG093B-T: Iron	7439-89-6	5	µg/L	19	18	0.00	No Limit
EB1702002-071	M20-SD	EG093B-T: Iron	7439-89-6	5	µg/L	86	93	8.09	0% - 50%
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 742891)									
EB1702002-001	M6-S	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.25	<0.25	0.00	No Limit
EB1702002-011	M4-S	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.66	0.83	23.4	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 742893)									
EB1702002-021	M8-S	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.64	0.70	8.84	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 742895)									
EB1702002-026	M11-B	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.74	0.71	4.03	No Limit
EB1702002-037	M25-M	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.86	0.88	2.39	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 742897)									
EB1702002-047	M43-B	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.35	0.33	5.46	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 742900)									
EB1702002-050	M13-B	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.56	0.55	2.01	No Limit
EB1702002-060	M15-B	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.59	0.57	2.93	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 742902)									
EB1702002-070	M20-S	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.49	0.44	9.16	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 742645)									
EB1702002-001	M6-S	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EB1702002-011	M4-S	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 742646)									
EB1702002-021	M8-S	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 742648)									
EB1702002-026	M11-B	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EB1702002-037	M25-M	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 (%)*
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 742650)									
EB1702002-047	M43-B	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 742656)									
EB1702002-050	M13-B	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EB1702002-060	M15-B	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 742658)									
EB1702002-070	M20-S	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 742892)									
EB1702002-001	M6-S	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EB1702002-011	M4-S	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 742894)									
EB1702002-021	M8-S	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 742896)									
EB1702002-026	M11-B	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EB1702002-037	M25-M	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 742898)									
EB1702002-047	M43-B	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.01	0.00	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 742901)									
EB1702002-050	M13-B	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EB1702002-060	M15-B	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 742903)									
EB1702002-070	M20-S	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 743943)									
EB1702002-001	M6-S	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.5	<0.5	0.00	No Limit
EB1702002-011	M4-S	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.5	<0.5	0.00	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 744009)									
EB1702002-021	M8-S	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.5	<0.5	0.00	No Limit
EB1702002-031	M46-M	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.5	<0.5	0.00	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 744657)									
EB1701993-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	0.2	0.2	0.00	No Limit
EB1701993-011	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.5	<0.5	0.00	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 744659)									
EB1702002-048	M13-S	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.5	<0.5	0.00	No Limit
EB1702002-058	M15-S	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.5	<0.5	0.00	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 744661)									
EB1702002-068	M19-SD	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.5	<0.5	0.00	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 743942)									
EB1702002-001	M6-S	EK067G: Total Phosphorus as P	----	0.01	mg/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 (%)*
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 743942) - continued									
EB1702002-011	M4-S	EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.05	<0.05	0.00	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 744008)									
EB1702002-021	M8-S	EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.05	0.19	118	No Limit
EB1702002-031	M46-M	EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.05	0.06	22.2	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 744656)									
EB1701993-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.07	0.08	0.00	No Limit
EB1701993-011	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.08	0.07	0.00	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 744658)									
EB1702002-048	M13-S	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.05	0.20	121	No Limit
EB1702002-058	M15-S	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.12	<0.05	83.0	No Limit
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 744660)									
EB1702002-068	M19-SD	EK067G: Total Phosphorus as P	----	0.01	mg/L	0.09	0.36	117	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 742644)									
EB1702002-001	M6-S	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EB1702002-011	M4-S	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 742647)									
EB1702002-021	M8-S	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 742649)									
EB1702002-026	M11-B	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EB1702002-037	M25-M	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 742651)									
EB1702002-047	M43-B	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 742657)									
EB1702002-050	M13-B	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EB1702002-060	M15-B	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK071G: Reactive Phosphorus as P by discrete analyser (QC Lot: 742659)									
EB1702002-070	M20-S	EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 742347)									
EB1702002-001	M6-S	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EB1702002-011	M4-S	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 742351)									
EB1702002-021	M8-S	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EB1702002-032	M46-B	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 742353)									
EB1702002-041	M31-B	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EB1702002-051	M23-S	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 742355)									

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 (%)*
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 742355) - continued									
EB1702002-061	M16-S	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EB1702002-071	M20-SD	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 742347)									
EB1702002-001	M6-S	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EB1702002-011	M4-S	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 742351)									
EB1702002-021	M8-S	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EB1702002-032	M46-B	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 742353)									
EB1702002-041	M31-B	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EB1702002-051	M23-S	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 742355)									
EB1702002-061	M16-S	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EB1702002-071	M20-SD	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080: BTEXN (QC Lot: 742347)									
EB1702002-001	M6-S	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	3	3	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
EB1702002-011	M4-S	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
EP080: BTEXN (QC Lot: 742351)									
EB1702002-021	M8-S	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
EB1702002-032	M46-B	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

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 (%)*
EP080: BTEXN (QC Lot: 742351) - continued									
EB1702002-032	M46-B	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
EP080: BTEXN (QC Lot: 742353)									
EB1702002-041	M31-B	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
EB1702002-051	M23-S	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
EP080: BTEXN (QC Lot: 742355)									
EB1702002-061	M16-S	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
EB1702002-071	M20-SD	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

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 Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 742748)								
EA025: Suspended Solids (SS)	----	1	mg/L	<1	150 mg/L	103	84	120
				<1	1000 mg/L	92.3	84	120
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 742749)								
EA025: Suspended Solids (SS)	----	1	mg/L	<1	150 mg/L	99.2	84	120
				<1	1000 mg/L	91.1	84	120
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 742756)								
EA025: Suspended Solids (SS)	----	1	mg/L	<1	150 mg/L	107	84	120
				<1	1000 mg/L	91.4	84	120
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 742757)								
EA025: Suspended Solids (SS)	----	1	mg/L	<1	150 mg/L	103	84	120
				<1	1000 mg/L	93.2	84	120
EA025: Total Suspended Solids dried at 104 ± 2°C (QCLot: 742758)								
EA025: Suspended Solids (SS)	----	1	mg/L	<1	150 mg/L	102	84	120
				<1	1000 mg/L	90.1	84	120
EG035F: Dissolved Mercury by FIMS (QCLot: 743708)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	93.1	84	118
EG035F: Dissolved Mercury by FIMS (QCLot: 743709)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	94.2	84	118
EG035F: Dissolved Mercury by FIMS (QCLot: 743719)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	95.5	84	118
EG035F: Dissolved Mercury by FIMS (QCLot: 743720)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	95.4	84	118
EG035T: Total Recoverable Mercury by FIMS (QCLot: 743620)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	92.6	80	100
EG035T: Total Recoverable Mercury by FIMS (QCLot: 743621)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	90.5	80	100
EG035T: Total Recoverable Mercury by FIMS (QCLot: 743624)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	89.1	80	100
EG035T: Total Recoverable Mercury by FIMS (QCLot: 743625)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	84.6	80	100
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 743593)								
EG093B-F: Iron	7439-89-6	5	µg/L	<5	50 µg/L	85.0	78	123

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 743594)								
EG093A-F: Aluminium	7429-90-5	5	µg/L	<5	50 µg/L	89.7	85	118
EG093A-F: Arsenic	7440-38-2	0.5	µg/L	<0.5	10 µg/L	87.7	87	116
EG093A-F: Barium	7440-39-3	1	µg/L	<1	50 µg/L	89.5	87	114
EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.2	10 µg/L	99.2	88	114
EG093A-F: Chromium	7440-47-3	0.5	µg/L	<0.5	10 µg/L	88.2	83	115
EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.2	10 µg/L	91.3	86	116
EG093A-F: Copper	7440-50-8	1	µg/L	<1	20 µg/L	102	81	117
EG093A-F: Lead	7439-92-1	0.2	µg/L	<0.2	10 µg/L	105	80	117
EG093A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	10 µg/L	90.4	87	117
EG093A-F: Strontium	7440-24-6	10	µg/L	<10	50 µg/L	91.1	85	117
EG093A-F: Tin	7440-31-5	5	µg/L	<5	10 µg/L	103	82	118
EG093A-F: Vanadium	7440-62-2	0.5	µg/L	<0.5	10 µg/L	93.1	89	117
EG093A-F: Zinc	7440-66-6	5	µg/L	<5	20 µg/L	96.8	81	120
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 743595)								
EG093A-F: Aluminium	7429-90-5	5	µg/L	<5	50 µg/L	105	85	118
EG093A-F: Arsenic	7440-38-2	0.5	µg/L	<0.5	10 µg/L	89.2	87	116
EG093A-F: Barium	7440-39-3	1	µg/L	<1	50 µg/L	90.3	87	114
EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.2	10 µg/L	103	88	114
EG093A-F: Chromium	7440-47-3	0.5	µg/L	<0.5	10 µg/L	90.6	83	115
EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.2	10 µg/L	91.9	86	116
EG093A-F: Copper	7440-50-8	1	µg/L	<1	20 µg/L	103	81	117
EG093A-F: Lead	7439-92-1	0.2	µg/L	<0.2	10 µg/L	100	80	117
EG093A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	10 µg/L	92.6	87	117
EG093A-F: Strontium	7440-24-6	10	µg/L	<10	50 µg/L	91.0	85	117
EG093A-F: Tin	7440-31-5	5	µg/L	<5	10 µg/L	102	82	118
EG093A-F: Vanadium	7440-62-2	0.5	µg/L	<0.5	10 µg/L	89.8	89	117
EG093A-F: Zinc	7440-66-6	5	µg/L	<5	20 µg/L	96.0	81	120
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 743596)								
EG093B-F: Iron	7439-89-6	5	µg/L	<5	50 µg/L	88.8	78	123
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 743597)								
EG093A-F: Aluminium	7429-90-5	5	µg/L	<5	50 µg/L	91.1	85	118
EG093A-F: Arsenic	7440-38-2	0.5	µg/L	<0.5	10 µg/L	96.4	87	116
EG093A-F: Barium	7440-39-3	1	µg/L	<1	50 µg/L	93.3	87	114
EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.2	10 µg/L	100	88	114
EG093A-F: Chromium	7440-47-3	0.5	µg/L	<0.5	10 µg/L	86.0	83	115
EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.2	10 µg/L	102	86	116
EG093A-F: Copper	7440-50-8	1	µg/L	<1	20 µg/L	100	81	117
EG093A-F: Lead	7439-92-1	0.2	µg/L	<0.2	10 µg/L	103	80	117

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 743597) - continued								
EG093A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	10 µg/L	98.8	87	117
EG093A-F: Strontium	7440-24-6	10	µg/L	<10	50 µg/L	94.4	85	117
EG093A-F: Tin	7440-31-5	5	µg/L	<5	10 µg/L	100	82	118
EG093A-F: Vanadium	7440-62-2	0.5	µg/L	<0.5	10 µg/L	94.7	89	117
EG093A-F: Zinc	7440-66-6	5	µg/L	<5	20 µg/L	85.8	81	120
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 743598)								
EG093B-F: Iron	7439-89-6	5	µg/L	<5	50 µg/L	91.7	78	123
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 743599)								
EG093A-F: Aluminium	7429-90-5	5	µg/L	<5	50 µg/L	104	85	118
EG093A-F: Arsenic	7440-38-2	0.5	µg/L	<0.5	10 µg/L	88.4	87	116
EG093A-F: Barium	7440-39-3	1	µg/L	<1	50 µg/L	96.7	87	114
EG093A-F: Cadmium	7440-43-9	0.2	µg/L	<0.2	10 µg/L	106	88	114
EG093A-F: Chromium	7440-47-3	0.5	µg/L	<0.5	10 µg/L	92.6	83	115
EG093A-F: Cobalt	7440-48-4	0.2	µg/L	<0.2	10 µg/L	95.0	86	116
EG093A-F: Copper	7440-50-8	1	µg/L	<1	20 µg/L	106	81	117
EG093A-F: Lead	7439-92-1	0.2	µg/L	<0.2	10 µg/L	105	80	117
EG093A-F: Nickel	7440-02-0	0.5	µg/L	<0.5	10 µg/L	92.2	87	117
EG093A-F: Strontium	7440-24-6	10	µg/L	<10	50 µg/L	97.1	85	117
EG093A-F: Tin	7440-31-5	5	µg/L	<5	10 µg/L	107	82	118
EG093A-F: Vanadium	7440-62-2	0.5	µg/L	<0.5	10 µg/L	94.5	89	117
EG093A-F: Zinc	7440-66-6	5	µg/L	<5	20 µg/L	82.9	81	120
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 743600)								
EG093B-F: Iron	7439-89-6	5	µg/L	<5	50 µg/L	91.9	78	123
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 743603)								
EG093B-T: Iron	7439-89-6	5	µg/L	<5	50 µg/L	87.1	80	128
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 743604)								
EG093A-T: Aluminium	7429-90-5	5	µg/L	<5	50 µg/L	89.6	85	120
EG093A-T: Arsenic	7440-38-2	0.5	µg/L	<0.5	10 µg/L	102	86	117
EG093A-T: Barium	7440-39-3	1	µg/L	<1	50 µg/L	92.3	84	118
EG093A-T: Cadmium	7440-43-9	0.2	µg/L	<0.2	10 µg/L	105	84	115
EG093A-T: Chromium	7440-47-3	0.5	µg/L	<0.5	10 µg/L	98.4	84	120
EG093A-T: Cobalt	7440-48-4	0.2	µg/L	<0.2	10 µg/L	96.9	85	116
EG093A-T: Copper	7440-50-8	1	µg/L	<1	20 µg/L	95.4	84	119
EG093A-T: Lead	7439-92-1	0.2	µg/L	<0.2	10 µg/L	106	84	120
EG093A-T: Nickel	7440-02-0	0.5	µg/L	<0.5	10 µg/L	96.7	80	120
EG093A-T: Strontium	7440-24-6	10	µg/L	<10	50 µg/L	93.3	83	117
EG093A-T: Tin	7440-31-5	5	µg/L	<5	10 µg/L	94.7	83	114
EG093A-T: Vanadium	7440-62-2	0.5	µg/L	<0.5	10 µg/L	91.3	84	120

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 743604) - continued								
EG093A-T: Zinc	7440-66-6	5	µg/L	<5	20 µg/L	108	81	124
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 743605)								
EG093A-T: Aluminium	7429-90-5	5	µg/L	<5	50 µg/L	89.5	85	120
EG093A-T: Arsenic	7440-38-2	0.5	µg/L	<0.5	10 µg/L	95.1	86	117
EG093A-T: Barium	7440-39-3	1	µg/L	<1	50 µg/L	89.0	84	118
EG093A-T: Cadmium	7440-43-9	0.2	µg/L	<0.2	10 µg/L	93.9	84	115
EG093A-T: Chromium	7440-47-3	0.5	µg/L	<0.5	10 µg/L	96.2	84	120
EG093A-T: Cobalt	7440-48-4	0.2	µg/L	<0.2	10 µg/L	95.0	85	116
EG093A-T: Copper	7440-50-8	1	µg/L	<1	20 µg/L	88.1	84	119
EG093A-T: Lead	7439-92-1	0.2	µg/L	<0.2	10 µg/L	110	84	120
EG093A-T: Nickel	7440-02-0	0.5	µg/L	<0.5	10 µg/L	93.1	80	120
EG093A-T: Strontium	7440-24-6	10	µg/L	<10	50 µg/L	96.5	83	117
EG093A-T: Tin	7440-31-5	5	µg/L	<5	10 µg/L	101	83	114
EG093A-T: Vanadium	7440-62-2	0.5	µg/L	<0.5	10 µg/L	112	84	120
EG093A-T: Zinc	7440-66-6	5	µg/L	<5	20 µg/L	95.5	81	124
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 743606)								
EG093B-T: Iron	7439-89-6	5	µg/L	<5	50 µg/L	95.2	80	128
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 743616)								
EG093A-T: Aluminium	7429-90-5	5	µg/L	<5	50 µg/L	104	85	120
EG093A-T: Arsenic	7440-38-2	0.5	µg/L	<0.5	10 µg/L	98.1	86	117
EG093A-T: Barium	7440-39-3	1	µg/L	<1	50 µg/L	95.9	84	118
EG093A-T: Cadmium	7440-43-9	0.2	µg/L	<0.2	10 µg/L	108	84	115
EG093A-T: Chromium	7440-47-3	0.5	µg/L	<0.5	10 µg/L	103	84	120
EG093A-T: Cobalt	7440-48-4	0.2	µg/L	<0.2	10 µg/L	101	85	116
EG093A-T: Copper	7440-50-8	1	µg/L	<1	20 µg/L	105	84	119
EG093A-T: Lead	7439-92-1	0.2	µg/L	<0.2	10 µg/L	112	84	120
EG093A-T: Nickel	7440-02-0	0.5	µg/L	<0.5	10 µg/L	110	80	120
EG093A-T: Strontium	7440-24-6	10	µg/L	<10	50 µg/L	98.7	83	117
EG093A-T: Tin	7440-31-5	5	µg/L	<5	10 µg/L	97.4	83	114
EG093A-T: Vanadium	7440-62-2	0.5	µg/L	<0.5	10 µg/L	107	84	120
EG093A-T: Zinc	7440-66-6	5	µg/L	<5	20 µg/L	116	81	124
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 743617)								
EG093B-T: Iron	7439-89-6	5	µg/L	<5	50 µg/L	99.8	80	128
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 743618)								
EG093A-T: Aluminium	7429-90-5	5	µg/L	<5	50 µg/L	89.4	85	120
EG093A-T: Arsenic	7440-38-2	0.5	µg/L	<0.5	10 µg/L	92.9	86	117
EG093A-T: Barium	7440-39-3	1	µg/L	<1	50 µg/L	96.1	84	118
EG093A-T: Cadmium	7440-43-9	0.2	µg/L	<0.2	10 µg/L	105	84	115

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 743618) - continued								
EG093A-T: Chromium	7440-47-3	0.5	µg/L	<0.5	10 µg/L	93.9	84	120
EG093A-T: Cobalt	7440-48-4	0.2	µg/L	<0.2	10 µg/L	90.8	85	116
EG093A-T: Copper	7440-50-8	1	µg/L	<1	20 µg/L	86.1	84	119
EG093A-T: Lead	7439-92-1	0.2	µg/L	<0.2	10 µg/L	112	84	120
EG093A-T: Nickel	7440-02-0	0.5	µg/L	<0.5	10 µg/L	87.5	80	120
EG093A-T: Strontium	7440-24-6	10	µg/L	<10	50 µg/L	95.8	83	117
EG093A-T: Tin	7440-31-5	5	µg/L	<5	10 µg/L	102	83	114
EG093A-T: Vanadium	7440-62-2	0.5	µg/L	<0.5	10 µg/L	111	84	120
EG093A-T: Zinc	7440-66-6	5	µg/L	<5	20 µg/L	94.6	81	124
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 743619)								
EG093B-T: Iron	7439-89-6	5	µg/L	<5	50 µg/L	87.3	80	128
EK055G: Ammonia as N by Discrete Analyser (QCLot: 742891)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	105	86	112
EK055G: Ammonia as N by Discrete Analyser (QCLot: 742893)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	103	86	112
EK055G: Ammonia as N by Discrete Analyser (QCLot: 742895)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	104	86	112
EK055G: Ammonia as N by Discrete Analyser (QCLot: 742897)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	104	86	112
EK055G: Ammonia as N by Discrete Analyser (QCLot: 742900)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	102	86	112
EK055G: Ammonia as N by Discrete Analyser (QCLot: 742902)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	99.2	86	112
EK057G: Nitrite as N by Discrete Analyser (QCLot: 742645)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	91.6	90	110
EK057G: Nitrite as N by Discrete Analyser (QCLot: 742646)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	94.1	90	110
EK057G: Nitrite as N by Discrete Analyser (QCLot: 742648)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	94.1	90	110
EK057G: Nitrite as N by Discrete Analyser (QCLot: 742650)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	93.2	90	110
EK057G: Nitrite as N by Discrete Analyser (QCLot: 742656)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	93.6	90	110
EK057G: Nitrite as N by Discrete Analyser (QCLot: 742658)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	94.4	90	110
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 742892)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 742892) - continued								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	101	89	115
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 742894)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	98.7	89	115
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 742896)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	99.8	89	115
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 742898)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	98.3	89	115
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 742901)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	98.6	89	115
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 742903)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	98.2	89	115
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 743943)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	78.9	70	111
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 744009)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	85.6	70	111
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 744657)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	81.9	70	111
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 744659)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	82.3	70	111
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 744661)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	80.9	70	111
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 743942)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	89.7	77	109
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 744008)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	95.5	77	109
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 744656)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	82.8	77	109
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 744658)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	81.7	77	109
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 744660)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	93.1	77	109
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 742644)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	99.0	88	115
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 742647)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	99.2	88	115
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 742649)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 742649) - continued								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	98.2	88	115
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 742651)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	98.5	88	115
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 742657)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	98.4	88	115
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 742659)								
EK071G: Reactive Phosphorus as P	14265-44-2	0.01	mg/L	<0.01	0.5 mg/L	95.8	88	115
EP008: Chlorophyll (QCLot: 742789)								
EP008: Chlorophyll a	----	1	mg/m³	<1	20 mg/m³	110	85	123
EP008: Chlorophyll (QCLot: 742790)								
EP008: Chlorophyll a	----	1	mg/m³	<1	20 mg/m³	100	85	123
EP008: Chlorophyll (QCLot: 742791)								
EP008: Chlorophyll a	----	1	mg/m³	<1	20 mg/m³	113	85	123
EP008: Chlorophyll (QCLot: 742792)								
EP008: Chlorophyll a	----	1	mg/m³	<1	20 mg/m³	110	85	123
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 742667)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	10 µg/L	82.4	47	101
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	10 µg/L	83.2	46	109
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	10 µg/L	88.0	50	104
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	10 µg/L	85.9	50	114
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	10 µg/L	86.8	49	114
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	10 µg/L	78.2	48	113
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	10 µg/L	71.0	48	120
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	10 µg/L	69.9	48	119
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	10 µg/L	71.9	48	125
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	10 µg/L	78.9	45	119
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	10 µg/L	90.8	43	130
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	10 µg/L	80.2	46	130
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	10 µg/L	89.1	49	125
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	10 µg/L	88.8	40	132
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	10 µg/L	91.9	42	140
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	10 µg/L	89.1	39	136
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 742670)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	10 µg/L	80.9	47	101
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	10 µg/L	84.8	46	109
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	10 µg/L	85.7	50	104

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 742670) - continued								
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	10 µg/L	85.2	50	114
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	10 µg/L	84.0	49	114
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	10 µg/L	79.3	48	113
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	10 µg/L	71.2	48	120
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	10 µg/L	70.1	48	119
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	10 µg/L	68.6	48	125
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	10 µg/L	74.3	45	119
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	10 µg/L	77.0	43	130
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	10 µg/L	92.8	46	130
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	10 µg/L	87.8	49	125
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	10 µg/L	88.1	40	132
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	10 µg/L	90.9	42	140
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	10 µg/L	88.4	39	136
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 742676)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	10 µg/L	73.1	47	101
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	10 µg/L	81.3	46	109
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	10 µg/L	73.2	50	104
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	10 µg/L	74.5	50	114
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	10 µg/L	68.9	49	114
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	10 µg/L	77.9	48	113
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	10 µg/L	79.9	48	120
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	10 µg/L	79.3	48	119
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	10 µg/L	67.0	48	125
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	10 µg/L	73.3	45	119
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	10 µg/L	66.8	43	130
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	10 µg/L	81.5	46	130
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	10 µg/L	71.7	49	125
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	10 µg/L	64.9	40	132
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	10 µg/L	64.4	42	140
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	10 µg/L	77.1	39	136
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 743058)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	10 µg/L	86.8	47	101
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	10 µg/L	89.9	46	109
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	10 µg/L	91.7	50	104
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	10 µg/L	90.4	50	114
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	10 µg/L	89.5	49	114
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	10 µg/L	87.4	48	113

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 743058) - continued								
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	10 µg/L	88.4	48	120
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	10 µg/L	88.1	48	119
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	10 µg/L	90.8	48	125
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	10 µg/L	88.6	45	119
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	10 µg/L	86.1	43	130
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	10 µg/L	87.7	46	130
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	10 µg/L	93.2	49	125
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	10 µg/L	88.8	40	132
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	10 µg/L	91.1	42	140
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	10 µg/L	88.6	39	136
EP080/071: Total Petroleum Hydrocarbons (QCLot: 742347)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	160 µg/L	114	76	122
EP080/071: Total Petroleum Hydrocarbons (QCLot: 742351)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	160 µg/L	94.3	76	122
EP080/071: Total Petroleum Hydrocarbons (QCLot: 742353)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	160 µg/L	105	76	122
EP080/071: Total Petroleum Hydrocarbons (QCLot: 742355)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	160 µg/L	106	76	122
EP080/071: Total Petroleum Hydrocarbons (QCLot: 742668)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	1211 µg/L	62.2	38	114
EP071: C15 - C28 Fraction	----	100	µg/L	<100	2103 µg/L	67.2	50	132
EP071: C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 742669)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	1211 µg/L	55.0	38	114
EP071: C15 - C28 Fraction	----	100	µg/L	<100	2103 µg/L	67.2	50	132
EP071: C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 742675)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	1211 µg/L	70.0	38	114
EP071: C15 - C28 Fraction	----	100	µg/L	<100	2103 µg/L	81.1	50	132
EP071: C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 743057)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	1211 µg/L	75.6	38	114
EP071: C15 - C28 Fraction	----	100	µg/L	<100	2103 µg/L	98.7	50	132
EP071: C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 742347)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	185 µg/L	115	75	123

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 742347) - continued								
EP080: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 742351)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	185 µg/L	92.1	75	123
EP080: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 742353)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	185 µg/L	104	75	123
EP080: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 742355)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	185 µg/L	106	75	123
EP080: C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L	<20	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 742668)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	1696 µg/L	62.5	43	119
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	1496 µg/L	68.3	49	134
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 742669)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	1696 µg/L	57.6	43	119
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	1496 µg/L	67.4	49	134
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 742675)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	1696 µg/L	72.7	43	119
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	1496 µg/L	83.4	49	134
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 743057)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	1696 µg/L	81.0	43	119
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	1496 µg/L	101	49	134
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	----	----	----	----
EP080: BTEXN (QCLot: 742347)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	101	77	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	102	78	122
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	100	78	119
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	104	77	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	102	76	121
EP080: Total Xylenes	1330-20-7	2	µg/L	<2	----	----	----	----

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP080: BTEXN (QCLot: 742347) - continued								
EP080: Sum of BTEX	----	1	µg/L	<1	----	----	----	----
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	100	75	120
EP080: BTEXN (QCLot: 742351)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	99.6	77	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	93.4	78	122
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	92.9	78	119
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	96.4	77	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	97.2	76	121
EP080: Total Xylenes	1330-20-7	2	µg/L	<2	----	----	----	----
EP080: Sum of BTEX	----	1	µg/L	<1	----	----	----	----
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	105	75	120
EP080: BTEXN (QCLot: 742353)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	94.5	77	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	97.5	78	122
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	93.4	78	119
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	97.5	77	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	95.4	76	121
EP080: Total Xylenes	1330-20-7	2	µg/L	<2	----	----	----	----
EP080: Sum of BTEX	----	1	µg/L	<1	----	----	----	----
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	97.3	75	120
EP080: BTEXN (QCLot: 742355)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	92.0	77	119
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	97.0	78	122
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	95.9	78	119
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	20 µg/L	97.0	77	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	98.0	76	121
EP080: Total Xylenes	1330-20-7	2	µg/L	<2	----	----	----	----
EP080: Sum of BTEX	----	1	µg/L	<1	----	----	----	----
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	101	75	120

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		
Spike	SpikeRecovery(%)	Recovery Limits (%)

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
EG035F: Dissolved Mercury by FIMS (QCLot: 743708)							
EB1702002-004	M3-M	EG035F: Mercury	7439-97-6	0.01 mg/L	75.4	70	130
EG035F: Dissolved Mercury by FIMS (QCLot: 743709)							
EB1702002-024	M11-SD	EG035F: Mercury	7439-97-6	0.01 mg/L	79.0	70	130
EG035F: Dissolved Mercury by FIMS (QCLot: 743719)							
EB1702002-045	M43-S	EG035F: Mercury	7439-97-6	0.01 mg/L	80.4	70	130
EG035F: Dissolved Mercury by FIMS (QCLot: 743720)							
EB1702002-065	M17-SD	EG035F: Mercury	7439-97-6	0.01 mg/L	85.5	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 743620)							
EB1702002-004	M3-M	EG035T: Mercury	7439-97-6	0.01 mg/L	73.8	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 743621)							
EB1702002-024	M11-SD	EG035T: Mercury	7439-97-6	0.01 mg/L	74.5	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 743624)							
EB1702002-045	M43-S	EG035T: Mercury	7439-97-6	0.01 mg/L	73.2	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 743625)							
EB1702002-065	M17-SD	EG035T: Mercury	7439-97-6	0.01 mg/L	72.4	70	130
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 743594)							
EB1702002-002	M6-B	EG093A-F: Arsenic	7440-38-2	50 µg/L	75.2	70	130
		EG093A-F: Barium	7440-39-3	250 µg/L	72.0	70	130
		EG093A-F: Cadmium	7440-43-9	50 µg/L	77.3	70	130
		EG093A-F: Chromium	7440-47-3	50 µg/L	74.8	70	130
		EG093A-F: Cobalt	7440-48-4	50 µg/L	75.5	70	130
		EG093A-F: Copper	7440-50-8	100 µg/L	72.8	70	130
		EG093A-F: Lead	7439-92-1	50 µg/L	77.8	70	130
		EG093A-F: Nickel	7440-02-0	50 µg/L	75.6	70	130
		EG093A-F: Vanadium	7440-62-2	50 µg/L	73.0	70	130
		EG093A-F: Zinc	7440-66-6	100 µg/L	71.6	70	130
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 743595)							
EB1702002-022	M8-B	EG093A-F: Arsenic	7440-38-2	50 µg/L	96.2	70	130
		EG093A-F: Barium	7440-39-3	250 µg/L	96.7	70	130
		EG093A-F: Cadmium	7440-43-9	50 µg/L	92.2	70	130
		EG093A-F: Chromium	7440-47-3	50 µg/L	96.2	70	130
		EG093A-F: Cobalt	7440-48-4	50 µg/L	95.9	70	130
		EG093A-F: Copper	7440-50-8	100 µg/L	95.6	70	130
		EG093A-F: Lead	7439-92-1	50 µg/L	95.8	70	130
		EG093A-F: Nickel	7440-02-0	50 µg/L	94.2	70	130
		EG093A-F: Vanadium	7440-62-2	50 µg/L	99.8	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
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 743595) - continued							
EB1702002-022	M8-B	EG093A-F: Zinc	7440-66-6	100 µg/L	89.1	70	130
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 743597)							
EB1702002-043	M37-M	EG093A-F: Arsenic	7440-38-2	50 µg/L	72.5	70	130
		EG093A-F: Barium	7440-39-3	250 µg/L	72.6	70	130
		EG093A-F: Cadmium	7440-43-9	50 µg/L	82.6	70	130
		EG093A-F: Chromium	7440-47-3	50 µg/L	84.2	70	130
		EG093A-F: Cobalt	7440-48-4	50 µg/L	88.1	70	130
		EG093A-F: Copper	7440-50-8	100 µg/L	75.5	70	130
		EG093A-F: Lead	7439-92-1	50 µg/L	86.4	70	130
		EG093A-F: Nickel	7440-02-0	50 µg/L	84.8	70	130
		EG093A-F: Vanadium	7440-62-2	50 µg/L	86.3	70	130
		EG093A-F: Zinc	7440-66-6	100 µg/L	73.0	70	130
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS (QCLot: 743599)							
EB1702002-063	M16-B	EG093A-F: Arsenic	7440-38-2	50 µg/L	84.7	70	130
		EG093A-F: Barium	7440-39-3	250 µg/L	72.5	70	130
		EG093A-F: Cadmium	7440-43-9	50 µg/L	83.3	70	130
		EG093A-F: Chromium	7440-47-3	50 µg/L	83.7	70	130
		EG093A-F: Cobalt	7440-48-4	50 µg/L	83.0	70	130
		EG093A-F: Copper	7440-50-8	100 µg/L	75.3	70	130
		EG093A-F: Lead	7439-92-1	50 µg/L	81.4	70	130
		EG093A-F: Nickel	7440-02-0	50 µg/L	88.3	70	130
		EG093A-F: Vanadium	7440-62-2	50 µg/L	82.4	70	130
		EG093A-F: Zinc	7440-66-6	100 µg/L	81.6	70	130
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 743604)							
EB1702002-002	M6-B	EG093A-T: Arsenic	7440-38-2	50 µg/L	104	70	130
		EG093A-T: Barium	7440-39-3	250 µg/L	96.8	70	130
		EG093A-T: Cadmium	7440-43-9	50 µg/L	98.2	70	130
		EG093A-T: Chromium	7440-47-3	50 µg/L	98.0	70	130
		EG093A-T: Cobalt	7440-48-4	50 µg/L	96.6	70	130
		EG093A-T: Copper	7440-50-8	100 µg/L	100	70	130
		EG093A-T: Lead	7439-92-1	50 µg/L	94.4	70	130
		EG093A-T: Nickel	7440-02-0	50 µg/L	98.7	70	130
		EG093A-T: Vanadium	7440-62-2	50 µg/L	100	70	130
		EG093A-T: Zinc	7440-66-6	100 µg/L	93.5	70	130
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 743605)							
EB1702002-022	M8-B	EG093A-T: Arsenic	7440-38-2	50 µg/L	100	70	130
		EG093A-T: Barium	7440-39-3	250 µg/L	97.9	70	130
		EG093A-T: Cadmium	7440-43-9	50 µg/L	91.9	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
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 743605) - continued							
EB1702002-022	M8-B	EG093A-T: Chromium	7440-47-3	50 µg/L	97.0	70	130
		EG093A-T: Cobalt	7440-48-4	50 µg/L	97.6	70	130
		EG093A-T: Copper	7440-50-8	100 µg/L	96.8	70	130
		EG093A-T: Lead	7439-92-1	50 µg/L	100	70	130
		EG093A-T: Nickel	7440-02-0	50 µg/L	95.0	70	130
		EG093A-T: Vanadium	7440-62-2	50 µg/L	96.5	70	130
		EG093A-T: Zinc	7440-66-6	100 µg/L	97.2	70	130
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 743616)							
EB1702002-043	M37-M	EG093A-T: Arsenic	7440-38-2	50 µg/L	102	70	130
		EG093A-T: Barium	7440-39-3	250 µg/L	101	70	130
		EG093A-T: Cadmium	7440-43-9	50 µg/L	102	70	130
		EG093A-T: Chromium	7440-47-3	50 µg/L	103	70	130
		EG093A-T: Cobalt	7440-48-4	50 µg/L	104	70	130
		EG093A-T: Copper	7440-50-8	100 µg/L	103	70	130
		EG093A-T: Lead	7439-92-1	50 µg/L	101	70	130
		EG093A-T: Nickel	7440-02-0	50 µg/L	108	70	130
		EG093A-T: Vanadium	7440-62-2	50 µg/L	103	70	130
		EG093A-T: Zinc	7440-66-6	100 µg/L	104	70	130
EG093T: Total Metals in Saline Water by ORC-ICPMS (QCLot: 743618)							
EB1702002-063	M16-B	EG093A-T: Arsenic	7440-38-2	50 µg/L	99.8	70	130
		EG093A-T: Barium	7440-39-3	250 µg/L	101	70	130
		EG093A-T: Cadmium	7440-43-9	50 µg/L	98.1	70	130
		EG093A-T: Chromium	7440-47-3	50 µg/L	96.2	70	130
		EG093A-T: Cobalt	7440-48-4	50 µg/L	95.3	70	130
		EG093A-T: Copper	7440-50-8	100 µg/L	96.6	70	130
		EG093A-T: Lead	7439-92-1	50 µg/L	101	70	130
		EG093A-T: Nickel	7440-02-0	50 µg/L	96.8	70	130
		EG093A-T: Vanadium	7440-62-2	50 µg/L	99.8	70	130
		EG093A-T: Zinc	7440-66-6	100 µg/L	97.0	70	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 742891)							
EB1702002-002	M6-B	EK055G: Ammonia as N	7664-41-7	0.4 mg/L	106	70	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 742893)							
EB1702002-022	M8-B	EK055G: Ammonia as N	7664-41-7	0.4 mg/L	108	70	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 742895)							
EB1702002-027	M2-S	EK055G: Ammonia as N	7664-41-7	0.4 mg/L	107	70	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 742897)							
EB1702002-048	M13-S	EK055G: Ammonia as N	7664-41-7	0.4 mg/L	106	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
EK055G: Ammonia as N by Discrete Analyser (QCLot: 742900)							
EB1702002-051	M23-S	EK055G: Ammonia as N	7664-41-7	0.4 mg/L	107	70	130
EK055G: Ammonia as N by Discrete Analyser (QCLot: 742902)							
EB1702002-071	M20-SD	EK055G: Ammonia as N	7664-41-7	0.4 mg/L	108	70	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 742645)							
EB1702002-002	M6-B	EK057G: Nitrite as N	14797-65-0	0.4 mg/L	118	70	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 742646)							
EB1702002-022	M8-B	EK057G: Nitrite as N	14797-65-0	0.4 mg/L	96.6	70	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 742648)							
EB1702002-027	M2-S	EK057G: Nitrite as N	14797-65-0	0.4 mg/L	95.6	70	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 742650)							
EB1702002-048	M13-S	EK057G: Nitrite as N	14797-65-0	0.4 mg/L	116	70	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 742656)							
EB1702002-051	M23-S	EK057G: Nitrite as N	14797-65-0	0.4 mg/L	116	70	130
EK057G: Nitrite as N by Discrete Analyser (QCLot: 742658)							
EB1702002-071	M20-SD	EK057G: Nitrite as N	14797-65-0	0.4 mg/L	108	70	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 742892)							
EB1702002-002	M6-B	EK059G: Nitrite + Nitrate as N	----	0.4 mg/L	92.4	70	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 742894)							
EB1702002-022	M8-B	EK059G: Nitrite + Nitrate as N	----	0.4 mg/L	106	70	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 742896)							
EB1702002-027	M2-S	EK059G: Nitrite + Nitrate as N	----	0.4 mg/L	96.4	70	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 742898)							
EB1702002-048	M13-S	EK059G: Nitrite + Nitrate as N	----	0.4 mg/L	89.8	70	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 742901)							
EB1702002-051	M23-S	EK059G: Nitrite + Nitrate as N	----	0.4 mg/L	93.2	70	130
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 742903)							
EB1702002-071	M20-SD	EK059G: Nitrite + Nitrate as N	----	0.4 mg/L	95.6	70	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 743943)							
EB1702002-002	M6-B	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	92.0	70	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 744009)							
EB1702002-022	M8-B	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	90.9	70	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 744657)							
EB1701993-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	82.9	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
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 744659)							
EB1702002-049	M13-M	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	70.9	70	130
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 744661)							
EB1702002-069	M19-B	EK061G: Total Kjeldahl Nitrogen as N	----	5 mg/L	97.5	70	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 743942)							
EB1702002-002	M6-B	EK067G: Total Phosphorus as P	----	1 mg/L	99.5	70	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 744008)							
EB1702002-022	M8-B	EK067G: Total Phosphorus as P	----	1 mg/L	94.8	70	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 744656)							
EB1701993-002	Anonymous	EK067G: Total Phosphorus as P	----	1 mg/L	91.4	70	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 744658)							
EB1702002-049	M13-M	EK067G: Total Phosphorus as P	----	1 mg/L	94.4	70	130
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 744660)							
EB1702002-069	M19-B	EK067G: Total Phosphorus as P	----	1 mg/L	86.6	70	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 742644)							
EB1702002-002	M6-B	EK071G: Reactive Phosphorus as P	14265-44-2	0.4 mg/L	117	70	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 742647)							
EB1702002-022	M8-B	EK071G: Reactive Phosphorus as P	14265-44-2	0.4 mg/L	101	70	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 742649)							
EB1702002-027	M2-S	EK071G: Reactive Phosphorus as P	14265-44-2	0.4 mg/L	101	70	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 742651)							
EB1702002-048	M13-S	EK071G: Reactive Phosphorus as P	14265-44-2	0.4 mg/L	123	70	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 742657)							
EB1702002-051	M23-S	EK071G: Reactive Phosphorus as P	14265-44-2	0.4 mg/L	112	70	130
EK071G: Reactive Phosphorus as P by discrete analyser (QCLot: 742659)							
EB1702002-071	M20-SD	EK071G: Reactive Phosphorus as P	14265-44-2	0.4 mg/L	111	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 742347)							
EB1702002-002	M6-B	EP080: C6 - C9 Fraction	----	40 µg/L	105	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 742351)							
EB1702002-022	M8-B	EP080: C6 - C9 Fraction	----	40 µg/L	79.3	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 742353)							
EB1702002-042	M37-S	EP080: C6 - C9 Fraction	----	40 µg/L	104	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 742355)							
EB1702002-062	M16-M	EP080: C6 - C9 Fraction	----	40 µg/L	129	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*
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 742347)							
EB1702002-002	M6-B	EP080: C6 - C10 Fraction	C6_C10	40 µg/L	102	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 742351)							
EB1702002-022	M8-B	EP080: C6 - C10 Fraction	C6_C10	40 µg/L	83.8	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 742353)							
EB1702002-042	M37-S	EP080: C6 - C10 Fraction	C6_C10	40 µg/L	105	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 742355)							
EB1702002-062	M16-M	EP080: C6 - C10 Fraction	C6_C10	40 µg/L	123	70	130
EP080: BTEXN (QCLot: 742347)							
EB1702002-002	M6-B	EP080: Benzene	71-43-2	10 µg/L	92.1	70	130
		EP080: Toluene	108-88-3	10 µg/L	95.9	70	130
EP080: BTEXN (QCLot: 742351)							
EB1702002-022	M8-B	EP080: Benzene	71-43-2	10 µg/L	100	70	130
		EP080: Toluene	108-88-3	10 µg/L	89.3	70	130
EP080: BTEXN (QCLot: 742353)							
EB1702002-042	M37-S	EP080: Benzene	71-43-2	10 µg/L	93.9	70	130
		EP080: Toluene	108-88-3	10 µg/L	95.6	70	130
EP080: BTEXN (QCLot: 742355)							
EB1702002-062	M16-M	EP080: Benzene	71-43-2	10 µg/L	91.4	70	130
		EP080: Toluene	108-88-3	10 µg/L	96.1	70	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EB1702002**	Page	: 1 of 51
Amendment	: **2**		
Client	: **BMT WBM GROUP LTD**	Laboratory	: Environmental Division Brisbane
Contact	: MR JEREMY VISSER	Telephone	: +61-7-3243 7222
Project	: B21414 Elk	Date Samples Received	: 02-Feb-2017
Site	: ----	Issue Date	: 02-Mar-2017
Sampler	: BRAD HILES, DANIEL MORAN	No. of samples received	: 77
Order number	: ----	No. of samples analysed	: 77

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.**
- **NO Matrix Spike outliers occur.**
- **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 : 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
EA025: Total Suspended Solids dried at 104 ± 2°C						
Clear Plastic Bottle - Natural						
M6-S, M6-B, M3-S, M3-M, M3-B, M9-S, M9-M, M9-B, M10-S, M10-B, M4-S, M4-M, M4-B, M12-S, M12-M, M12-B	----	----	----	06-Feb-2017	22-Jan-2017	**15**
Clear Plastic Bottle - Natural						
M1-S, M1-B, M5-S, M5-B, M8-S, M8-B, M11-S, M11-SD, M11-M, M11-B, M2-S, M2-SD, M2-B, M46-S, M46-M, M46-B, M45-S, M45-B, M7-S, M7-B	----	----	----	06-Feb-2017	23-Jan-2017	**14**
Clear Plastic Bottle - Natural						
M25-S, M25-M, M25-B	----	----	----	06-Feb-2017	30-Jan-2017	**7**
Clear Plastic Bottle - Natural						
M31-S, M31-M, M31-B, M37-S, M37-M, M37-B	----	----	----	06-Feb-2017	31-Jan-2017	**6**
Clear Plastic Bottle - Natural						
M43-S, M43-M, M43-B, M13-S, M13-M, M13-B, M23-S, M23-B	----	----	----	06-Feb-2017	01-Feb-2017	**5**

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
EA025: Total Suspended Solids dried at 104 ± 2°C - Analysis Holding Time Compliance							
Clear Plastic Bottle - Natural							
M22-S,	M22-B,	----	----	----	06-Feb-2017	02-Feb-2017	**4**
M24-S,	M24-M,						
M24-B,	M15-S,						
M15-M,	M15-B,						
M16-S,	M16-M,						
M16-B,	M17-S,						
M17-SD,	M17-B,						
M19-S,	M19-SD,						
M19-B,	M20-S,						
M20-SD,	M20-B,						
M21-S,	M21-SD,						
M21-B							
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural							
M6-S,	M6-B,	----	----	----	03-Feb-2017	17-Jan-2017	**17**
M3-S,	M3-M,						
M3-B,	M9-S,						
M9-M,	M9-B,						
M10-S,	M10-B,						
M4-S,	M4-M,						
M4-B,	M12-S,						
M12-M,	M12-B						
Clear Plastic Bottle - Natural							
M1-S,	M1-B,	----	----	----	03-Feb-2017	18-Jan-2017	**16**
M5-S,	M5-B,						
M8-S,	M8-B,						
M11-S,	M11-SD,						
M11-M,	M11-B,						
M2-S,	M2-SD,						
M2-B,	M46-S,						
M46-M,	M46-B,						
M45-S,	M45-B,						
M7-S,	M7-B						
Clear Plastic Bottle - Natural							
M25-S,	M25-M,	----	----	----	03-Feb-2017	25-Jan-2017	**9**
M25-B							
Clear Plastic Bottle - Natural							
M31-S,	M31-M,	----	----	----	03-Feb-2017	26-Jan-2017	**8**
M31-B,	M37-S,						
M37-M,	M37-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
EK057G: Nitrite as N by Discrete Analyser - Analysis Holding Time Compliance						
Clear Plastic Bottle - Natural						
M43-S, M43-M, M43-B, M13-S, M13-M, M13-B, M23-S, M23-B	----	----	----	03-Feb-2017	27-Jan-2017	**7**
Clear Plastic Bottle - Natural						
M22-S, M22-B, M24-S, M24-M, M24-B, M15-S, M15-M, M15-B, M16-S, M16-M, M16-B, M17-S, M17-SD, M17-B, M19-S, M19-SD, M19-B, M20-S, M20-SD, M20-B, M21-S, M21-SD, M21-B	----	----	----	03-Feb-2017	28-Jan-2017	**6**
EK071G: Reactive Phosphorus as P by discrete analyser						
Clear Plastic Bottle - Natural						
M6-S, M6-B, M3-S, M3-M, M3-B, M9-S, M9-M, M9-B, M10-S, M10-B, M4-S, M4-M, M4-B, M12-S, M12-M, M12-B	----	----	----	03-Feb-2017	17-Jan-2017	**17**
Clear Plastic Bottle - Natural						
M1-S, M1-B, M5-S, M5-B, M8-S, M8-B, M11-S, M11-SD, M11-M, M11-B, M2-S, M2-SD, M2-B, M46-S, M46-M, M46-B, M45-S, M45-B, M7-S, M7-B	----	----	----	03-Feb-2017	18-Jan-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
EK071G: Reactive Phosphorus as P by discrete analyser - Analysis Holding Time Compliance						
Clear Plastic Bottle - Natural						
M25-S, M25-M, M25-B	----	----	----	03-Feb-2017	25-Jan-2017	**9**
Clear Plastic Bottle - Natural						
M31-S, M31-M, M31-B, M37-S, M37-M, M37-B	----	----	----	03-Feb-2017	26-Jan-2017	**8**
Clear Plastic Bottle - Natural						
M43-S, M43-M, M43-B, M13-S, M13-M, M13-B, M23-S, M23-B	----	----	----	03-Feb-2017	27-Jan-2017	**7**
Clear Plastic Bottle - Natural						
M22-S, M22-B, M24-S, M24-M, M24-B, M15-S, M15-M, M15-B, M16-S, M16-M, M16-B, M17-S, M17-SD, M17-B, M19-S, M19-SD, M19-B, M20-S, M20-SD, M20-B, M21-S, M21-SD, M21-B	----	----	----	03-Feb-2017	28-Jan-2017	**6**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons						
Amber Glass Bottle - Unpreserved						
M6-S, M6-B, M3-S, M3-M, M3-B, M9-S, M9-M, M9-B, M10-S, M10-B, M4-S, M4-M, M4-B, M12-S, M12-M, M12-B	03-Feb-2017	22-Jan-2017	**12**	----	----	----

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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Analysis Holding Time Compliance						
Amber Glass Bottle - Unpreserved						
M1-S, M1-B, M5-S, M5-B, M8-S, M8-B, M11-S, M11-SD, M11-M, M11-B, M2-S, M2-SD, M2-B, M46-S, M46-M, M46-B, M45-B, M7-S, M7-B	03-Feb-2017	23-Jan-2017	**11**	----	----	----
Amber Glass Bottle - Unpreserved						
M25-S, M25-M, M25-B	03-Feb-2017	30-Jan-2017	**4**	----	----	----
Amber Glass Bottle - Unpreserved						
M31-S, M31-M, M31-B, M37-S, M37-M, M37-B	03-Feb-2017	31-Jan-2017	**3**	----	----	----
Amber Glass Bottle - Unpreserved						
M43-S, M43-M, M43-B, M13-S, M13-M, M13-B, M23-S, M23-B	03-Feb-2017	01-Feb-2017	**2**	----	----	----
Amber Glass Bottle - Unpreserved						
M22-S, M22-B, M24-S, M24-M, M24-B, M15-S, M15-M, M15-B, M16-S, M16-M, M16-B, M17-S, M17-SD, M17-B, M19-S, M19-SD, M19-B, M20-S, M20-SD, M20-B, M21-S, M21-SD, M21-B	03-Feb-2017	02-Feb-2017	**1**	----	----	----
Clear Plastic Bottle - Natural						
M45-S	03-Feb-2017	23-Jan-2017	**11**	----	----	----
EP080/071: Total Petroleum Hydrocarbons						

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
EP080/071: Total Petroleum Hydrocarbons - Analysis Holding Time Compliance						
Amber Glass Bottle - Unpreserved						
M6-S, M6-B, M3-S, M3-M, M3-B, M9-S, M9-M, M9-B, M10-S, M10-B, M4-S, M4-M, M4-B, M12-S, M12-M, M12-B	03-Feb-2017	22-Jan-2017	**12**	----	----	----
Amber Glass Bottle - Unpreserved						
M1-S, M1-B, M5-S, M5-B, M8-S, M8-B, M11-S, M11-SD, M11-M, M11-B, M2-S, M2-SD, M2-B, M46-S, M46-M, M46-B, M45-B, M7-S, M7-B	03-Feb-2017	23-Jan-2017	**11**	----	----	----
Amber Glass Bottle - Unpreserved						
M25-S, M25-M, M25-B	03-Feb-2017	30-Jan-2017	**4**	----	----	----
Amber Glass Bottle - Unpreserved						
M31-S, M31-M, M31-B, M37-S, M37-M, M37-B	03-Feb-2017	31-Jan-2017	**3**	----	----	----
Amber Glass Bottle - Unpreserved						
M43-S, M43-M, M43-B, M13-S, M13-M, M13-B, M23-S, M23-B	03-Feb-2017	01-Feb-2017	**2**	----	----	----

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
EP080/071: Total Petroleum Hydrocarbons - Analysis Holding Time Compliance						
Amber Glass Bottle - Unpreserved						
M22-S, M22-B, M24-S, M24-M, M24-B, M15-S, M15-M, M15-B, M16-S, M16-M, M16-B, M17-S, M17-SD, M17-B, M19-S, M19-SD, M19-B, M20-S, M20-SD, M20-B, M21-S, M21-SD, M21-B	03-Feb-2017	02-Feb-2017	**1**	----	----	----
Amber VOC Vial - Sulfuric Acid						
M6-S, M6-B, M3-S, M3-M, M3-B, M9-S, M9-M, M9-B, M10-S, M10-B, M4-S, M4-M, M4-B, M12-S, M12-M, M12-B	03-Feb-2017	29-Jan-2017	**5**	03-Feb-2017	29-Jan-2017	**5**
Amber VOC Vial - Sulfuric Acid						
M1-S, M1-B, M5-S, M5-B, M8-S, M8-B, M11-S, M11-SD, M11-M, M11-B, M2-S, M2-SD, M2-B, M46-S, M46-M, M46-B, M45-S, M45-B, Trip Blank, M7-S, M7-B	03-Feb-2017	30-Jan-2017	**4**	03-Feb-2017	30-Jan-2017	**4**
Clear Plastic Bottle - Natural						
M45-S	03-Feb-2017	23-Jan-2017	**11**	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions						

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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Analysis Holding Time						
Amber Glass Bottle - Unpreserved						
M6-S, M6-B, M3-S, M3-M, M3-B, M9-S, M9-M, M9-B, M10-S, M10-B, M4-S, M4-M, M4-B, M12-S, M12-M, M12-B	03-Feb-2017	22-Jan-2017	**12**	----	----	----
Amber Glass Bottle - Unpreserved						
M1-S, M1-B, M5-S, M5-B, M8-S, M8-B, M11-S, M11-SD, M11-M, M11-B, M2-S, M2-SD, M2-B, M46-S, M46-M, M46-B, M45-B, M7-S, M7-B	03-Feb-2017	23-Jan-2017	**11**	----	----	----
Amber Glass Bottle - Unpreserved						
M25-S, M25-M, M25-B	03-Feb-2017	30-Jan-2017	**4**	----	----	----
Amber Glass Bottle - Unpreserved						
M31-S, M31-M, M31-B, M37-S, M37-M, M37-B	03-Feb-2017	31-Jan-2017	**3**	----	----	----
Amber Glass Bottle - Unpreserved						
M43-S, M43-M, M43-B, M13-S, M13-M, M13-B, M23-S, M23-B	03-Feb-2017	01-Feb-2017	**2**	----	----	----

Matrix: **WATER**

Method / Container / Client Sample ID(s)	Extraction / Preparation: Date extracted	Extraction / Preparation: Due for extraction	Extraction / Preparation: Days overdue	Analysis: Date analysed	Analysis: Due for analysis	Analysis: Days overdue
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Analysis Holding Time						
Amber Glass Bottle - Unpreserved						
M22-S, M22-B, M24-S, M24-M, M24-B, M15-S, M15-M, M15-B, M16-S, M16-M, M16-B, M17-S, M17-SD, M17-B, M19-S, M19-SD, M19-B, M20-S, M20-SD, M20-B, M21-S, M21-SD, M21-B	03-Feb-2017	02-Feb-2017	**1**	----	----	----
Amber VOC Vial - Sulfuric Acid						
M6-S, M6-B, M3-S, M3-M, M3-B, M9-S, M9-M, M9-B, M10-S, M10-B, M4-S, M4-M, M4-B, M12-S, M12-M, M12-B	03-Feb-2017	29-Jan-2017	**5**	03-Feb-2017	29-Jan-2017	**5**
Amber VOC Vial - Sulfuric Acid						
M1-S, M1-B, M5-S, M5-B, M8-S, M8-B, M11-S, M11-SD, M11-M, M11-B, M2-S, M2-SD, M2-B, M46-S, M46-M, M46-B, M45-S, M45-B, Trip Blank, M7-S, M7-B	03-Feb-2017	30-Jan-2017	**4**	03-Feb-2017	30-Jan-2017	**4**
Clear Plastic Bottle - Natural						
M45-S	03-Feb-2017	23-Jan-2017	**11**	----	----	----
EP080: BTEXN						

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
EP080: BTEXN - Analysis Holding Time Compliance						
Amber VOC Vial - Sulfuric Acid						
M6-S, M6-B, M3-S, M3-M, M3-B, M9-S, M9-M, M9-B, M10-S, M10-B, M4-S, M4-M, M4-B, M12-S, M12-M, M12-B	03-Feb-2017	29-Jan-2017	**5**	03-Feb-2017	29-Jan-2017	**5**
Amber VOC Vial - Sulfuric Acid						
M1-S, M1-B, M5-S, M5-B, M8-S, M8-B, M11-S, M11-SD, M11-M, M11-B, M2-S, M2-SD, M2-B, M46-S, M46-M, M46-B, M45-S, M45-B, Trip Blank, M7-S, M7-B	03-Feb-2017	30-Jan-2017	**4**	03-Feb-2017	30-Jan-2017	**4**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	76	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	79	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	76	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	79	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
EA025: Total Suspended Solids dried at 104 ± 2°C							
Clear Plastic Bottle - Natural (EA025)							
M6-S, M6-B, M3-S, M3-M, M3-B, M9-S, M9-M, M9-B, M10-S, M10-B, M4-S, M4-M, M4-B, M12-S, M12-M, M12-B	**15-Jan-2017**	**----**	----	----	**06-Feb-2017**	22-Jan-2017	×
Clear Plastic Bottle - Natural (EA025)							
M1-S, M1-B, M5-S, M5-B, M8-S, M8-B, M11-S, M11-SD, M11-M, M11-B, M2-S, M2-SD, M2-B, M46-S, M46-M, M46-B, M45-S, M45-B, M7-S, M7-B	**16-Jan-2017**	**----**	----	----	**06-Feb-2017**	23-Jan-2017	×
Clear Plastic Bottle - Natural (EA025)							
M25-S, M25-M, M25-B	**23-Jan-2017**	**----**	----	----	**06-Feb-2017**	30-Jan-2017	×
Clear Plastic Bottle - Natural (EA025)							
M31-S, M31-M, M31-B, M37-S, M37-M, M37-B	**24-Jan-2017**	**----**	----	----	**06-Feb-2017**	31-Jan-2017	×
Clear Plastic Bottle - Natural (EA025)							
M43-S, M43-M, M43-B, M13-S, M13-M, M13-B, M23-S, M23-B	**25-Jan-2017**	**----**	----	----	**06-Feb-2017**	01-Feb-2017	×
Clear Plastic Bottle - Natural (EA025)							

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
EA025: Total Suspended Solids dried at 104 ± 2°C - Continued							
M22-S, M22-B, M24-S, M24-M, M24-B, M15-S, M15-M, M15-B, M16-S, M16-M, M16-B, M17-S, M17-SD, M17-B, M19-S, M19-SD, M19-B, M20-S, M20-SD, M20-B, M21-S, M21-SD, M21-B	**26-Jan-2017**	**----**	----	----	**06-Feb-2017**	02-Feb-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
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							
M6-S, M6-B, M3-S, M3-M, M3-B, M9-S, M9-M, M9-B, M10-S, M10-B, M4-S, M4-M, M4-B, M12-S, M12-M, M12-B	**15-Jan-2017**	**----**	----	----	**06-Feb-2017**	12-Feb-2017	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							
M1-S, M1-B, M5-S, M5-B, M8-S, M8-B, M11-S, M11-SD, M11-M, M11-B, M2-S, M2-SD, M2-B, M46-S, M46-M, M46-B, M45-S, M45-B	**16-Jan-2017**	**----**	----	----	**06-Feb-2017**	13-Feb-2017	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							
M7-S, M7-B	**16-Jan-2017**	**----**	----	----	**07-Feb-2017**	13-Feb-2017	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							
M25-S, M25-M, M25-B	**23-Jan-2017**	**----**	----	----	**06-Feb-2017**	20-Feb-2017	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							
M31-S, M31-M, M31-B	**24-Jan-2017**	**----**	----	----	**06-Feb-2017**	21-Feb-2017	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							
M37-S, M37-M, M37-B	**24-Jan-2017**	**----**	----	----	**07-Feb-2017**	21-Feb-2017	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							
M43-S, M43-M, M43-B, M13-S, M13-M, M13-B, M23-S, M23-B	**25-Jan-2017**	**----**	----	----	**07-Feb-2017**	22-Feb-2017	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG035F)							

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
EG035F: Dissolved Mercury by FIMS - Continued								
M22-S,	M22-B,	**26-Jan-2017**	**----**	----	----	**07-Feb-2017**	23-Feb-2017	✓
M24-S,	M24-M,							
M24-B,	M15-S,							
M15-M,	M15-B,							
M16-S,	M16-M,							
M16-B,	M17-S,							
M17-SD,	M17-B,							
M19-S,	M19-SD,							
M19-B,	M20-S,							
M20-SD,	M20-B,							
M21-S,	M21-SD,							
M21-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
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG035T)							
M6-S, M6-B, M3-S, M3-M, M3-B, M9-S, M9-M, M9-B, M10-S, M10-B, M4-S, M4-M, M4-B, M12-S, M12-M, M12-B	**15-Jan-2017**	**----**	----	----	**06-Feb-2017**	12-Feb-2017	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG035T)							
M1-S, M1-B, M5-S, M5-B, M8-S, M8-B, M11-S, M11-SD, M11-M, M11-B, M2-S, M2-SD, M2-B, M46-S, M46-M, M46-B, M45-S, M45-B, M7-S, M7-B	**16-Jan-2017**	**----**	----	----	**06-Feb-2017**	13-Feb-2017	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG035T)							
M25-S, M25-M, M25-B	**23-Jan-2017**	**----**	----	----	**06-Feb-2017**	20-Feb-2017	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG035T)							
M31-S, M31-M, M31-B, M37-S, M37-M, M37-B	**24-Jan-2017**	**----**	----	----	**06-Feb-2017**	21-Feb-2017	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG035T)							
M43-S, M43-M, M43-B, M13-S, M13-M, M13-B, M23-S, M23-B	**25-Jan-2017**	**----**	----	----	**06-Feb-2017**	22-Feb-2017	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG035T)							

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
EG035T: Total Recoverable Mercury by FIMS - Continued							
M22-S, M22-B, M24-S, M24-M, M24-B, M15-S, M15-M, M15-B, M16-S, M16-M, M16-B, M17-S, M17-SD, M17-B, M19-S, M19-SD, M19-B, M20-S, M20-SD, M20-B, M21-S, M21-SD, M21-B	**26-Jan-2017**	**----**	----	----	**06-Feb-2017**	23-Feb-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
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS							
Clear Plastic Bottle - Filtered; Lab-acidified (EG093B-F)							
M6-S, M6-B, M3-S, M3-M, M3-B, M9-S, M9-M, M9-B, M10-S, M10-B, M4-S, M4-M, M4-B, M12-S, M12-M, M12-B	**15-Jan-2017**	**----**	----	----	**06-Feb-2017**	14-Jul-2017	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG093B-F)							
M1-S, M1-B, M5-S, M5-B, M8-S, M8-B, M11-S, M11-SD, M11-M, M11-B, M2-S, M2-SD, M2-B, M46-S, M46-M, M46-B, M45-S, M45-B, M7-S, M7-B	**16-Jan-2017**	**----**	----	----	**06-Feb-2017**	15-Jul-2017	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG093B-F)							
M25-S, M25-M, M25-B	**23-Jan-2017**	**----**	----	----	**06-Feb-2017**	22-Jul-2017	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG093B-F)							
M31-S, M31-M, M31-B, M37-S, M37-M, M37-B	**24-Jan-2017**	**----**	----	----	**06-Feb-2017**	23-Jul-2017	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG093B-F)							
M43-S, M43-M, M43-B, M13-S, M13-M, M13-B, M23-S, M23-B	**25-Jan-2017**	**----**	----	----	**06-Feb-2017**	24-Jul-2017	✓
Clear Plastic Bottle - Filtered; Lab-acidified (EG093B-F)							

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
EG093F: Dissolved Metals in Saline Water by ORC-ICPMS - Continued							
M22-S, M22-B, M24-S, M24-M, M24-B, M15-S, M15-M, M15-B, M16-S, M16-M, M16-B, M17-S, M17-SD, M17-B, M19-S, M19-SD, M19-B, M20-S, M20-SD, M20-B, M21-S, M21-SD, M21-B	**26-Jan-2017**	**----**	----	----	**06-Feb-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
EG093T: Total Metals in Saline Water by ORC-ICPMS							
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG093B-T)							
M6-S, M6-B, M3-S, M3-M, M3-B, M9-S, M9-M, M9-B, M10-S, M10-B, M4-S, M4-M, M4-B, M12-S, M12-M, M12-B	**15-Jan-2017**	**06-Feb-2017**	14-Jul-2017	✓	**06-Feb-2017**	14-Jul-2017	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG093B-T)							
M1-S, M1-B, M5-S, M5-B, M8-S, M8-B, M11-S, M11-SD, M11-M, M11-B, M2-S, M2-SD, M2-B, M46-S, M46-M, M46-B, M45-S, M45-B, M7-S, M7-B	**16-Jan-2017**	**06-Feb-2017**	15-Jul-2017	✓	**06-Feb-2017**	15-Jul-2017	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG093B-T)							
M25-S, M25-M, M25-B	**23-Jan-2017**	**06-Feb-2017**	22-Jul-2017	✓	**06-Feb-2017**	22-Jul-2017	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG093B-T)							
M31-S, M31-M, M31-B, M37-S, M37-M, M37-B	**24-Jan-2017**	**06-Feb-2017**	23-Jul-2017	✓	**06-Feb-2017**	23-Jul-2017	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG093B-T)							
M43-S, M43-M, M43-B, M13-S, M13-M, M13-B, M23-S, M23-B	**25-Jan-2017**	**06-Feb-2017**	24-Jul-2017	✓	**06-Feb-2017**	24-Jul-2017	✓
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG093B-T)							

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
EG093T: Total Metals in Saline Water by ORC-ICPMS - Continued							
M22-S, M22-B, M24-S, M24-M, M24-B, M15-S, M15-M, M15-B, M16-S, M16-M, M16-B, M17-S, M17-SD, M17-B, M19-S, M19-SD, M19-B, M20-S, M20-SD, M20-B, M21-S, M21-SD, M21-B	**26-Jan-2017**	**06-Feb-2017**	25-Jul-2017	✓	**06-Feb-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
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
M6-S, M6-B, M3-S, M3-M, M3-B, M9-S, M9-M, M9-B, M10-S, M10-B, M4-S, M4-M, M4-B, M12-S, M12-M, M12-B	**15-Jan-2017**	**----**	----	----	**03-Feb-2017**	12-Feb-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
M1-S, M1-B, M5-S, M5-B, M8-S, M8-B, M11-S, M11-SD, M11-M, M11-B, M2-S, M2-SD, M2-B, M46-S, M46-M, M46-B, M45-S, M45-B, M7-S, M7-B	**16-Jan-2017**	**----**	----	----	**03-Feb-2017**	13-Feb-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
M25-S, M25-M, M25-B	**23-Jan-2017**	**----**	----	----	**03-Feb-2017**	20-Feb-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
M31-S, M31-M, M31-B, M37-S, M37-M, M37-B	**24-Jan-2017**	**----**	----	----	**03-Feb-2017**	21-Feb-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK055G)							
M43-S, M43-M, M43-B, M13-S, M13-M, M13-B, M23-S, M23-B	**25-Jan-2017**	**----**	----	----	**03-Feb-2017**	22-Feb-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK055G)							

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
EK055G: Ammonia as N by Discrete Analyser - Continued							
M22-S, M22-B, M24-S, M24-M, M24-B, M15-S, M15-M, M15-B, M16-S, M16-M, M16-B, M17-S, M17-SD, M17-B, M19-S, M19-SD, M19-B, M20-S, M20-SD, M20-B, M21-S, M21-SD, M21-B	**26-Jan-2017**	**----**	----	----	**03-Feb-2017**	23-Feb-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
EK057G: Nitrite as N by Discrete Analyser							
Clear Plastic Bottle - Natural (EK057G)							
M6-S, M6-B, M3-S, M3-M, M3-B, M9-S, M9-M, M9-B, M10-S, M10-B, M4-S, M4-M, M4-B, M12-S, M12-M, M12-B	**15-Jan-2017**	**----**	----	----	**03-Feb-2017**	17-Jan-2017	×
Clear Plastic Bottle - Natural (EK057G)							
M1-S, M1-B, M5-S, M5-B, M8-S, M8-B, M11-S, M11-SD, M11-M, M11-B, M2-S, M2-SD, M2-B, M46-S, M46-M, M46-B, M45-S, M45-B, M7-S, M7-B	**16-Jan-2017**	**----**	----	----	**03-Feb-2017**	18-Jan-2017	×
Clear Plastic Bottle - Natural (EK057G)							
M25-S, M25-M, M25-B	**23-Jan-2017**	**----**	----	----	**03-Feb-2017**	25-Jan-2017	×
Clear Plastic Bottle - Natural (EK057G)							
M31-S, M31-M, M31-B, M37-S, M37-M, M37-B	**24-Jan-2017**	**----**	----	----	**03-Feb-2017**	26-Jan-2017	×
Clear Plastic Bottle - Natural (EK057G)							
M43-S, M43-M, M43-B, M13-S, M13-M, M13-B, M23-S, M23-B	**25-Jan-2017**	**----**	----	----	**03-Feb-2017**	27-Jan-2017	×
Clear Plastic Bottle - Natural (EK057G)							

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
EK057G: Nitrite as N by Discrete Analyser - Continued								
M22-S,	M22-B,	**26-Jan-2017**	**----**	----	----	**03-Feb-2017**	28-Jan-2017	✘
M24-S,	M24-M,							
M24-B,	M15-S,							
M15-M,	M15-B,							
M16-S,	M16-M,							
M16-B,	M17-S,							
M17-SD,	M17-B,							
M19-S,	M19-SD,							
M19-B,	M20-S,							
M20-SD,	M20-B,							
M21-S,	M21-SD,							
M21-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
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
M6-S, M6-B, M3-S, M3-M, M3-B, M9-S, M9-M, M9-B, M10-S, M10-B, M4-S, M4-M, M4-B, M12-S, M12-M, M12-B	**15-Jan-2017**	**----**	----	----	**03-Feb-2017**	12-Feb-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
M1-S, M1-B, M5-S, M5-B, M8-S, M8-B, M11-S, M11-SD, M11-M, M11-B, M2-S, M2-SD, M2-B, M46-S, M46-M, M46-B, M45-S, M45-B, M7-S, M7-B	**16-Jan-2017**	**----**	----	----	**03-Feb-2017**	13-Feb-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
M25-S, M25-M, M25-B	**23-Jan-2017**	**----**	----	----	**03-Feb-2017**	20-Feb-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
M31-S, M31-M, M31-B, M37-S, M37-M, M37-B	**24-Jan-2017**	**----**	----	----	**03-Feb-2017**	21-Feb-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK059G)							
M43-S, M43-M, M43-B, M13-S, M13-M, M13-B, M23-S, M23-B	**25-Jan-2017**	**----**	----	----	**03-Feb-2017**	22-Feb-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK059G)							

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
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser - Continued							
M22-S, M22-B, M24-S, M24-M, M24-B, M15-S, M15-M, M15-B, M16-S, M16-M, M16-B, M17-S, M17-SD, M17-B, M19-S, M19-SD, M19-B, M20-S, M20-SD, M20-B, M21-S, M21-SD, M21-B	**26-Jan-2017**	**----**	----	----	**03-Feb-2017**	23-Feb-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
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
M6-S, M6-B, M3-S, M3-M, M3-B, M9-S, M9-M, M9-B, M10-S, M10-B, M4-S, M4-M, M4-B, M12-S, M12-M, M12-B	**15-Jan-2017**	**06-Feb-2017**	12-Feb-2017	✓	**06-Feb-2017**	12-Feb-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
M1-S, M1-B, M5-S, M5-B, M8-S, M8-B, M11-S, M11-SD, M11-M, M11-B, M2-S, M2-SD, M2-B, M46-S, M46-M, M46-B, M45-S, M45-B	**16-Jan-2017**	**06-Feb-2017**	13-Feb-2017	✓	**06-Feb-2017**	13-Feb-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
M7-S, M7-B	**16-Jan-2017**	**08-Feb-2017**	13-Feb-2017	✓	**08-Feb-2017**	13-Feb-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
M25-S, M25-M, M25-B	**23-Jan-2017**	**06-Feb-2017**	20-Feb-2017	✓	**06-Feb-2017**	20-Feb-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
M31-S, M31-M, M31-B	**24-Jan-2017**	**06-Feb-2017**	21-Feb-2017	✓	**06-Feb-2017**	21-Feb-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
M37-S, M37-M, M37-B	**24-Jan-2017**	**08-Feb-2017**	21-Feb-2017	✓	**08-Feb-2017**	21-Feb-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK061G)							
M43-S, M43-M, M43-B, M13-S, M13-M, M13-B, M23-S, M23-B	**25-Jan-2017**	**08-Feb-2017**	22-Feb-2017	✓	**08-Feb-2017**	22-Feb-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK061G)							

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
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser - Continued							
M22-S, M22-B, M24-S, M24-M, M24-B, M15-S, M15-M, M15-B, M16-S, M16-M, M16-B, M17-S, M17-SD, M17-B, M19-S, M19-SD, M19-B, M20-S, M20-SD, M20-B, M21-S, M21-SD, M21-B	**26-Jan-2017**	**08-Feb-2017**	23-Feb-2017	✓	**08-Feb-2017**	23-Feb-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
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
M6-S, M6-B, M3-S, M3-M, M3-B, M9-S, M9-M, M9-B, M10-S, M10-B, M4-S, M4-M, M4-B, M12-S, M12-M, M12-B	**15-Jan-2017**	**06-Feb-2017**	12-Feb-2017	✓	**06-Feb-2017**	12-Feb-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
M1-S, M1-B, M5-S, M5-B, M8-S, M8-B, M11-S, M11-SD, M11-M, M11-B, M2-S, M2-SD, M2-B, M46-S, M46-M, M46-B, M45-S, M45-B	**16-Jan-2017**	**06-Feb-2017**	13-Feb-2017	✓	**06-Feb-2017**	13-Feb-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
M7-S, M7-B	**16-Jan-2017**	**08-Feb-2017**	13-Feb-2017	✓	**08-Feb-2017**	13-Feb-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
M25-S, M25-M, M25-B	**23-Jan-2017**	**06-Feb-2017**	20-Feb-2017	✓	**06-Feb-2017**	20-Feb-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
M31-S, M31-M, M31-B	**24-Jan-2017**	**06-Feb-2017**	21-Feb-2017	✓	**06-Feb-2017**	21-Feb-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
M37-S, M37-M, M37-B	**24-Jan-2017**	**08-Feb-2017**	21-Feb-2017	✓	**08-Feb-2017**	21-Feb-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK067G)							
M43-S, M43-M, M43-B, M13-S, M13-M, M13-B, M23-S, M23-B	**25-Jan-2017**	**08-Feb-2017**	22-Feb-2017	✓	**08-Feb-2017**	22-Feb-2017	✓
Clear Plastic Bottle - Sulfuric Acid (EK067G)							

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
EK067G: Total Phosphorus as P by Discrete Analyser - Continued							
M22-S, M22-B, M24-S, M24-M, M24-B, M15-S, M15-M, M15-B, M16-S, M16-M, M16-B, M17-S, M17-SD, M17-B, M19-S, M19-SD, M19-B, M20-S, M20-SD, M20-B, M21-S, M21-SD, M21-B	**26-Jan-2017**	**08-Feb-2017**	23-Feb-2017	✓	**08-Feb-2017**	23-Feb-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
EK071G: Reactive Phosphorus as P by discrete analyser							
Clear Plastic Bottle - Natural (EK071G)							
M6-S, M6-B, M3-S, M3-M, M3-B, M9-S, M9-M, M9-B, M10-S, M10-B, M4-S, M4-M, M4-B, M12-S, M12-M, M12-B	**15-Jan-2017**	**----**	----	----	**03-Feb-2017**	17-Jan-2017	×
Clear Plastic Bottle - Natural (EK071G)							
M1-S, M1-B, M5-S, M5-B, M8-S, M8-B, M11-S, M11-SD, M11-M, M11-B, M2-S, M2-SD, M2-B, M46-S, M46-M, M46-B, M45-S, M45-B, M7-S, M7-B	**16-Jan-2017**	**----**	----	----	**03-Feb-2017**	18-Jan-2017	×
Clear Plastic Bottle - Natural (EK071G)							
M25-S, M25-M, M25-B	**23-Jan-2017**	**----**	----	----	**03-Feb-2017**	25-Jan-2017	×
Clear Plastic Bottle - Natural (EK071G)							
M31-S, M31-M, M31-B, M37-S, M37-M, M37-B	**24-Jan-2017**	**----**	----	----	**03-Feb-2017**	26-Jan-2017	×
Clear Plastic Bottle - Natural (EK071G)							
M43-S, M43-M, M43-B, M13-S, M13-M, M13-B, M23-S, M23-B	**25-Jan-2017**	**----**	----	----	**03-Feb-2017**	27-Jan-2017	×
Clear Plastic Bottle - Natural (EK071G)							

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
EK071G: Reactive Phosphorus as P by discrete analyser - Continued							
M22-S, M22-B, M24-S, M24-M, M24-B, M15-S, M15-M, M15-B, M16-S, M16-M, M16-B, M17-S, M17-SD, M17-B, M19-S, M19-SD, M19-B, M20-S, M20-SD, M20-B, M21-S, M21-SD, M21-B	**26-Jan-2017**	**----**	----	----	**03-Feb-2017**	28-Jan-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
EP008: Chlorophyll a & Pheophytin a							
Glass Fibre Filter Paper (Chlorophyll) (EP008)							
M6-S, M6-B, M3-S, M3-M, M3-B, M9-S, M9-M, M9-B, M10-S, M10-B, M4-S, M4-M, M4-B, M12-S, M12-M, M12-B	**15-Jan-2017**	**----**	----	----	**03-Feb-2017**	05-Feb-2017	✓
Glass Fibre Filter Paper (Chlorophyll) (EP008)							
M1-S, M1-B, M5-S, M5-B, M8-S, M8-B, M11-S, M11-SD, M11-M, M11-B, M2-S, M2-SD, M2-B, M46-S, M46-M, M46-B, M45-S, M45-B, M7-S, M7-B	**16-Jan-2017**	**----**	----	----	**03-Feb-2017**	06-Feb-2017	✓
Glass Fibre Filter Paper (Chlorophyll) (EP008)							
M25-S, M25-M, M25-B	**23-Jan-2017**	**----**	----	----	**03-Feb-2017**	13-Feb-2017	✓
Glass Fibre Filter Paper (Chlorophyll) (EP008)							
M31-S, M31-M, M31-B, M37-S, M37-M, M37-B	**24-Jan-2017**	**----**	----	----	**03-Feb-2017**	14-Feb-2017	✓
Glass Fibre Filter Paper (Chlorophyll) (EP008)							
M43-S, M43-M, M43-B, M13-S, M13-M, M13-B, M23-S, M23-B	**25-Jan-2017**	**----**	----	----	**03-Feb-2017**	15-Feb-2017	✓
Glass Fibre Filter Paper (Chlorophyll) (EP008)							

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
EP008: Chlorophyll a & Pheophytin a - Continued								
M22-S,	M22-B,	**26-Jan-2017**	**----**	----	----	**03-Feb-2017**	16-Feb-2017	✓
M24-S,	M24-M,							
M24-B,	M15-S,							
M15-M,	M15-B,							
M16-S,	M16-M,							
M16-B,	M17-S,							
M17-SD,	M17-B,							
M19-S,	M19-SD,							
M19-B,	M20-S,							
M20-SD,	M20-B,							
M21-S,	M21-SD,							
M21-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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075(SIM))								
M6-S,	M6-B,	**15-Jan-2017**	**03-Feb-2017**	22-Jan-2017	×	**06-Feb-2017**	15-Mar-2017	✓
M3-S,	M3-M,							
M3-B,	M9-S,							
M9-M,	M9-B,							
M10-S,	M10-B,							
M4-S,	M4-M,							
M4-B,	M12-S,							
M12-M,	M12-B							
Amber Glass Bottle - Unpreserved (EP075(SIM))								
M1-S,	M1-B,	**16-Jan-2017**	**03-Feb-2017**	23-Jan-2017	×	**06-Feb-2017**	15-Mar-2017	✓
M5-S,	M5-B,							
M8-S,	M8-B,							
M11-S,	M11-SD,							
M11-M,	M11-B,							
M2-S,	M2-SD,							
M2-B,	M46-S,							
M46-M,	M46-B,							
M45-B,	M7-S,							
M7-B								
Amber Glass Bottle - Unpreserved (EP075(SIM))								
M25-S,	M25-M,	**23-Jan-2017**	**03-Feb-2017**	30-Jan-2017	×	**06-Feb-2017**	15-Mar-2017	✓
M25-B								
Amber Glass Bottle - Unpreserved (EP075(SIM))								
M31-S,	M31-M,	**24-Jan-2017**	**03-Feb-2017**	31-Jan-2017	×	**06-Feb-2017**	15-Mar-2017	✓
M31-B,	M37-S,							
M37-M,	M37-B							
Amber Glass Bottle - Unpreserved (EP075(SIM))								
M43-S,	M43-M,	**25-Jan-2017**	**03-Feb-2017**	01-Feb-2017	×	**06-Feb-2017**	15-Mar-2017	✓
M43-B,	M13-S,							
M13-M,	M13-B,							
M23-S,	M23-B							
Amber Glass Bottle - Unpreserved (EP075(SIM))								

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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued							
M22-S, M22-B, M24-S, M24-M, M24-B, M15-S, M15-M, M15-B, M16-S, M16-M, M16-B, M17-S, M17-SD, M17-B, M19-S, M19-SD, M19-B, M20-S, M20-SD, M20-B, M21-S, M21-SD, M21-B	**26-Jan-2017**	**03-Feb-2017**	02-Feb-2017	×	**06-Feb-2017**	15-Mar-2017	✓
Clear Plastic Bottle - Natural (EP075(SIM))							
M45-S	**16-Jan-2017**	**03-Feb-2017**	23-Jan-2017	×	**06-Feb-2017**	15-Mar-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
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
M6-S, M6-B, M3-S, M3-M, M3-B, M9-S, M9-M, M9-B, M10-S, M10-B, M4-S, M4-M, M4-B, M12-S, M12-M, M12-B	**15-Jan-2017**	**03-Feb-2017**	22-Jan-2017	×	**06-Feb-2017**	15-Mar-2017	✓
Amber Glass Bottle - Unpreserved (EP071)							
M1-S, M1-B, M5-S, M5-B, M8-S, M8-B, M11-S, M11-SD, M11-M, M11-B, M2-S, M2-SD, M2-B, M46-S, M46-M, M46-B, M45-B, M7-S, M7-B	**16-Jan-2017**	**03-Feb-2017**	23-Jan-2017	×	**06-Feb-2017**	15-Mar-2017	✓
Amber Glass Bottle - Unpreserved (EP071)							
M25-S, M25-M, M25-B	**23-Jan-2017**	**03-Feb-2017**	30-Jan-2017	×	**06-Feb-2017**	15-Mar-2017	✓
Amber Glass Bottle - Unpreserved (EP071)							
M31-S, M31-M, M31-B, M37-S, M37-M, M37-B	**24-Jan-2017**	**03-Feb-2017**	31-Jan-2017	×	**06-Feb-2017**	15-Mar-2017	✓
Amber Glass Bottle - Unpreserved (EP071)							
M43-S, M43-M, M43-B, M13-S, M13-M, M13-B, M23-S, M23-B	**25-Jan-2017**	**03-Feb-2017**	01-Feb-2017	×	**06-Feb-2017**	15-Mar-2017	✓
Amber Glass Bottle - Unpreserved (EP071)							

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
EP080/071: Total Petroleum Hydrocarbons - Continued							
M22-S, M22-B, M24-S, M24-M, M24-B, M15-S, M15-M, M15-B, M16-S, M16-M, M16-B, M17-S, M17-SD, M17-B, M19-S, M19-SD, M19-B, M20-S, M20-SD, M20-B, M21-S, M21-SD, M21-B	**26-Jan-2017**	**03-Feb-2017**	02-Feb-2017	×	**06-Feb-2017**	15-Mar-2017	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
M6-S, M6-B, M3-S, M3-M, M3-B, M9-S, M9-M, M9-B, M10-S, M10-B, M4-S, M4-M, M4-B, M12-S, M12-M, M12-B	**15-Jan-2017**	**03-Feb-2017**	29-Jan-2017	×	**03-Feb-2017**	29-Jan-2017	×
Amber VOC Vial - Sulfuric Acid (EP080)							
M1-S, M1-B, M5-S, M5-B, M8-S, M8-B, M11-S, M11-SD, M11-M, M11-B, M2-S, M2-SD, M2-B, M46-S, M46-M, M46-B, M45-S, M45-B, Trip Blank, M7-S, M7-B	**16-Jan-2017**	**03-Feb-2017**	30-Jan-2017	×	**03-Feb-2017**	30-Jan-2017	×
Amber VOC Vial - Sulfuric Acid (EP080)							
M25-S, M25-M, M25-B	**23-Jan-2017**	**03-Feb-2017**	06-Feb-2017	✓	**03-Feb-2017**	06-Feb-2017	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
M31-S, M31-M, M31-B, M37-S, M37-M, M37-B	**24-Jan-2017**	**03-Feb-2017**	07-Feb-2017	✓	**03-Feb-2017**	07-Feb-2017	✓
Amber VOC Vial - Sulfuric Acid (EP080)							

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
EP080/071: Total Petroleum Hydrocarbons - Continued							
M43-S, M43-M, M43-B, M13-S, M13-M, M13-B, M23-S, M23-B	**25-Jan-2017**	**03-Feb-2017**	08-Feb-2017	✓	**03-Feb-2017**	08-Feb-2017	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
M22-S, M22-B, M24-S, M24-M, M24-B, M15-S, M15-M, M15-B, M16-S, M16-M, M16-B, M17-S, M17-SD, M17-B, M19-S, M19-SD, M19-B, M20-S, M20-SD, M20-B, M21-S, M21-SD, M21-B	**26-Jan-2017**	**03-Feb-2017**	09-Feb-2017	✓	**03-Feb-2017**	09-Feb-2017	✓
Clear Plastic Bottle - Natural (EP071)							
M45-S	**16-Jan-2017**	**03-Feb-2017**	23-Jan-2017	×	**06-Feb-2017**	15-Mar-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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
M6-S, M6-B, M3-S, M3-M, M3-B, M9-S, M9-M, M9-B, M10-S, M10-B, M4-S, M4-M, M4-B, M12-S, M12-M, M12-B	**15-Jan-2017**	**03-Feb-2017**	22-Jan-2017	×	**06-Feb-2017**	15-Mar-2017	✓
Amber Glass Bottle - Unpreserved (EP071)							
M1-S, M1-B, M5-S, M5-B, M8-S, M8-B, M11-S, M11-SD, M11-M, M11-B, M2-S, M2-SD, M2-B, M46-S, M46-M, M46-B, M45-B, M7-S, M7-B	**16-Jan-2017**	**03-Feb-2017**	23-Jan-2017	×	**06-Feb-2017**	15-Mar-2017	✓
Amber Glass Bottle - Unpreserved (EP071)							
M25-S, M25-M, M25-B	**23-Jan-2017**	**03-Feb-2017**	30-Jan-2017	×	**06-Feb-2017**	15-Mar-2017	✓
Amber Glass Bottle - Unpreserved (EP071)							
M31-S, M31-M, M31-B, M37-S, M37-M, M37-B	**24-Jan-2017**	**03-Feb-2017**	31-Jan-2017	×	**06-Feb-2017**	15-Mar-2017	✓
Amber Glass Bottle - Unpreserved (EP071)							
M43-S, M43-M, M43-B, M13-S, M13-M, M13-B, M23-S, M23-B	**25-Jan-2017**	**03-Feb-2017**	01-Feb-2017	×	**06-Feb-2017**	15-Mar-2017	✓
Amber Glass Bottle - Unpreserved (EP071)							

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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
M22-S,	M22-B,	**26-Jan-2017**	**03-Feb-2017**	02-Feb-2017	×	**06-Feb-2017**	15-Mar-2017	✓
M24-S,	M24-M,							
M24-B,	M15-S,							
M15-M,	M15-B,							
M16-S,	M16-M,							
M16-B,	M17-S,							
M17-SD,	M17-B,							
M19-S,	M19-SD,							
M19-B,	M20-S,							
M20-SD,	M20-B,							
M21-S,	M21-SD,							
M21-B								
Amber VOC Vial - Sulfuric Acid (EP080)								
M6-S,	M6-B,	**15-Jan-2017**	**03-Feb-2017**	29-Jan-2017	×	**03-Feb-2017**	29-Jan-2017	×
M3-S,	M3-M,							
M3-B,	M9-S,							
M9-M,	M9-B,							
M10-S,	M10-B,							
M4-S,	M4-M,							
M4-B,	M12-S,							
M12-M,	M12-B							
Amber VOC Vial - Sulfuric Acid (EP080)								
M1-S,	M1-B,	**16-Jan-2017**	**03-Feb-2017**	30-Jan-2017	×	**03-Feb-2017**	30-Jan-2017	×
M5-S,	M5-B,							
M8-S,	M8-B,							
M11-S,	M11-SD,							
M11-M,	M11-B,							
M2-S,	M2-SD,							
M2-B,	M46-S,							
M46-M,	M46-B,							
M45-S,	M45-B,							
Trip Blank,	M7-S,							
M7-B								
Amber VOC Vial - Sulfuric Acid (EP080)								
M25-S,	M25-M,	**23-Jan-2017**	**03-Feb-2017**	06-Feb-2017	✓	**03-Feb-2017**	06-Feb-2017	✓
M25-B								
Amber VOC Vial - Sulfuric Acid (EP080)								
M31-S,	M31-M,	**24-Jan-2017**	**03-Feb-2017**	07-Feb-2017	✓	**03-Feb-2017**	07-Feb-2017	✓
M31-B,	M37-S,							
M37-M,	M37-B							
Amber VOC Vial - Sulfuric Acid (EP080)								

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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued							
M43-S, M43-M, M43-B, M13-S, M13-M, M13-B, M23-S, M23-B	**25-Jan-2017**	**03-Feb-2017**	08-Feb-2017	✓	**03-Feb-2017**	08-Feb-2017	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
M22-S, M22-B, M24-S, M24-M, M24-B, M15-S, M15-M, M15-B, M16-S, M16-M, M16-B, M17-S, M17-SD, M17-B, M19-S, M19-SD, M19-B, M20-S, M20-SD, M20-B, M21-S, M21-SD, M21-B	**26-Jan-2017**	**03-Feb-2017**	09-Feb-2017	✓	**03-Feb-2017**	09-Feb-2017	✓
Clear Plastic Bottle - Natural (EP071)							
M45-S	**16-Jan-2017**	**03-Feb-2017**	23-Jan-2017	×	**06-Feb-2017**	15-Mar-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
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
M6-S, M6-B, M3-S, M3-M, M3-B, M9-S, M9-M, M9-B, M10-S, M10-B, M4-S, M4-M, M4-B, M12-S, M12-M, M12-B	**15-Jan-2017**	**03-Feb-2017**	29-Jan-2017	×	**03-Feb-2017**	29-Jan-2017	×
Amber VOC Vial - Sulfuric Acid (EP080)							
M1-S, M1-B, M5-S, M5-B, M8-S, M8-B, M11-S, M11-SD, M11-M, M11-B, M2-S, M2-SD, M2-B, M46-S, M46-M, M46-B, M45-S, M45-B, Trip Blank, M7-S, M7-B	**16-Jan-2017**	**03-Feb-2017**	30-Jan-2017	×	**03-Feb-2017**	30-Jan-2017	×
Amber VOC Vial - Sulfuric Acid (EP080)							
M25-S, M25-M, M25-B	**23-Jan-2017**	**03-Feb-2017**	06-Feb-2017	✓	**03-Feb-2017**	06-Feb-2017	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
M31-S, M31-M, M31-B, M37-S, M37-M, M37-B	**24-Jan-2017**	**03-Feb-2017**	07-Feb-2017	✓	**03-Feb-2017**	07-Feb-2017	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
M43-S, M43-M, M43-B, M13-S, M13-M, M13-B, M23-S, M23-B	**25-Jan-2017**	**03-Feb-2017**	08-Feb-2017	✓	**03-Feb-2017**	08-Feb-2017	✓
Amber VOC Vial - Sulfuric Acid (EP080)							

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
EP080: BTEXN - Continued							
M22-S, M22-B, M24-S, M24-M, M24-B, M15-S, M15-M, M15-B, M16-S, M16-M, M16-B, M17-S, M17-SD, M17-B, M19-S, M19-SD, M19-B, M20-S, M20-SD, M20-B, M21-S, M21-SD, M21-B	**26-Jan-2017**	**03-Feb-2017**	09-Feb-2017	✓	**03-Feb-2017**	09-Feb-2017	✓

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		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Ammonia as N by Discrete analyser	EK055G	9	76	**11.84**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	8	76	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Saline Water -Suite A by ORC-ICPMS	EG093A-F	8	77	**10.39**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Saline Water -Suite B by ORC-ICPMS	EG093B-F	8	76	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	9	76	**11.84**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	9	76	**11.84**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	76	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	9	76	**11.84**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids	EA025	9	76	**11.84**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	9	90	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	8	76	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Saline Water Suite A by ORC-ICPMS	EG093A-T	8	78	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Saline Water -Suite B by ORC-ICPMS	EG093B-T	8	76	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	9	90	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	79	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	8	77	**10.39**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Ammonia as N by Discrete analyser	EK055G	6	76	**7.89**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Chlorophyll a and Pheophytin a	EP008	4	76	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	4	76	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Saline Water -Suite A by ORC-ICPMS	EG093A-F	4	77	**5.19**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Saline Water -Suite B by ORC-ICPMS	EG093B-F	4	76	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	6	76	**7.89**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	6	76	**7.89**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	4	76	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	6	76	**7.89**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids	EA025	10	76	**13.16**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	5	90	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	76	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Saline Water Suite A by ORC-ICPMS	EG093A-T	4	78	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Saline Water -Suite B by ORC-ICPMS	EG093B-T	4	76	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	5	90	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	4	79	**5.06**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	77	**5.19**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	6	76	**7.89**	**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		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Chlorophyll a and Pheophytin a	EP008	4	76	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	4	76	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Saline Water -Suite A by ORC-ICPMS	EG093A-F	4	77	**5.19**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Saline Water -Suite B by ORC-ICPMS	EG093B-F	4	76	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	6	76	**7.89**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	6	76	**7.89**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	4	76	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	6	76	**7.89**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspended Solids	EA025	5	76	**6.58**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	5	90	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	76	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Saline Water Suite A by ORC-ICPMS	EG093A-T	4	78	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Saline Water -Suite B by ORC-ICPMS	EG093B-T	4	76	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	5	90	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	4	79	**5.06**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	77	**5.19**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	6	76	**7.89**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	4	76	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals in Saline Water -Suite A by ORC-ICPMS	EG093A-F	4	77	**5.19**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	6	76	**7.89**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	6	76	**7.89**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	76	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Reactive Phosphorus as P-By Discrete Analyser	EK071G	6	76	**7.89**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	5	90	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	76	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals in Saline Water Suite A by ORC-ICPMS	EG093A-T	4	78	**5.13**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	5	90	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	79	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	77	**5.19**	**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
Suspended Solids	EA025	WATER	In house: Referenced to APHA 2540D. A gravimetric procedure employed to determine the amount of `non-filterable` residue in a aqueous sample. The prescribed GFC (1.2um) filter is rinsed with deionised water, oven dried and weighed prior to analysis. A well-mixed sample is filtered through a glass fibre filter (1.2um). The residue on the filter paper is dried at 104+/-2C . This method is compliant with NEPM (2013) Schedule B(3)
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(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 SnCl2 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 (SnCl2)(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 SnCl2 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)
Dissolved Metals in Saline Water -Suite A by ORC-ICPMS	EG093A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020 Samples are 0.45µm filtered prior to analysis. The ORC-ICPMS technique removes interfering species through a series of chemical reactions prior to ion detection. Ions are passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to measurement by a discrete dynode ion detector. This method is compliant with NEPM (2013) Schedule B(3)
Total Metals in Saline Water Suite A by ORC-ICPMS	EG093A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020. The ORC-ICPMS technique removes interfering species through a series of chemical reactions prior to ion detection. Ions are passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to measurement by a discrete dynode ion detector. This method is compliant with NEPM (2013) Schedule B(3)
Dissolved Metals in Saline Water -Suite B by ORC-ICPMS	EG093B-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020 Samples are 0.45µm filtered prior to analysis. The ORC-ICPMS technique removes interfering species through a series of chemical reactions prior to ion detection. Ions are passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to measurement by a discrete dynode ion detector. This method is compliant with NEPM (2013) Schedule B(3)
Total Metals in Saline Water -Suite B by ORC-ICPMS	EG093B-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020. The ORC-ICPMS technique removes interfering species through a series of chemical reactions prior to ion detection. Ions are passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to measurement by a discrete dynode ion detector. 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)

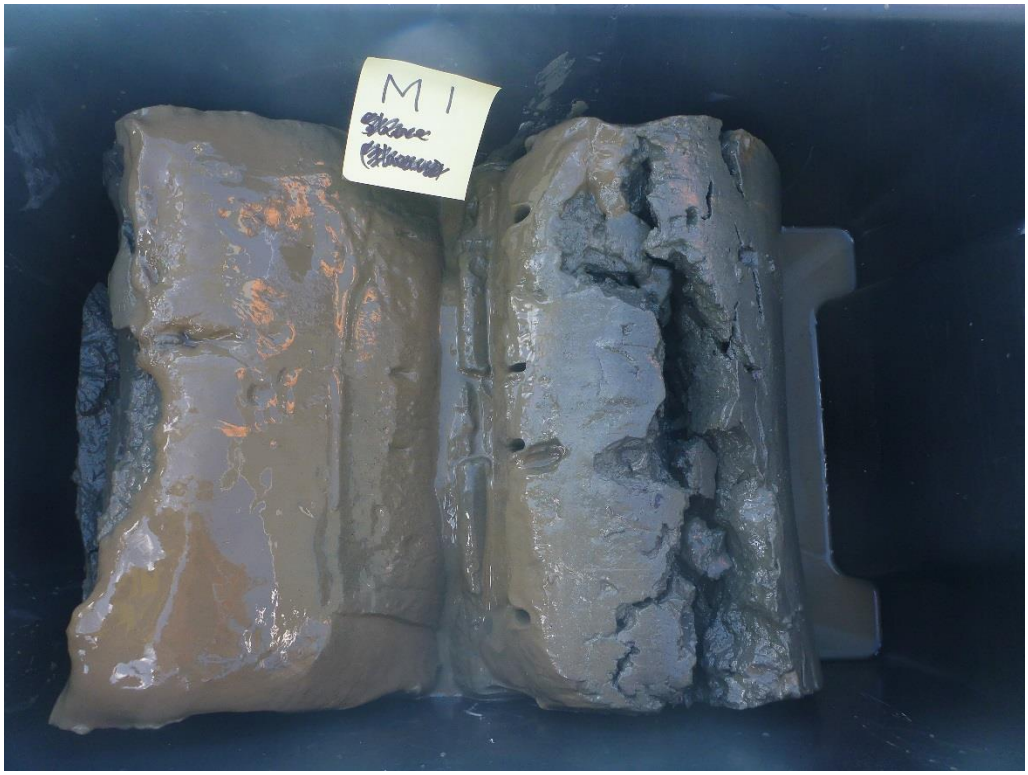
Analytical Methods	Method	Matrix	Method Descriptions
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO3- F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined seperately by direct colourimetry 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 (NOx) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO3- F. Combined oxidised Nitrogen (NO2+NO3) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM (2013) Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO3-. This method is compliant with NEPM (2013) Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al (1976), Zhang et al (2006). This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using 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 othophosphate 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)
Chlorophyll a and Pheophytin a	EP008	WATER	In house: Referenced to APHA 10200 H. The pigments are extracted into aqueous acetone. The optical density of the extract before and after acidification at both 664 nm and 665 nm is determined spectrometrically.
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)
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)
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)

Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM (2013) Schedule B(3)
Digestion for Total Recoverable Metals - ORC	EN25-ORC	WATER	In house: Referenced to USEPA SW846-3005. This is an Ultrapure Nitric acid digestion procedure used to prepare surface and ground water samples for analysis by ORC- ICPMS. This method is compliant with NEPM (2013) Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
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.

Appendix E Photographs of Sediment Samples

M1



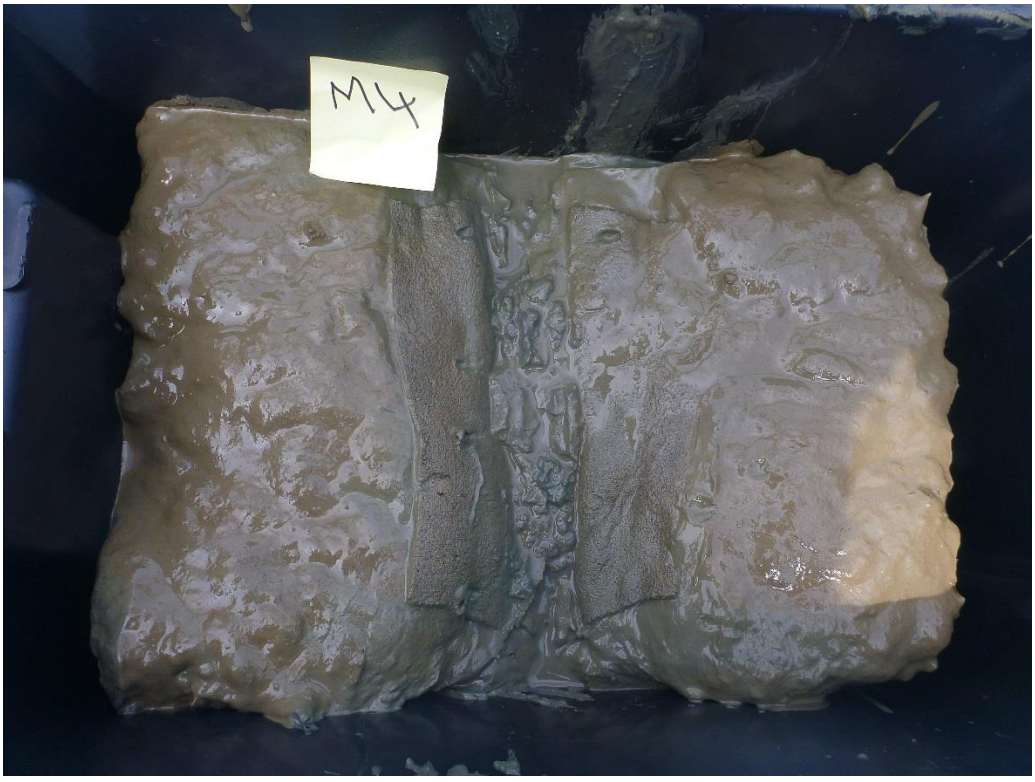
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M3



M4



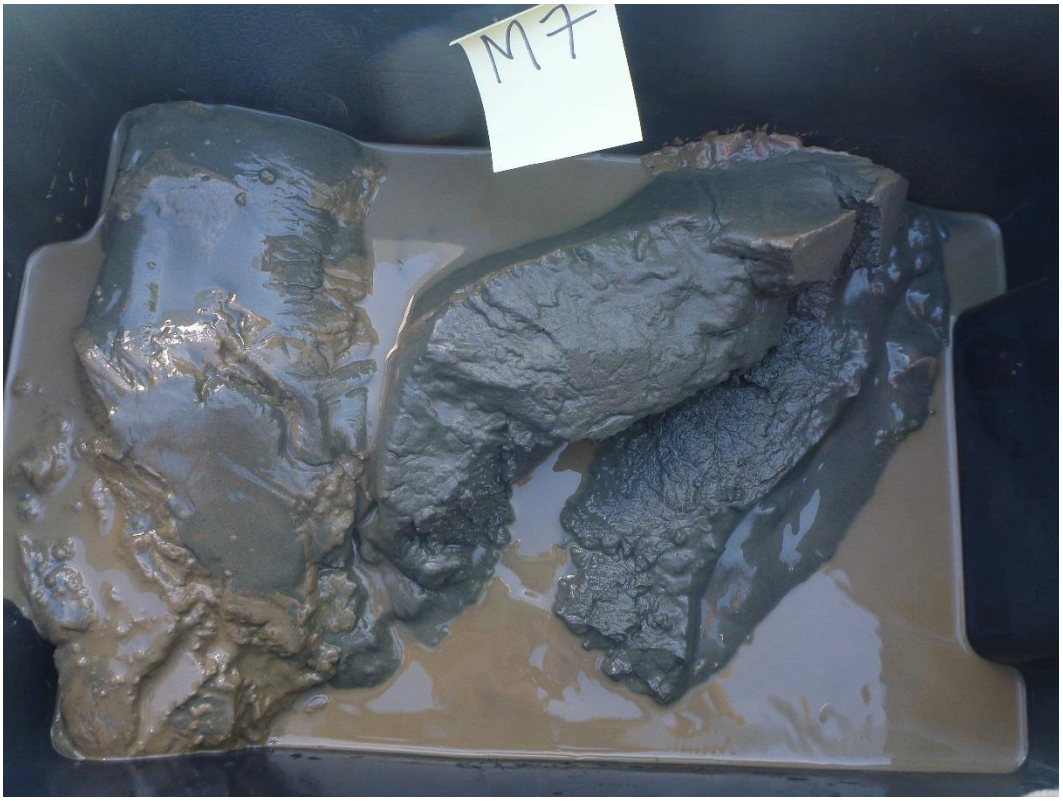
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M6



M7



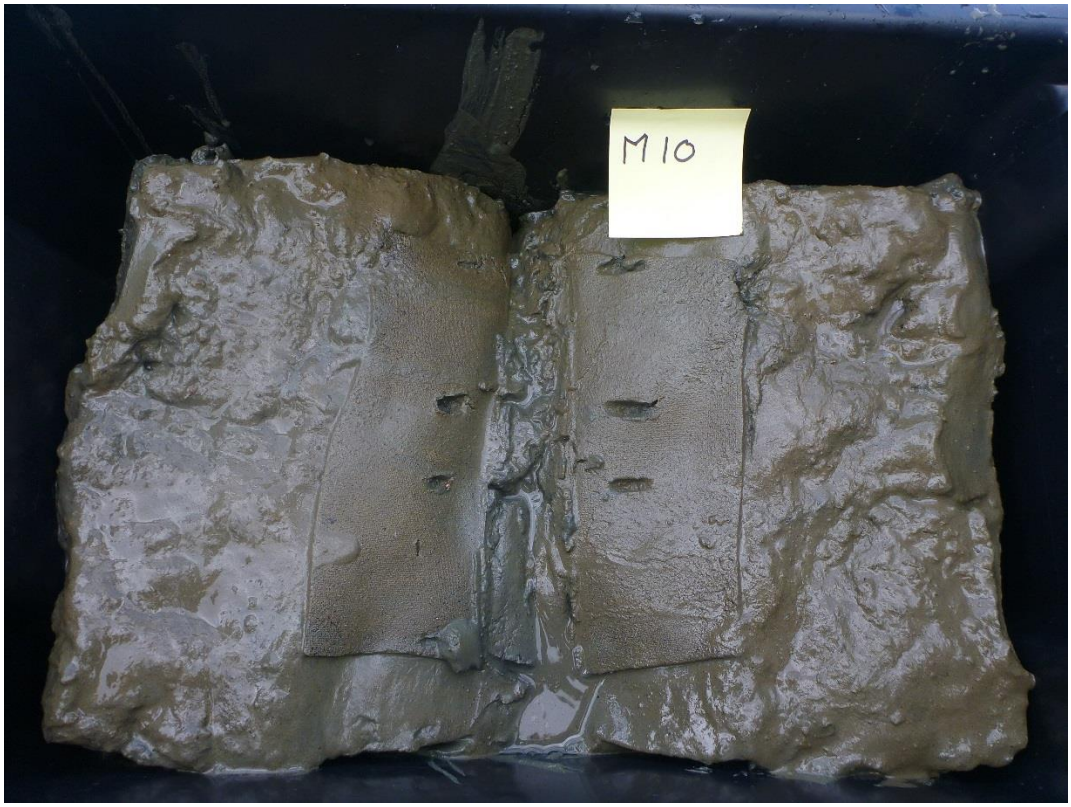
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M9



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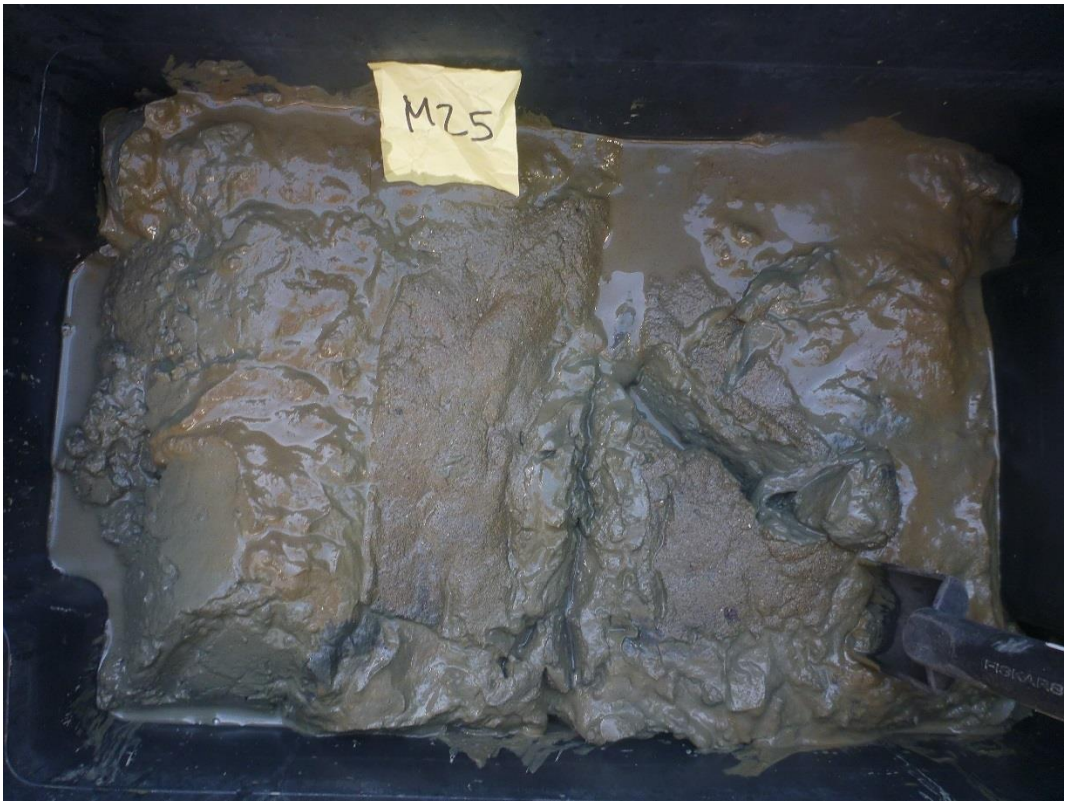
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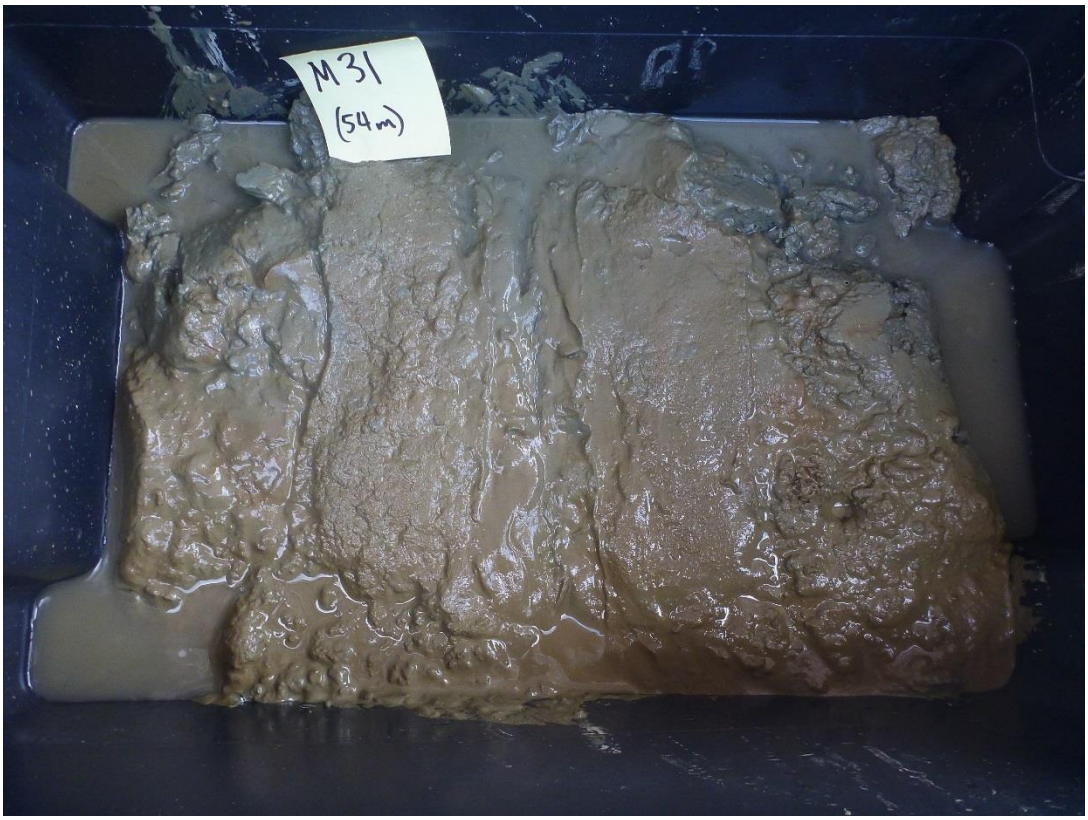
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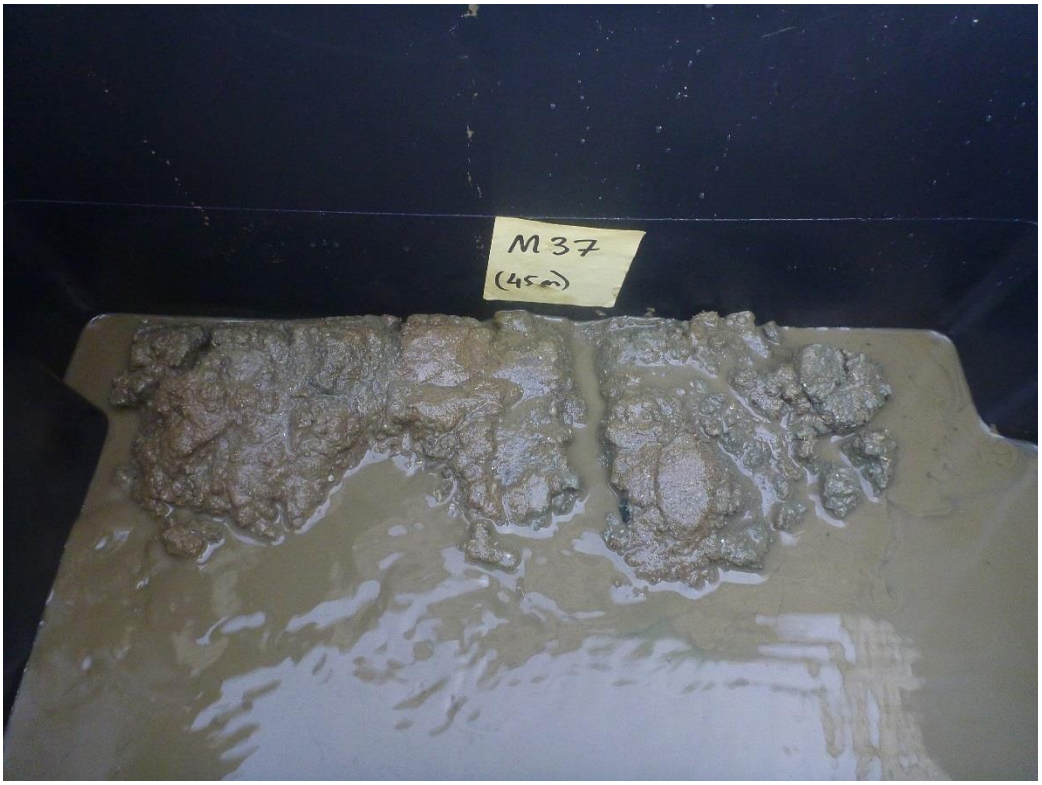
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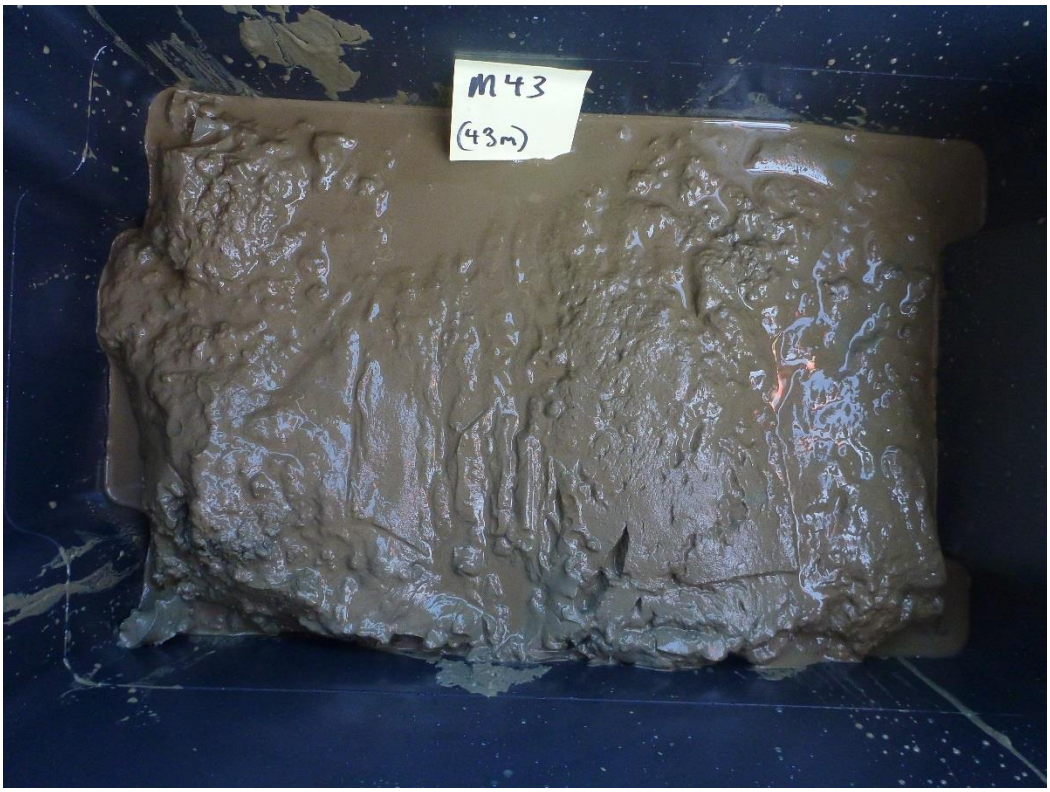
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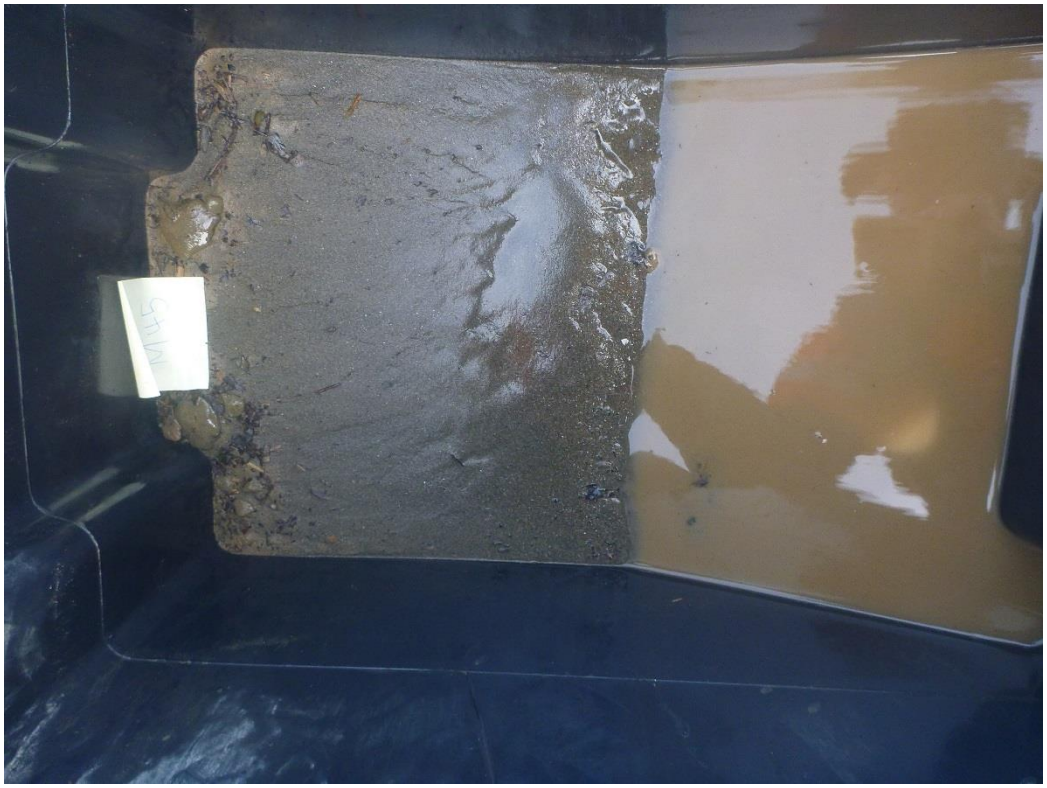
M37



M43



M45



M46





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