

Phase 2 Detailed Site Investigation

14 Aquatic Drive, Frenchs Forest NSW 2086

30 April 2025
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Phase 2 Detailed Site Investigation

14 Aquatic Drive, Frenchs Forest NSW 2086

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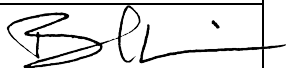
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Executive Summary

AECOM Australia Pty Ltd (AECOM) was engaged by Goodman Property Services (Australia) Pty Ltd (Goodman) to undertake a Phase 2 Detailed Site Investigation (DSI) at 14 Aquatic Drive, Frenchs Forest New South Wales (NSW) 2086 (herein referred to as 'the Site'). The Site location and layout are presented in **Figure F1** and **F2, Appendix A**.

This Phase 2 Detailed Site Investigation has been prepared by AECOM on behalf of Goodman to accompany a development application for self-storage units and warehouse and distribution centre uses at 14 Aquatic Drive, Frenchs Forest.

This site is located on the southern side of Warringah Road and within the broader Frenchs Forest Business Park. It currently hosts an existing four storey commercial building which is proposed for demolition under this application.

The proposed development comprises construction of a three-storey industrial building including:

- 153 self-storage units at ground floor;
- 72 warehouse units on Levels 1 and 2;
- 123 car parking spaces across all levels;
- outdoor breakout spaces for staff at ground floor and Level 2;
- shared lobby across all levels;
- landscaping; and
- associated infrastructure/servicing works.

Approval is sought for 24/7 operation of the proposed self-storage and warehouse and distribution units.

AECOM previously undertook a Phase 1 Preliminary Site Investigation (PSI) (AECOM, 2022) at the Site, which identified that soil and / or groundwater contamination could be present at the Site based on the presence of uncontrolled fill materials. It was therefore recommended that a DSI (this investigation) be undertaken to assess the potential extent of contamination present at the Site.

The overall objective is to evaluate the potential for contamination to be present at the Site, assess risk to identified potential receptors, determine the Site's suitability for the proposed commercial land use and whether a remediation action plan (RAP) or long-term environmental management plan (LTEMP) is required.

To achieve this objective, the scope of works comprised two tasks: a soil investigation and a groundwater investigation. The soil investigation included the drilling of 12 boreholes and 2 hand auger locations. The groundwater investigation included converting one of the soil bores into a groundwater monitoring well, utilising an existing monitoring well and development and sampling of the monitoring wells.

Fill materials (sandy clays with gravel and/or cobble inclusions) were encountered from surface to between 0.4 and 0.9 m bgl across majority of the Site. Where no fill was encountered, natural materials (medium plasticity clays) were encountered from surface to between 0.4 and 1.6 m bgl. Soils were underlain by sandstone bedrock (and subsequent refusal) between 1.4 and 3.0 m bgl. The deepest extent of the drilling investigation was 5.1 m bgl at BH14, which was met with refusal on bedrock. Subsurface materials were observed to be consistent across all soil investigation locations at the Site. No observations of contamination were noted during soil or groundwater investigations.

All contaminants of potential concern (CoPC) analysed from fill and natural soils were less than their respective adopted human health and ecological investigation level (IL). Preliminary waste classification of soils at the Site (including toxicity characteristic leaching procedure [TCLP] results), indicate that materials met the classification of general solid waste (GSW).

One groundwater monitoring well (MW02) was installed in the southern extent of the Site, as this location was the only one where groundwater was encountered before refusal on bedrock. An existing groundwater well (MW01) installed by PSM on 14 November 2022 was located within the central

portion of the Site. The groundwater analytical results returned concentrations of CoPCs less than the laboratory LOR and / or adopted human health ILs for groundwater identified in **Section 5.2**. Ecological ILs were exceeded in both wells for Copper and Zinc, however it is considered that this would not impact on ecological receptors in the area given the concentrations are likely attributable to background concentrations in the sandstone and urban environment because:

- there is little variance between the concentrations; and
- there are no confirmed sources in the soil results.

It is noted that the laboratory limits of reporting (LORs) of a number of polycyclic aromatic hydrocarbons (PAH), organochlorine pesticides (OCP) and organophosphate pesticides (OPP) were greater than adopted ecological IL. However, the likelihood of these CoPC actually being present at concentrations greater than the ecological IL is considered to be unlikely based on the results of the overall soil investigation and the risk to identified on- and off-site ecological receptors acceptably low.

As summarised in the updated Conceptual Site Model (CSM), the contamination risk to human health and ecological receptors at the Site is considered to be low, as there is no complete source-pathway-receptor linkage and soil and groundwater CoPC were below adopted IL criteria for human health and although above for groundwater ecological ILs, it is not considered to pose a risk to receptors based on absence of identified impact in the soil results and likelihood of concentrations representing background levels in the sandstone and urban environment.

Given that impacts have not been identified that pose a significant risk, a RAP or LTEMP is not considered required for future development of the Site.

The following is recommended:

- Proposed development activities are conducted under a Construction Environmental Management Plan (CEMP) incorporating an Unexpected Finds Protocol (UFP) and a Fill Importation Protocol (FIP) if significant importation of material is required. The CEMP should identify environmental controls required including but not limited to noise, erosion, dust, waste, unexpected finds including potentially contaminated fill which may contain asbestos or heavy metals. This document will provide the information and management required should unexpected contamination be encountered and so that potentially contaminated material is not imported and placed at the Site during construction activities.

1.0 Introduction

AECOM Australia Pty Ltd (AECOM) was engaged by Goodman Property Services (Australia) Pty Ltd (Goodman) to undertake a Phase 2 Detailed Site Investigation (DSI) at 14 Aquatic Drive, Frenchs Forest New South Wales (NSW) 2086 (herein referred to as 'the Site'). The Site location and layout are presented in **Figure F1** and **F2, Appendix A**.

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1.1 Objectives

The objectives of the DSI are to:

- Address the data gap identified in the Phase 1 DSI related to potential uncontrolled fill at the Site
- Assess potential exposure risks to identified receptors
- Provide a preliminary waste classification of surplus fill and / or natural soils for landfill disposal, if required
- Determine whether a remedial action plan (RAP) is required for development activities
- Assess if a long-term environmental management plan (LTEMP) is required after the development

1.2 Scope of Work

To achieve these objectives, the following scope of work was undertaken:

- Task 1: Soil investigation
 - Drilling of 12 boreholes (BH03-BH14) with drill rig with the intention to convert boreholes into groundwater monitoring wells where groundwater was encountered
 - Hand auger of two locations (HA01 and HA02) that were inaccessible for the drill rig

- Task 2: Groundwater investigation
 - Installation of one groundwater monitoring well
 - Groundwater monitoring event (GME) undertaken at existing monitoring well (MW01) and newly installed monitoring well (MW02)
- Preparation of this DSI report.

1.3 Relevant Policy and Guidance Documents

AECOM has prepared this DSI with reference to the following guidelines:

- *National Environment Protection Assessment of Site Contamination) Measure 1999 as amended (2013) (the ASC NEPM)*
- NSW EPA (2014). *Waste Classification Guidelines – Part 1: Classifying Waste*. November 2014
- NSW EPA (2017). *Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme (3rd Edition)*. October 2017
- NSW EPA (2020). *Consultants reporting on contaminated land, contaminated land guidelines*. April, updated 5 May 2020
- NSW EPA (2022) *Sampling design part 1 – application*. Contaminated Land Guidelines, August 2022
- NSW EPA (2022) *Sampling design part 2 – interpretation*. Contaminated Land Guidelines, August 2022
- NSW DPE (2021) *State Environmental Planning Policy (SEPP) (Resilience and Hazards) 2021*

2.0 Site Identification and Details

2.1 Site Description

Site identification details are presented in **Table 1**.

Table 1 Site Identification Details

Item	Description
Site name	Forestridge Business Park
Site address	14 Aquatic Drive, Frenchs Forest NSW 2086
Proposed Site layout	Refer to supplied architectural site plan, Appendix A
Parcel / Lot Number	Lot 102 in Deposited Plan (DP) 1211755
Ownership details	Goodman Property Services (Aust) Pty Ltd
Site area	Approximately 15,460 m ²
Site features	• The site is mostly paved and consists of one large office/warehouse building surrounded by carparks to the north, south and west. The entrance is from a driveway connecting to Aquatic Drive. Warringah Road is north of the site. • A garden bed and small green space is located in the northeast corner of the site. • Directly adjacent to the east is Innovation Park carpark and building. • The site is located on a slope which falls to the south, south-west towards Aquatic Drive and the reserve beyond.
Current land use and zoning	• The site is currently combined office and warehouse. The zoning is SP4 Enterprise zone as noted in the Warringah Local Environmental Plan (LEP) 2011
Local Government Area	• Northern Beaches Council
Surrounding land use	• North: Warringah Road followed by commercial office space • East: Innovation Park commercial and retail space • South: Aquatic Drive followed by sporting fields and Manly Creek • West: Commercial and educational facilities
Ecological Receptors	• Manly Creek is located approximately 740 m to the south of the site

2.2 Geology and Soil

The following information is presented in the AECOM Phase 1 PSI (AECOM, 2022).

The site lies at an elevation ranging from approximately 138 – 151 m Australian Height Datum (AHD), with a slight gradient towards the south and south-west.

The soil landscape is residual soils consisting of moderately deep, hard setting yellow podzolic soils (LIR, 2022). The geology at the Site consists of middle Triassic age Hawkesbury Sandstone. Additionally, LIR (2022) indicates that acid sulfate soils (ASS) risk is extremely low probability of occurrence.

2.3 Hydrology and Hydrogeology

The following is noted regarding hydrology and hydrogeology (AECOM, 2022):

- The closest water body is Manly Creek located approximately 740 m south of the Site.

- There are 43 registered bores within a 2 km radius of the Site (LIR, 2022). The three nearest registered bores are 180 m (west of the site), 242 m (north-east) and 292 m (north-east) away from the Site, with listed purpose being water supply, manufacturing and industry. Groundwater depths based on the borelog data of the closest wells indicates groundwater is not present as the SWL is listed as null. The closest bore with a recorded water level is 587 m north-east of the Site with groundwater listed at 16.4 m deep.
- LIR (2022) indicates that the aquifer beneath the Site is porous, extensive aquifers of low to moderate productivity.

2.4 Previous Reports

AECOM completed a Phase 1 PSI (AECOM, 2022) to evaluate the potential for soil and/or groundwater contamination to be present at the Site and to support the development application (DA) submission.

Based on the assessment of historical review of ownership, photos and business activities, no specific areas of concern were identified that may indicate potential contamination. The only data gap identified was the extent of uncontrolled fill that may be present and potentially contaminated. While it was considered that widespread contamination was unlikely to be an issue given there were no overt observations of contamination during the site inspection, uncontrolled fill and related potential contamination was a data gap.

The Preliminary CSM outlined in the Phase1 PSI detailed the following:

The likely source of contamination encountered would be the nature of the fill that was used during construction of the current building. Uncontrolled fill may contain contaminants of potential concern such as the following:

- Asbestos
- Heavy metals (including arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc)
- Total recoverable hydrocarbons (TRH)
- Benzene, toluene, ethylbenzene, xylenes and naphthalene (BTEXN)
- Polycyclic aromatic hydrocarbons (PAH)
- Phenols
- Organochlorine pesticides (OCP) and organophosphate pesticides (OPP)

Based on available information with regards to the current and proposed use of the Site and the current land uses of the surrounding area, the following human receptors have been identified:

- On-site and off-site commercial workers
- On-site intrusive (i.e. ground excavation) maintenance and construction workers (e.g. demolition contractors);

The following human exposure pathways may apply:

- i. Dermal contact and incidental ingestion of soil;
- ii. Inhalation of soil derived dust in indoor and/or outdoor air;
- iii. Dermal contact and incidental ingestion of groundwater/surface water;
- iv. Inhalation of soil and groundwater vapours in indoor air
- v. Inhalation of soil and groundwater/surface water vapours in outdoor air
- vi. Inhalation of soil and groundwater vapours within a trench.

Based on the physical and chemical parameters of the contaminants of potential concern (CoPC) identified, the exposure pathways that may be relevant to each CoPC are presented in **Table 2**.

Table 2 CoPC and Relevant Pathways

CoPC	Relevant Pathways
Metals and OCP/OPP	i, ii, iii
Petroleum hydrocarbons	i, ii, iii, iv, v, vi
Asbestos	ii

The following off-site potential ecological receptor is present within a 1 km radius:

- Manly Creek located approximately 740 m to the south of the Site

Based on the assessment of historical review of ownership, photos and business activities of the Phase 1, the only data gap identified was the potential extent of uncontrolled fill that may be contaminated.

3.0 Data Quality Objectives

The amended National Environmental Protection Measure (NEPM, Schedule B [2]) Guideline on Site Characterisation (2013) specifies that the nature and quality of the data produced in an investigation will be determined by the Data Quality Objectives (DQOs). As referenced by the NEPM, the DQO process is detailed in the United States Environmental Protection Agency (US EPA) *Guidance on Systematic Planning Using the Data Quality Objectives Process (EPA QA/G-4: EPA/240/B-06/001)*, February 2006.

The US EPA defines the process as ‘a strategic planning approach based on the Scientific Method that is used to prepare for a data collection activity. It provides a systematic procedure for defining the criteria that a data collection design should satisfy, including when to collect samples, where to collect samples, the tolerable level of decision errors for the study, and how many samples to collect’.

The process of establishing appropriate DQOs is defined according to the following seven steps:

Table 3 The seven steps in defining DQOs

Step	Data Quality Objective Step
1	State the problem – Define the problem that necessitates the study; identify the planning team, examine budget, schedule.
2	Identify the goal of the study – State how environmental data will be used in meeting objectives and solving the problem, identify study questions, define alternative outcomes.
3	Identify information inputs – Identify data and information needed to answer study questions.
4	Define the boundaries of the study – Specify the target population and characteristics of interest, define spatial and temporal limits, scale of inference.
5	Develop the analytic approach – Define the parameter of interest, specify the type of inference, and develop the logic for drawing conclusions from findings.
6	Specify performance or acceptance criteria – Develop performance criteria for new data being collected or acceptable criteria for existing data being considered for use.
7	Develop the plan for obtaining data – Select the resource-effective sampling and analysis plan that meets the performance criteria.

The approach adopted relative to the seven steps presented above is discussed below.

3.1 Step 1 – State the Problem

Goodman is developing the Site and require an assessment of contamination. A previously completed Phase 1 PSI (AECOM, 2022) indicated the potential for soil contamination as a result of potential uncontrolled fill being present on the Site.

The soil and groundwater data collected from this investigation will provide a more detailed understanding of the extent of potential contamination within the sampling media of concern. The data will inform the extent that remediation may be required to mitigate potential contamination exposure risks, if present.

3.2 Step 2 – Identify the Goal of the Study

The decision / goal represents the key steps / issues that need to be reviewed / considered in order to resolve the problem identified in Step 1.

The primary questions to be addressed include the following:

- What is the nature, extent, concentration, and distribution of contaminants in the soil and groundwater at the Site?
- Do the results indicate a potential risk to commercial / industrial land use during and following development?
- Will the data collected be sufficient to inform the need for remediation and what form it might take?

3.3 Step 3 – Identify Information Inputs

To allow assessment of the data against the study goals listed in Step 2, the following will be considered:

- Zoning and current land use of the Site and surrounding properties
- Distance to potential human health and environmental receptors
- Field results and observations
- Laboratory results
- Assessment of the suitability of the data through the assessment of data quality indicators (DQIs), namely precision, accuracy, representativeness, completeness and comparability (PARCC) parameters; and
- Historical reports, including the Phase 1 PSI (AECOM, 2022), and other information sources available to AECOM as referred to throughout this report

3.4 Step 4 – Define the Boundaries of the Study

The spatial boundaries are:

- **Lateral:** The boundaries of the Site are Lot 102 DP 1211755, and are outlined on **Figure F1, Appendix A**
- **Vertical:** Soil bores advanced to a maximum depth of 5.1 m below ground level (m bgl)
- **Temporal:** The time frame of the field investigation was 11 January 2023 to 19 January 2023

3.5 Step 5 – Develop an Analytical Approach

The decision rules can be defined as:

- If the laboratory quality assurance/quality control data are within the acceptable ranges, the data will be considered suitable for use; and
- If the CoPC are reported above the laboratory limit of reporting (LOR) in one or more samples, then it will be considered whether further assessment or management measures are required.
- The decision on the acceptance of the analytical data will be made on the basis of the DQIs as follows:
 - **Precision:** A quantitative measure of the variability (or reproducibility) of data;
 - **Accuracy:** A quantitative measure of the closeness of reported data to the “true” value;
 - **Representativeness:** The confidence (expressed qualitatively) that data are representative of each media sampled;
 - **Completeness:** A measure of the amount of useable data from a data collection activity; and
 - **Comparability:** The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event.

3.5.1 Precision

Suitable criteria and/or performance indicators for assessment of precision include:

- Performance of intra-laboratory duplicate sample sets through calculation of relative percent differences (RPDs)
- Performance of inter-laboratory duplicate sample sets through calculation of RPDs
- The RPDs will be assessed as acceptable if less than or equal to 30% as per the NEPM Schedule B3. Where the results show greater than 30% difference, a review of the cause will be conducted (NEPM, 2013). It is noted that RPDs that exceed this range may be considered acceptable where:

- Results are less than 10 times the LOR (no limit)
- Results are less than 20 times the LOR and the RPD is less than 50%
- Heterogeneous materials are encountered

3.5.2 Accuracy (Bias)

The closeness of the reported data to the “true” value is assessed through review of performance of:

- Method blanks, which are analysed for the analytes requested for in the primary samples
- Matrix spikes and surrogate recoveries
- Laboratory control samples

3.5.3 Representativeness

To ensure the data produced by the laboratory are representative of conditions encountered in the field, the following steps were taken by the laboratory, and subsequently reviewed by AECOM:

- Blank samples were run in parallel with field samples to confirm there are no unacceptable instances of laboratory cross-contamination
- RPD values for field and laboratory duplicates were reviewed to provide an indication that the samples are generally homogeneous, with no unacceptable instances of significant sample matrix heterogeneity
- The appropriateness of collection methodologies, handling, storage and preservation techniques were assessed to ensure/confirm there was minimal opportunity for sample interference or degradation (e.g. volatile loss during transport due to incorrect preservation / transport methods)

3.5.4 Completeness

In validating the degree of completeness of the analytical data sets acquired during the program, the following is considered:

- Whether standard operating procedures (SOPs) for sampling protocols have been adhered to
- Copies of all Chain of Custody (CoC) documentation were reviewed and presented

It can therefore be considered whether the proportion of “useable data” generated in the data collection activities is sufficient for the purposes of assessing the problem as stated in Step 1 above.

3.5.5 Comparability

Given that assessment data can comprise several data sets from separate sampling events (for example, future GMEs), issues of comparability between data sets are reduced through adherence to SOPs and regulator endorsed or made guidelines and standards on each data gathering activity.

In addition, the data were collected by experienced AECOM field staff, and National Association of Testing Authorities (NATA) accredited laboratories were employed in all laboratory programs for soil and water analysis.

3.6 Step 6 – Specify Performance or Acceptance Criteria

Specific limits for this project are in accordance with the appropriate guidance made or endorsed by state and national regulations, appropriate indicators of data quality, and standard procedures for field sampling and handling.

This step also examines the certainty of conclusive statements based on the available new site data collected. This should include the following points to quantify tolerable limits:

- A decision can be made based on a certainty assumption of 95% confidence in any given data set. A limit on the decision error will be 5% that a conclusive statement may be a false positive or false negative
- A decision error in the context of the decision rule presented above would lead to either underestimation or overestimation of the risk level associated with a particular sampling area. Decision errors may include:

- Sampling errors may occur when the sampling program does not adequately detect the variability of a contaminant from point to point across the Site. To address this, minimum numbers of samples proposed to be collected from each media are planned and this was adhered to with some minor deviations, in this investigation.
- Limitations in ability to acquire useful and representative information from the data collected. The data are proposed to be collected from multiple locations and sample media. For example,
 - Inability to collect surface water and sediment samples at the same location
- Measurement errors can occur during sample collection, handling, preparation, analysis and data reduction. To address this, the following measures were implemented:
 - Field staff followed SOPs when undertaking sampling, including decontamination of tools, removal of adhered sediment to avoid false positives in results, and use of appropriate sample containers and preservation methods
 - Laboratories followed a standard procedure when preparing samples for analysis and undertaking analysis
 - Laboratories reported quality assurance/ quality control data for comparison with the DQIs established for the project

Should the performance or acceptance criteria not be met, AECOM will immediately notify Goodman and discuss the next steps to achieve the objectives of this investigation.

3.7 Step 7 – Optimise the design for obtaining data

The methodology presented in this investigation is designed to meet the objectives described in **Section 1.1** and to achieve the nominated DQOs. Optimisation of the data collection process was achieved by:

- Working closely with the analytical laboratories and sampling equipment suppliers to ensure that appropriate procedures and processes are developed and implemented prior to and during the field work, to ensure that sample handling, and transport to and processing by the analytical laboratories is appropriate
- Conducting sampling according to set SOPs for the type of sampling being conducted (e.g. soil and groundwater sampling)

4.0 Assessment Methodology

4.1 Soil Investigation Methodology

The soil sampling methodology that was employed during the investigation is summarised in **Table 4** below.

Table 4 Soil sampling methodology

Activity/item	Description
Service location	The soil investigation locations were cleared of services prior to commencement of intrusive works by a licensed service locator and the Dial-before-you-dig (DBYD) drawings were reviewed.
Drilling method (borehole and monitoring well)	Hand auguring to approximately 1.5 m bgl. Solid stem augers were then used to maximum depth of 5.1 m bgl or refusal, whichever was encountered first.
Soil logging	Soil logging was undertaken in general accordance with the Unified Soil Classification System, including the following information (e.g. soil/rock type, colour, grain size, inclusions, moisture conditions, staining and odour etc.).
Soil screening	Soil samples were placed in zip-lock type plastic bags and the vapour headspace screened in the field for volatile organic compounds (VOC) using a calibrated photo-ionisation detector (PID) equipped with a 10.6 eV lamp.
Soil sampling	Samples were collected at surface (approximately 0.2-0.3 m, within fill materials and at changes in the soil profile. Up to two samples per location were scheduled for laboratory analysis of CoPCs, targeting fill and natural materials across the Site.
Sample preservation	All soil samples for chemical analysis were placed directly in laboratory supplied glass jars. All jars were filled to minimise the amount of headspace. Samples were not mixed or homogenised during collection, to minimise the loss of volatiles. Samples requiring asbestos analysis for waste classification purposes were placed into laboratory supplied plastic zip-lock type bags.
Quality control	The following samples were submitted for quality control analysis purposes: • intra-laboratory duplicate sample (1 in 20 primary samples) • inter-laboratory sample (1 in 20 primary samples) • rinsate blank (1 per day) • trip blank/spike (TRH and BTEXN only, 1 each per batch)
Decontamination procedures	Reusable equipment (e.g., sampling trowel) was decontaminated prior to being used with Liquinox™ and de-ionised water. Soil samples were collected using single use, disposable nitrile gloves.
Disposal of soil cuttings	All waste generated as part of the intrusive works was backfilled into their corresponding boreholes. Where excess waste was generated (i.e. boreholes for monitoring well installation), waste was placed into sealed drums and classified as per the NSW EPA (2014) Waste Classification Guidelines to be disposed off-site.

4.2 Groundwater Investigation Methodology

4.2.1 Monitoring Well Installation

The groundwater monitoring well locations are presented on **Figure F2 (Appendix A)**. The monitoring well installation, monitoring and sampling methodologies are summarised below. One groundwater monitoring well (MW02) was installed by AECOM during the DSI. The borelog and well installation diagram is located in **Appendix C**.

- The groundwater monitoring well was installed in accordance with the *Minimum Construction Requirements for Water Bores in Australia, Fourth Edition* (NUDLC, 2020).
- The groundwater monitoring well was installed to intercept groundwater within natural clays. The decision on the well installation depth was based on observations of contamination, presence of fill, depth of groundwater, presence of confining layers and variation in natural lithology.
- Solid stem augers were used when stiff clays were encountered.
- The groundwater monitoring well was constructed using 50 millimetres (mm) outside diameter machine threaded and slotted (0.5 mm) Class 18 uPVC casing and blank riser. Prior to installation, the total depth of the borehole was measured with a weighted tape.
- The well casing was lowered into the open borehole and was screened across the groundwater table. Graded filter sand was added from the base of the screened interval to approximately 0.5 m above the top of the screened interval.
- A 0.5 m hydrated bentonite seal was added above the filter sand, followed by a grout mixture (bentonite / cement) to the surface. The well was finished flush with a steel gatic cover.

4.2.2 Groundwater Monitoring Well Development

The groundwater monitoring well was developed using a stainless steel bailer. Groundwater was purged from the well until the well was purged dry (minimum of three bore volumes).

4.2.3 Groundwater Sampling

A summary of the groundwater sampling methodology is presented in **Table 5** below.

Table 5 Groundwater Sampling Methodology

Activity/item	Description
Well gauging	Monitoring wells were gauged with an interface probe (IP) meter prior to sampling. The IP was used to: • measure the standing water level (SWL) • detect the absence or presence, and thickness of light non-aqueous phase liquid (LNAPL) • measure the total depth of the well No LNAPL was detected with the interface meter at either monitoring well location

Activity/item	Description
Groundwater sampling methodology	Low-flow groundwater sampling was undertaken to sample the groundwater monitoring wells. This methodology consisted of the following: • The groundwater monitoring wells were purged and sampled using a peristaltic pump and dedicated HDPE tubing • <i>Ex situ</i> measurements of water quality parameters including pH, dissolved oxygen (DO), redox potential (redox), temperature and electrical conductivity (EC) were recorded during sampling. These measurements were collected with a water quality meter calibrated prior to use • Groundwater was purged until field parameters stabilised for three consecutive readings. If no stabilisation occurs, the well was purged for a minimum of 15 minutes prior to sampling • Parameters were considered stable when consecutive readings over three minutes are recorded within: - $\pm 10\%$ for dissolved oxygen - $\pm 3\%$ for electrical conductivity - ± 0.05 for pH - $\pm 10\text{mv}$ for redox potential • Other characteristics (e.g. colour, odour, turbidity) identified during sampling was recorded on the field sheet. • The groundwater samples were collected directly from the tubing into the appropriate laboratory supplied sampling containers Excess purge water was temporarily stored in labelled waste drums on-site prior to disposal to an appropriately licensed facility. Samples were placed into an ice filled Esky and transported to the analysing laboratory under Coc protocol. Transport was by AECOM field personnel. Written confirmation of receipt of samples by the laboratories was obtained and assessed by field staff to ensure that samples were received chilled, intact and within appropriate holding times.
Quality assurance / quality control	QA/QC was incorporated into the sampling and analysis works to ensure that the specified DQO's were achieved and to demonstrate DQI parameters (Section 3.0) are met with regard to the data generated
Decontamination procedures	Equipment (i.e., IP) was decontaminated prior to being used with Liquinox™ and de-ionised water

4.3 Laboratory Analysis

The laboratories used in this investigation, which are NATA accredited for the specific analytical procedures were:

- Primary Laboratory: ALS Environmental, Smithfield, New South Wales
- Secondary Laboratory: Eurofins, Girraween, New South Wales

5.0 Assessment Criteria

5.1 Soil Assessment Criteria

Table 6 below presents the soil assessment criteria adopted for this investigation.

Table 6 Selected soil assessment criteria

Assessment criteria	Rationale
Health Investigation Levels (HILs), ASC NEPM (NEPC, 2013)	The ASC NEPM health investigation levels (HILs) provide a framework for the use of investigation and screening levels. The framework is applicable for assessing human health risk via all relevant pathways of exposure and covers a broad range of metals and organic substances. Adopted: HIL D (commercial/industrial) was selected as the Site is proposed to continue as a commercial property
Health Screening Levels (HSLs), ASC NEPM (NEPC, 2013)	The ASC NEPM presents health screening levels (HSLs) for petroleum compounds which have been derived through consideration of risks to human health, with the main focus being on the vapour exposure pathway. Full detail on their derivation and their application is provided in Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE) <i>Technical Report No.10 - Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater</i>. (Friebel, & Nadebaum 2011). Adopted: HSL D was selected as the Site is proposed to continue as a commercial property Sandy clays were encountered on the Site within shallow fills. As a conservative approach, "Sand" was selected for the criteria
Intrusive Maintenance Worker (Shallow Trench) Health Screening Levels, Friebel, & Nadebaum 2011b	Friebel, & Nadebaum (2011) presents the HSLs for vapour intrusion of petroleum compounds relevant to intrusive maintenance workers (shallow trench). Health screening levels for intrusive maintenance workers is adopted for potential future intrusive work into fill and natural materials on-site. Adopted: Soil HSLs – Intrusive Maintenance Workers Sandy clays were encountered on the Site within shallow fills. As a conservative approach, "Sand" was selected for the criteria
Environmental Investigation Levels (EILs), ASC NEPM (NEPC, 2013)	The ASC NEPM environmental investigation levels (EILs) provide a framework for the development and use of site-specific investigation and screening levels based of site soil chemistry and background concentrations. The framework is applicable for assessing terrestrial ecological risk via all relevant pathways of exposure and covers a broad range of metals and organic substances. EIL for commercial/industrial land use was selected as the Site is proposed to be a commercial warehouse.

Assessment criteria	Rationale
	<u>Adopted:</u> EILs for commercial/industrial land use was selected as the Site is proposed to continue as a commercial property
Environmental Screening Levels (ESLs), ASC NEPM (NEPC, 2013)	The ASC NEPM presents ecological screening levels (ESLs) for petroleum compounds which have been derived through consideration of risks to the environment, with the main focus being on the vapour exposure pathway. <u>Adopted:</u> ESLs for commercial/industrial land use was selected as the Site is proposed to continue as a commercial property. Sandy clays were encountered on the Site within shallow fills. As a conservative approach, “Sand” was selected for the criteria
Management Limits, ASC NEPM (NEPC, 2013)	The ASC NEPM presents Management Limits for petroleum compounds to address other adverse effects of TPH other than human and ecological health concerns, i.e., formation of free phase petroleum compounds and risk of explosive atmospheres. <u>Adopted:</u> Management Limits for commercial/industrial land use was selected as the Site is proposed to continue as a commercial property. Coarse soil was selected as a conservative measure given sandy clays were encountered within shallow fills

5.2 Groundwater Assessment Criteria

Table 7 below presents the groundwater assessment criteria adopted for this investigation.

Table 7 Selected groundwater screening criteria

Assessment criteria	Rationale and selection
Human health receptors	
HSLs, ASC NEPM (NEPC, 2013)	The ASC NEPM presents HSLs for petroleum compounds which have been derived through consideration of risks to human health, with the focus being on the vapour exposure pathway. Full detail on their derivation and their application is provided in Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC CARE) <i>Technical Report No.10 - Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater</i> (Friebel, E. and Nadebaum, P, 2011). HSL D was selected as the Site is proposed to continue as a commercial property. <u>HSLs adopted</u> On-site receptors: HSL D Off-site receptors: HSL D

Assessment criteria	Rationale and selection
	Groundwater was encountered within clay, however, the more conservative “Sand” was selected for the criteria
Intrusive Maintenance Worker (Shallow Trench) HSLs, Friebel, & Nadebaum 2011b	Friebel, & Nadebaum (2011) presents the HSLs for vapour intrusion of petroleum compounds relevant to intrusive maintenance workers (shallow trench). Health screening levels for intrusive maintenance workers is adopted for potential future intrusive work into shallow fill on-Site. Trenching activities on the Site will likely be conducted in the shallow subsurface material, and as sandy clays were found within the fill material. The more conservative “sand” was selected as the soil texture. <u>HSLs adopted</u> On-site receptors: GW HSLs – Intrusive Maintenance Workers, SAND Off-site receptors: GW HSLs – Intrusive Maintenance Workers, SAND
NHMRC – 2011 Guidelines for Drinking Water in Australia (ADWG)	A groundwater bore search undertaken by LIR (2022) identified 43 registered bores within a 2 km radius of the Site. The three nearest registered bores are 180 m, 242 m and 292 m from the Site, with listed purpose being water supply, manufacturing and industry. Given the proximity of water supply bores to the Site, drinking water criteria was not adopted for assessment purposes during this investigation. <u>None adopted</u>
Ecological receptors	
Australia and New Zealand Guidelines for Fresh and Marine Water Quality (ANZG, 2018)	The Australia and New Zealand Water Quality Guidelines (ANZG) (2018) provides default guideline values for protection of freshwater species. <u>Adopted:</u> ANZG (2018) Freshwater Water 95% Species Protection

5.3 Waste Classification

To provide a preliminary indication for disposal options, should material be required to be disposed off-site, CoPC have been compared to the criteria outlined in Table 2 of the NSW EPA (2014) *Waste Classification Guidelines*, Part 1: Classifying Waste. The guidelines provide criteria for assessing the appropriate waste classification for material requiring offsite disposal and subsequently assessing the required disposal location for solid and liquid wastes. The classification process for non-liquid wastes focus on the potential for the waste to release chemical contaminants into the environment through contact with liquids (leachates).

CoPC were compared against the Specific Contaminant Concentration (SCC) test, which determines the total concentration of each contaminant in the waste sample. The guidelines set different contaminant thresholds (CT) for the total concentration of each contaminant in order for waste to be classified as either general solid waste (GSW), restricted solid waste or hazardous waste.

6.0 Quality Assurance and Quality Control

6.1 Quality Assurance / Quality Control Methodology

A quality assurance/quality control (QA/QC) program has been developed to ensure that data collected are sufficiently accurate, precise and reproducible to be used for the purposes of this investigation. All stages of the investigation (data gathering, sample handling, laboratory analysis etc.) were conducted in accordance with the QA/QC program outlined in the following sections.

The objective of the QA/QC program is to provide an assessment of the reliability of the data presented for interpretation for the project in terms of DQO's required for the project.

The project DQIs have been established to set acceptance limits on field and laboratory data collected as part of this investigation and are summarised in **Section 3.5**.

The overall reliability of the analytical data will be assessed against the DQIs as required by NSW EPA (2017).

Analytical data that fail to meet the pre-determined data quality objectives and acceptable limits of accuracy and precision will be managed using the following corrective actions on a case-by-case basis:

- reanalyse suspect samples, provided sample or extract is within holding time
- evaluate and amend sampling and / or analytical procedures
- resampling and reanalysis
- accept the data as an estimate with an acknowledged level of bias and imprecision, and
- discard the data.

If data of questionable reliability are used, restrictions and limitations associated with the use of such data will be clearly identified. Failure to meet the DQOs will be reported and the significance to the outcome of the program will be assessed.

6.2 Outcome of Data Validation

Analytical results for intra- and inter-laboratory soil and groundwater samples, and associated relative percentage difference (RPD) calculations, are presented in **Table E1A** and **Table E1B** in **Appendix E**. Results of rinsate blank samples, trip blanks and trip spikes collected during field sampling are presented in **Table E2 to E4** in **Appendix E**.

The data validation procedure employed in the assessment of the field and laboratory QA/QC data indicated that the reported analytical results are representative of the sample locations and that the overall quality of the analytical data produced is acceptably reliable for the purpose of this report.

7.0 Results

7.1 Chronology of Fieldworks

Field activities were conducted between 10 to 19 January 2023 and as outlined in **Section 1.2**, consisted of two tasks: the soil investigation and the groundwater investigation. A summary of the fieldworks is outlined in **Table 8** below.

Field notes and calibration records are provided in **Appendix D**.

Table 8 Summary of fieldwork activities

Date	Task	Works Completed
10 – 13 January 2023	Soil Investigation	- Underground service clearance of proposed borehole locations - Non-destructive drilling (NDD) to a minimum depth of 1.5 m bgl or until refusal of borehole locations - Borehole drilling at 12 locations and monitoring well installation at one location - Hand augering at two locations where drill rig was inaccessible
19 January 2023	Groundwater Investigation	Gauging, purging and sampling of two groundwater monitoring wells (MW01 and MW02)

7.2 Soil Results

7.2.1 Field Observations

During the soil investigation, 12 boreholes were drilled via drill rig and two boreholes were advanced via hand auger. One borehole location (MW14) was converted to a groundwater monitoring well, where groundwater was encountered. During logging and sampling of boreholes, soil samples were screened for VOCs using a PID and readings were recorded on the borelogs (**Appendix C**).

PID readings of all soil samples were 0.0 parts per million (ppm). There was no evidence of contamination (odour or visual) or suspected asbestos observed in the soils encountered or collected across the Site.

Fill materials (sandy clays with gravel and/or cobble inclusions) were encountered from surface to between 0.4 and 0.9 m bgl across majority of the Site. The fill appeared to be reworked natural material. Where no fill was encountered, natural materials (medium plasticity clays) were encountered from surface to between 0.4 and 1.6 m bgl. Soils were underlain by sandstone bedrock (and subsequent refusal) between 1.4 and 3.0 m bgl. The deepest extent of the drilling investigation was 5.1 m bgl at BH14, which was met with refusal on bedrock. Material composition was observed to be consistent across all soil investigation locations at the Site.

The general subsurface soil profile encountered during this investigation is summarised in **Table 9**.

Table 9 Generalised Lithology

Depth (m bgl)	Lithology
0.0 - 0.2	Concrete hardstand / asphalt
0.2 - 0.6	FILL (sandy CLAY): low plasticity, dark brown to light grey, coarse light to dark brown sands, trace sub angular sandstone gravel and cobble inclusions.
0.6 - 1.1	CLAY: low plasticity, dark brown, orange, light or dark grey clays with white, pink or orange mottling
1.1 - 5.1 (refusal)	SANDSTONE: residual, light pink to purple or grey, weathered

7.2.2 Analytical Results

Analytical results for soil samples collected during the DSI are provided in **Table T1, Appendix B** and laboratory certificates and documentation is provided in **Appendix F**.

The analytical results for the soil investigation are summarised as follows:

- All soil samples reported an absence of asbestos
- BTEXN, PAHs, OCP/OPP and phenols were all less than the laboratory LOR
- Heavy metals (all samples) and TRH in the >C16 range (BH14_0.2) concentrations were detected greater than the laboratory LOR, but below the adopted ILs identified in **Section 5.1**

7.3 Groundwater Results

7.3.1 Field Observations

An existing groundwater monitoring well was identified within the central portion of the Site during service clearance on 10 January 2023. This groundwater well was installed by PSM on 14 November 2022, and well construction documents for this well are provided in **Appendix C**. For the purposes of this report, this groundwater well is referred to as MW01.

During field activities, AECOM installed one groundwater monitoring well (MW02) within the southern extent of the Site. Monitoring well locations are presented on **Figure F2, Appendix A** and well installation details in **Appendix C**. As the existing monitoring well (MW01) was installed for a different purpose, comparisons between the two wells should be considered under this light.

The GME was undertaken 19 January 2023 and involved sampling the two groundwater monitoring wells. Each monitoring well was purged prior to sample collection. Groundwater samples were collected using a low-flow peristaltic pump and ex-situ measurement of groundwater geochemical parameter were recorded prior to sample collection. The SWL observed during the GME measured 3.540 m below top of casing (m btoc) at MW01 and 3.194 m btoc at MW02.

Measured groundwater geochemical parameters at the time of sampling are presented in **Table T2, Appendix B** and summarised below:

- pH: ranged between 3.31 and 4.34, indicating moderately acidic groundwater conditions
- Dissolved Oxygen (DO): ranged between 0.73 and 3.30 mg/L, indicating anaerobic to aerobic groundwater conditions
- Redox potential (Eh): ranged between 454.10 and 595.70 mV, indicating oxidising conditions
- Electrical Conductivity (EC): ranged between 199.3 and 1692.0 $\mu\text{S}/\text{cm}$, indicating fresh to slightly brackish conditions
- Total Dissolved Solids (TDS): ranged between 119.6 and 1,015.2 mg/L
- Temperature ($^{\circ}\text{C}$): ranged between 20.7 $^{\circ}\text{C}$ and 20.8 $^{\circ}\text{C}$
- No sheen or odours were observed at any monitoring well location, with the exception of a slightly organic odour initially noted at MW01. PID screening at well heads was 1.8 ppm (MW02) and 4.0 (MW01)

Table 10 Geochemical Parameters

Well	MW01	MW02
Date Sampled	19/01/2023	19/01/2023
Stabilised Depth to Water	3.540	3.194
Total Well Depth	6.961	4.900
Dissolved Oxygen	0.73	3.30
Electrical Conductivity (TDS) ¹	1692.0	199.3

Well	MW01	MW02
Total Dissolved Solids	1015.2	119.6
pH	3.31	4.34
Temperature	20.8	20.7
Redox	393.7	252.1
Redox Potential (Eh) ²	595.70	454.10
PID Well Head Reading	4.0	1.8

¹ – TDS approximated as Electrical Conductivity x 0.6

² – Redox Potential (Er) measured with a platinum electrode and a silver/silver chloride reference electrode (Er) and converted to Eh by $Eh = Er + 202 \text{ mV}$ (based on a groundwater temperature of 25.0°C)

Due to only two groundwater monitoring wells being present at the Site, it was decided that a survey of well heads in relation to SWL encountered was not necessary. Therefore, groundwater elevations have not been determined.

Given the general slope and grade noted on-site, groundwater flow direction is anticipated to run south, towards Manly Creek.

7.3.2 Analytical Results

Analytical results for the groundwater samples collected during the DSI are tabulated in **Table T3, Appendix B**. Laboratory certificates and documentation is provided in **Appendix F**. Groundwater analytical results are summarised as follows:

- TRH, BTEXN, PAHs and OCP/OPP were all reported less than the laboratory LOR
- Heavy metals concentrations were greater than the laboratory LOR with the exception of mercury. Copper (0.005 mg/L – MW01) and Zinc (0.04 – MW01 and 0.02 mg/L – MW02) exceeded the ecological criteria nominated for the site as noted in **Section 6.2**.
- The groundwater analytical results returned concentrations of CoPCs below the adopted human health ILs for groundwater identified in **Section 5.2**

It is noted that the laboratory LORs of a number of PAHs, OCP and OPP) were greater than adopted ecological IL. However, the likelihood of these CoPC actually being present at concentrations greater than the ecological IL is considered to be unlikely based on the results of the overall soil investigation and the risk to identified on- and off-site ecological receptors acceptably low.

Additionally, potential on-site ecological receptors identified at the Site are restricted to scattered surface vegetation and do not have access to groundwater, and the identified potential off-site ecological receptor, Manly Creek, is not expected to be affected by these CoPC.

The LOR/criteria discrepancy is considered negligible and the risk of these CoPC being present or impacting groundwater at the Site or off-site is considered low based on site history and results for all other analytes.

7.4 Waste Classification Results

Soil analytical results were assessed against the NSW EPA Waste Classification Guidelines (2014) and results are presented in **Table T4, Appendix B**. Laboratory certificates and documentation is provided in **Appendix F**.

Soils cuttings generated from borehole drilling were reinstated into their respective borehole, or collected into 200 L drums and stored on-site, awaiting waste classification for off-site disposal.

From the analytical results, it is observed that all results were below NSW Waste Classification Criteria CT1 - General Solid Waste, with the following exceptions:

- Nickel (CT1 criteria value of 40 mg/kg) – BH06_0.2 (69 mg/kg), BH13_0.2 (63 mg/kg), BH14_0.2 (52 mg/kg) and HA01_0.2 (42 mg/kg)

Based on the CT1 criteria exceedances listed above, toxicity characteristic leaching procedure (TCLP) analysis for nickel was undertaken to assess whether analytes within the soil are leachable. TCLP results are included in **Table T4, Appendix B**.

Review of the analytical results for total concentrations, with the TCLP results indicate the results were below the SCC1 and TCLP1 values. Therefore, the material meets the classification of GSW.

8.0 Discussion

8.1 Soil

The data gap identified in the Phase 1 PSA relating to potential uncontrolled fill presence has been addressed through the sample collection and analysis of both fill and natural materials from 14 locations across the Site. The maximum depth of soil investigations at the Site was 5.1 m bgl at BH14.

Fill material was encountered to a maximum depth of 0.9 m bgl (BH05) and consisted of dark brown to light grey clay with coarse light to dark brown sands and sub angular sandstone gravel and cobble inclusions indicating the fill was likely to be reworked natural material. The composition of fill materials was consistent across the entirety of the Site.

No observations of contamination within fill or natural materials were noted during drilling activities, and PID values of all soil samples were 0.0 ppm, indicating a low likelihood of VOC contamination within soils. Fill materials were overlain on top of natural materials, which consisted of dark brown, orange, light or dark grey clays with white, pink or orange mottling, followed by light purple to pink or grey weathered sandstone bedrock.

Soil analytical results returned concentrations of CoPCs less than the laboratory LOR and / or the adopted ILs for soil identified in **Section 5.1**. Additionally, soils at the Site reported concentrations below NSW Waste Classification Criteria CT1 - General Solid Waste, through TCLP analysis and may be disposed of off-site at a suitably licensed waste facility as General Solid Waste.

8.2 Groundwater

One groundwater monitoring well (MW02) was installed in the southern extent of the Site, as this location was the only one where groundwater was encountered before refusal on bedrock. An existing groundwater well (MW01) installed by PSM on 14 November 2022 was located within the central portion of the Site. The borelog and well construction documents for this previously installed well is provided in **Appendix C**.

The GME was conducted 19 January 2023 and involved sampling the two groundwater monitoring wells. Each monitoring well was purged prior to sample collection. Groundwater samples were collected using a low-flow peristaltic pump and ex-situ measurement of groundwater geochemical parameter were recorded prior to sample collection. The SWL observed during the GME measured 3.540 m btoc (MW01) and 3.194 m btoc (MW02). No visible sheen or odours were observed at any monitoring well location, with the exception of a slightly organic odour initially noted at MW01. PID screening at well heads was 4.0 (MW01) and 1.8 ppm (MW02).

The geochemical parameters indicate that groundwater at the Site is moderately acidic, anaerobic to aerobic, oxidising and both fresh and slightly brackish as there was a notable difference between the PSM installed well (MW01) and the AECOM installed well (MW02) for electrical conductivity / TDS. This variance is likely due to the different construction methods and purpose of the wells and therefore freshwater criteria have been applied.

The groundwater analytical results returned concentrations of CoPCs less than the laboratory LOR and / or adopted human health ILs for groundwater identified in **Section 5.2**. Ecological ILs were exceeded in both wells for Copper and Zinc, however it is considered that this would not impact on ecological receptors in the area given the concentrations are likely attributable to background concentrations in the sandstone and urban environment because:

- there is little variance between the concentrations; and
- there are no confirmed sources in the soil results.

9.0 Updated Conceptual Site Model

The updated CSM presented in **Table 11** is based on available soil and groundwater analytical data.

Table 11 Conceptual Site Model

Receptors	Current Complete Linkages	Potentially Complete Linkages
On-site ecological: None	No • Soil CoPC were below adopted ecological ILs for commercial/industrial land use • GW CoPC were below adopted ecological ILs, with the exception of Copper and Zinc, however: - No evidence to support contamination at the Site due to these CoPC and they are likely background concentrations - Identified potential on-site ecological receptors do not have access to GW	No Same as for complete
Off-site ecological: Manly Creek (740 m south)	No • Soil CoPC were below adopted ecological ILs for commercial/industrial land use • GW CoPC were below adopted ecological ILs, with the exception of Copper and Zinc, however: - No evidence to support contamination at the Site due to these CoPC and they are likely background concentrations - Identified off site ecological receptor is > 500 m away.	No Same as for complete
On-site human health: Commercial/industrial workers	No • Soil and GW CoPC were below adopted human health ILs for commercial workers and land use	No Same as for complete
Off-site human health: Commercial/industrial workers in neighbouring facilities	No • Soil and GW CoPC were below adopted human health ILs for commercial workers and land use	No Same as for complete
Abbreviations and notes: GW = groundwater; IMW = intrusive maintenance workers; WHS = workplace health and safety <i>AECOM considered that all future intrusive or construction works on the site would be undertaken in accordance with responsibilities under relevant Work Health and Safety legislation and relevant industry guidelines. Therefore, intrusive activities would be expected to be carried out under an appropriate site health and safety plan and, as such, the potential risk of exposure to contaminants present on this site would be addressed accordingly.</i>		

10.0 Conclusions and Recommendation

10.1 Conclusions

The objective of this DSI was to assess contamination across the Site for all CoPC identified in the Phase 1 DSI (AECOM, 2022), assess the potential exposure risks to subsurface workers and provide a preliminary waste classification and to determine if a RAP or LTEMP may be required during or after development of the Site.

As summarised in the updated CSM, the contamination risk to human health and ecological receptors at the Site is considered to be low, as there is no complete source-pathway-receptor linkage and soil and groundwater CoPC were below adopted IL criteria for human health and although above for groundwater ecological ILs, it is not considered to pose a risk to receptors based on absence of identified impact in the soil results and likelihood of concentrations representing background levels in the sandstone and urban environment.

Given that impacts have not been identified that pose a significant risk, a RAP or LTEMP are not considered required for future development of the Site. Based on the available data, the results from the investigation indicate that the subsurface material would have an indicative waste classification of GSW, if off-site disposal is required.

10.2 Recommendations

The following is recommended:

- Proposed development activities are conducted under a Construction Environmental Management Plan (CEMP) incorporating an Unexpected Finds Protocol (UFP) and a Fill Importation Protocol (FIP) if significant importation of material is required. The CEMP should identify environmental controls required including but not limited to noise, erosion, dust, waste, unexpected finds including potentially contaminated fill which may contain asbestos or heavy metals. This document will provide the information and management required should unexpected contamination be encountered and so that potentially contaminated material is not imported and placed at the Site during construction activities.

11.0 References

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Appendix A

Figures



AECOM



Legend
 Site Boundary

FIGURE 1:
SITE LOCALITY

PROJECT: PHASE 2 DETAILED
SITE INVESTIGATION

SITE: 14 AQUATIC DRIVE,
FRENCHS FOREST NSW 2086

CLIENT: GOODMAN PROPERTY
SERVICES (AUST) PTY LTD

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Source: Imagery @ Nearmap 2022



- Legend
- Site Boundary
 - Proposed building footprint
 - Proposed garden area
 - Proposed pavement area
- Sampling location type
- Borehole
 - Hand auger
 - Monitoring well

FIGURE 2:
SAMPLE LOCATIONS

PROJECT: PHASE 2 DETAILED
SITE INVESTIGATION

SITE: 14 AQUATIC DRIVE,
FRENCHS FOREST NSW 2086

CLIENT: GOODMAN PROPERTY
SERVICES (AUST) PTY LTD

*MW01 is an existing well previ-
ously installed by PSM

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DEVELOPMENT GROSS FLOOR AREA SCHEDULE

SITE AREA	15,460 m ²
LANDSCAPE AREA	3,815 m ² (25%)

GROUND FLOOR GFA	
Communal GFA	95 m ²
Service GFA	46 m ²
Storage GFA (145)	4,230 m ²
Washbay GFA	30 m ²
TOTAL GROUND FLOOR GFA	4,401 m ²
CAR PARK	39

LEVEL 1 FLOOR GFA	
Communal GFA	41 m ²
Storage GFA (8)	271 m ²
Warehouse GFA (33) Excl. Loading Zone	2,075 m ²
Mezzanine GFA (33)	1,072 m ²
TOTAL LEVEL 1 GFA	3,460 m ²
CAR PARK	42

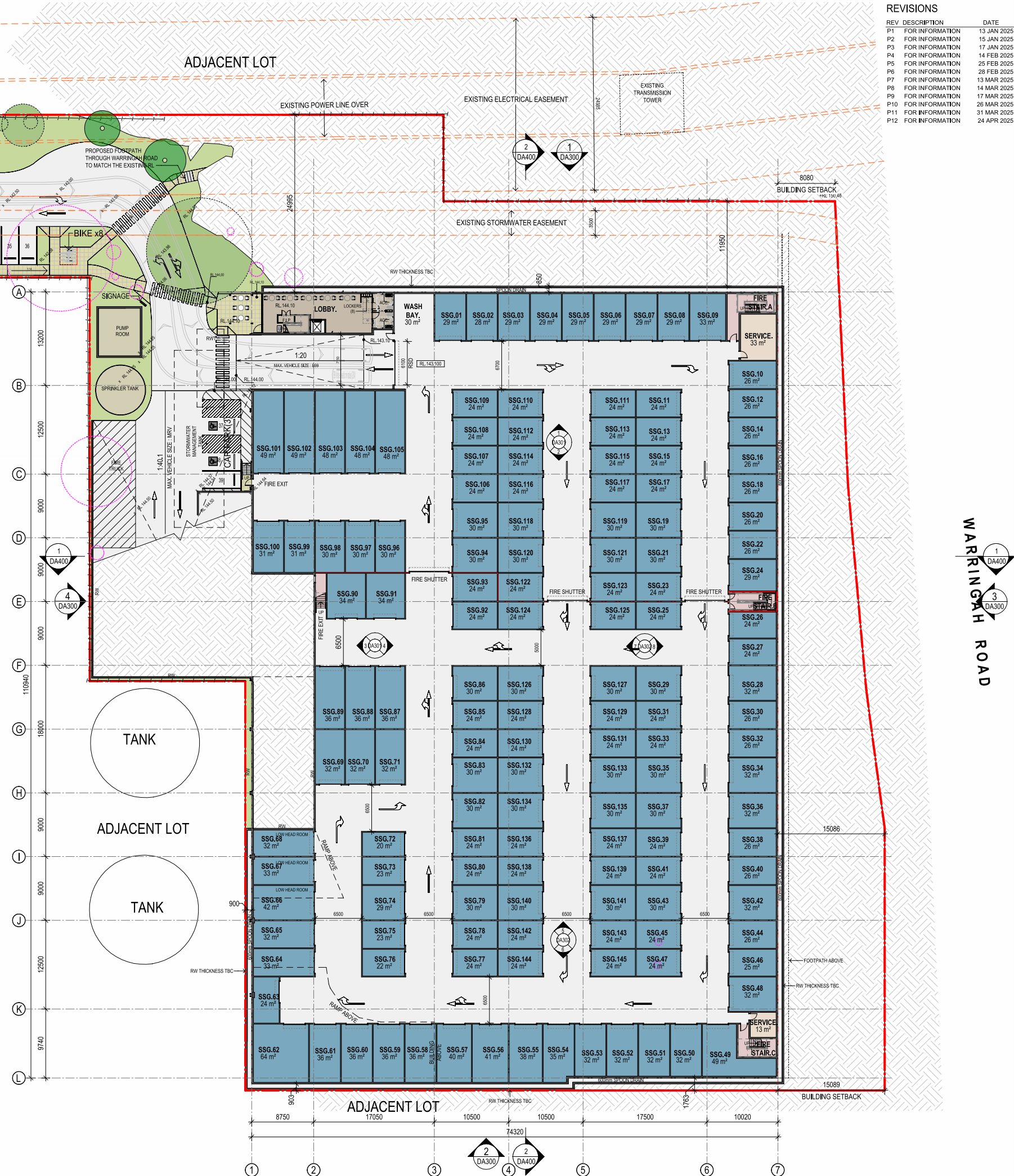
LEVEL 2 FLOOR GFA	
Communal GFA	30 m ²
Outdoor GFA	113 m ²
Warehouse GFA (39) Excl. Loading Zone	2,454 m ²
Mezzanine GFA (39)	1,341 m ²
TOTAL LEVEL 2 GFA	3,938 m ²
CAR PARK	42

TOTAL STORAGE GFA (153)	4,501 m ²
TOTAL WAREHOUSE GFA (72) Excl. Loading Zone	4,529 m ²
TOTAL MEZZANINE GFA (72)	2,413 m ²
TOTAL OTHER GFA	356 m ²
TOTAL BUILDING GFA	11,798 m ²
FSR	76%

TOTAL CAR PARK PROVIDED	123
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LEGEND

- STRATA STORAGE
- WAREHOUSE / MEZZANINE
- COMMUNAL AREA / CAFE
- FIRE STAIR
- SERVICE ROOM
- FOOTPATH
- LANDSCAPE
- FIREWALL
- SITE BOUNDARY
- BUILDING SETBACK
- EXISTING EASEMENT
- FNC-EX EXISTING MESH WIRE FENCE TO BE RETAINED
- FNC-2 2.1M HEIGHT PALISADE FENCE
- RW RETAINING WALL
- RW-EX EXISTING RETAINING WALL TO BE REMAINED
- PROPOSED FLOOR LEVEL Refer to Civil Engineer's Drawing for Details
- EXISTING TREES TO BE RETAINED
- EXISTING TREES TO BE REMOVED
- PROPOSED TREES Refer to Landscape Architect's Drawing for Details
- BOLLARD



REVISIONS

REV	DESCRIPTION	DATE
P1	FOR INFORMATION	13 JAN 2025
P2	FOR INFORMATION	15 JAN 2025
P3	FOR INFORMATION	17 JAN 2025
P4	FOR INFORMATION	14 FEB 2025
P5	FOR INFORMATION	25 FEB 2025
P6	FOR INFORMATION	28 FEB 2025
P7	FOR INFORMATION	13 MAR 2025
P8	FOR INFORMATION	14 MAR 2025
P9	FOR INFORMATION	17 MAR 2025
P10	FOR INFORMATION	26 MAR 2025
P11	FOR INFORMATION	31 MAR 2025
P12	FOR INFORMATION	24 APR 2025

Appendix B

Analytical Tables

Soil Analytical Table

	Metals								Total Petroleum Hydrocarbons					Total Recoverable Hydrocarbons						Monocyclic Aromatic Hydrocarbons							Naphthalene					
	Arsenic	Cadmium	Chromium	Copper	LEAD	Mercury	Nickel	Zinc	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 (minus Naphthalene)(F2)	>C10-C16 fraction	>C16-C34 fraction	>C34-C40 fraction	>C10-C40 fraction (sum)	Benzene	Toluene	Ethylbenzene	m&p-Xylene	o-Xylene	Total Xylenes	Total BTEX	Naphthalene (VOC)	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ calc (Zero)	Benzo(a)pyrene TEQ calc(PQL)	Naphthalene
	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	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
LOR	5	1	2	5	5	0.1	2	5	10	50	100	100	50	10	10	50	50	100	100	50	0.2	0.5	0.5	0.5	0.5	0.5	0.2	1	0.5	0.5	0.5	0.5
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil	3000	900		240000	1500	730	6000	400000																					40	40	40	
NEPM 2013 Table 1B(5) Generic EIL - Comm/Ind	160																															370
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil														700			1000	3500	10000													
CRC Care 2011 Table B3 Soil HSL Int. Main. Worker (Shallow Trench), Sand																																
0-2m															NL	NL					77	NL	NL			NL		NL				
2-4m															NL	NL					160	NL	NL			NL		NL				
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand																																
0-1m															260	NL					3	NL	NL			230						NL
1-2m															370	NL					3	NL	NL			NL						NL
2-4m															630	NL					3	NL	NL			NL						NL
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil																																
0-2m															215	170	170	1700	3300		75	135	165			180						

Location Code	Field ID	Sample Depth Range	Sampled Date Time	<5	<1	13	14	21	<0.1	4	22	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	0.6	<0.5	1.2	<0.5
BH03	BH03 0.2 230111	0.2	13/01/2023	<5	<1	13	14	21	<0.1	4	22	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	0.6	<0.5	1.2	<0.5
BH03	BH03 1.3 230111	1.3	13/01/2023	12	<1	18	11	12	<0.1	<2	<5	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	0.6	<0.5	1.2	<0.5
BH03	QC101	0.2	13/01/2023	<5	<1	12	66	21	<0.1	7	34	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	0.6	<0.5	1.2	<0.5
BH03	QC201	0.2	13/01/2023	3	<0.4	11	8.6	15	<0.1	<5	13	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	-	0.6	<0.5	1.2	<0.5	
BH04	BH04 0.3 230111	0.3	12/01/2023	6	<1	28	<5	16	<0.1	3	<5	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	0.6	<0.5	1.2	<0.5
BH05	BH05 0.3 230112	0.3	12/01/2023	<5	<1	17	11	20	<0.1	5	41	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	0.6	<0.5	1.2	<0.5
BH06	BH06 0.2 230111	0.2	11/01/2023	<5	<1	32	67	32	<0.1	69	102	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	0.6	<0.5	1.2	<0.5
BH06	BH06 0.6 230111	0.6	11/01/2023	<5	<1	10	8	14	<0.1	<2	9	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	0.6	<0.5	1.2	<0.5
BH07	BH07 0.2 230111	0.2	11/01/2023	<5	<1	9	26	10	<0.1	25	19	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	0.6	<0.5	1.2	<0.5
BH07	BH07 0.7 230111	0.7	11/01/2023	<5	<1	13	<5	18	<0.1	<2	<5	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	0.6	<0.5	1.2	<0.5
BH08	BH08 0.2 230112	0.2	12/01/2023	6	<1	10	22	16	<0.1	4	23	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	0.6	<0.5	1.2	<0.5
BH08	BH08 0.7 230112	0.7	12/01/2023	7	<1	14	21	12	<0.1	2	<5	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	0.6	<0.5	1.2	<0.5
BH09	BH09 0.2 230112	0.2	12/01/2023	<5	<1	9	23	12	<0.1	<2	6	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	0.6	<0.5	1.2	<0.5
BH10	BH10 0.7 230112	0.7	12/01/2023	<5	<1	18	<5	31	<0.1	4	<5	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	0.6	<0.5	1.2	<0.5
BH11	BH11 0.2 230111	0.2	11/01/2023	<5	<1	8	17	12	<0.1	9	12	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	0.6	<0.5	1.2	<0.5
BH12	BH12 0.8 230111	0.8	11/01/2023	<5	<1	10	5	14	<0.1	2	9	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	0.6	<0.5	1.2	<0.5
BH13	BH13 0.2 230111	0.2	11/01/2023	<5	<1	10	68	6	<0.1	63	47	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	0.6	<0.5	1.2	<0.5
BH13	BH13 1.0 230111	1	11/01/2023	<5	<1	6	<5	13	<0.1	<2	<5	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	0.6	<0.5	1.2	<0.5
BH13	QC100	1	11/01/2023	<5	<1	3	<5	12	<0.1	<2	<5	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	0.6	<0.5	1.2	<0.5
BH13	QC200	1	11/01/2023	2.7	<0.4	7.1	<5	14	<0.1	<5	6.4	<20	<20	<50	<50	<50	<20	<20	<50	<50	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	-	-	0.6	<0.5	1.2	<0.5	
BH14	BH14 0.2 230111	0.2	11/01/2023	<5	<1	12	54	<5	<0.1	52	35	<10	<50	250	540	790	<10	<10	<50	<50	620	280	900	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	0.6	<0.5	1.2	<0.5
BH14	BH14 0.7 230111	0.7	11/01/2023	<5	<1	13	<5	9	<0.1	2	5	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	0.6	<0.5	1.2	<0.5
HA01	HA01 0.2 230111	0.2	13/01/2023	<5	<1	16	25	11	<0.1	42	42	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	0.6	<0.5	1.2	<0.5
HA01	HA01 0.4 230111	0.4	13/01/2023	<5	<1	12	<5	15	<0.1	5	18	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	0.6	<0.5	1.2	<0.5
HA02	HA02 0.2 230111	0.2	13/01/2023	<5	<1	11	10	17	<0.1	5	34	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	0.6	<0.5	1.2	<0.5

Soil Analytical Table

										-Chemical Par		Organophosphorus Pesticides (OP)																												
	4-Nitrophenol	Dinoseb	Tetrachlorophenols	Sum of Phenols (halogenated)	Sum of Phenols (non-halogenated)	Moisture Content (dried @ 103°C)		Moisture Content	weight of sample	Bol star (Sulprofos)	Mevinphos (Phosdrin)	Omethoate	Pirimiphos-methyl	Pyrazophos	Azinphos Methyl	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Demeton-S-methyl	Diazinon	Dichlorvos	Dimethoate	Disulfoton	EPN	Ethion	Ethoprop	Fenamiphos	Fenitrothion	Fensulfotthion	Fenthion					
						%	%																																	
LOR	5	20	10	1	20	1	1	0.01		0.2	0.2	2	0.2	0.2	0.05	0.05	0.05	0.05	0.05	0.05	2	0.2	0.2	0.05	0.05	0.05	0.05	0.2	0.2	0.05	0.2	0.05	0.2	0.2	0.2	0.05				
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil																			2000																					
NEPM 2013 Table 1B(5) Generic EIL - Comm/Ind																																								
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																																								
CRC Care 2011 Table B3 Soil HSL Int. Main. Worker (Shallow Trench), Sand																																								
0-2m																																								
2-4m																																								
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand																																								
0-1m																																								
1-2m																																								
2-4m																																								
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil																																								
0-2m																																								

Location Code	Field ID	Sample Depth Range	Sampled Date Time	-	-	-	-	-	-	16.3	269	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	-	<0.05	-	-	<0.05
BH03	BH03 0.2 230111	0.2	13/01/2023	-	-	-	-	-	-	12.5	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	-	<0.05	-	-	<0.05
BH03	BH03 1.3 230111	1.3	13/01/2023	-	-	-	-	-	-	15.8	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	-	<0.05	-	-	<0.05
BH03	QC101	0.2	13/01/2023	-	-	-	-	-	-	19	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	-	<0.05	-	-	<0.05
BH03	QC201	0.2	13/01/2023	<5	<20	<10	<1	<20	19	-	-	<0.2	<0.2	<2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	
BH04	BH04 0.3 230111	0.3	12/01/2023	-	-	-	-	-	-	19.5	345	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	-	<0.05	-	-	<0.05
BH05	BH05 0.3 230112	0.3	12/01/2023	-	-	-	-	-	-	22	481	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	-	<0.05	-	-	<0.05
BH06	BH06 0.2 230111	0.2	11/01/2023	-	-	-	-	-	-	11.4	524	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	-	<0.05	-	-	<0.05
BH06	BH06 0.6 230111	0.6	11/01/2023	-	-	-	-	-	-	7.2	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	-	<0.05	-	-	<0.05
BH07	BH07 0.2 230111	0.2	11/01/2023	-	-	-	-	-	-	20.4	393	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	-	<0.05	-	-	<0.05
BH07	BH07 0.7 230111	0.7	11/01/2023	-	-	-	-	-	-	16.7	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	-	<0.05	-	-	<0.05
BH08	BH08 0.2 230112	0.2	12/01/2023	-	-	-	-	-	-	11.4	397	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	-	<0.05	-	-	<0.05
BH08	BH08 0.7 230112	0.7	12/01/2023	-	-	-	-	-	-	12.1	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	-	<0.05	-	-	<0.05
BH09	BH09 0.2 230112	0.2	12/01/2023	-	-	-	-	-	-	16.4	382	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	-	<0.05	-	-	<0.05
BH10	BH10 0.7 230112	0.7	12/01/2023	-	-	-	-	-	-	21.2	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	-	<0.05	-	-	<0.05
BH11	BH11 0.2 230111	0.2	11/01/2023	-	-	-	-	-	-	8.9	389	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	-	<0.05	-	-	<0.05
BH12	BH12 0.8 230111	0.8	11/01/2023	-	-	-	-	-	-	10.3	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	-	<0.05	-	-	<0.05
BH13	BH13 0.2 230111	0.2	11/01/2023	-	-	-	-	-	-	9.9	383	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	-	<0.05	-	-	<0.05
BH13	BH13 1.0 230111	1	11/01/2023	-	-	-	-	-	-	14.4	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	-	<0.05	-	-	<0.05
BH13	QC100	1	11/01/2023	-	-	-	-	-	-	10.6	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	-	<0.05	-	-	<0.05
BH13	QC200	1	11/01/2023	<5	<20	<10	<1	<20	11	-	-	<0.2	<0.2	<2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	
BH14	BH14 0.2 230111	0.2	11/01/2023	-	-	-	-	-	-	14.5	466	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	-	<0.05	-	-	<0.05
BH14	BH14 0.7 230111	0.7	11/01/2023	-	-	-	-	-	-	16.4	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	-	<0.05	-	-	<0.05
HA01	HA01 0.2 230111	0.2	13/01/2023	-	-	-	-	-	-	8.4	452	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	-	<0.05	-	-	<0.05
HA01	HA01 0.4 230111	0.4	13/01/2023	-	-	-	-	-	-	12.4	-	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	-	<0.05	-	-	<0.05
HA02	HA02 0.2 230111	0.2	13/01/2023	-	-	-	-	-	-	13.3	331	-	-	-	-	-	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	<0.05	-	-	<0.05	-	<0.05	-	-	<0.05

Soil Analytical Table

	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor epoxide	Hexachlorobenzene (HCB)	Methoxychlor	Toxaphene	Organochlorine pesticides (sum)	Other organochlorine pesticides (sum)	Asbestos			
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	APPROVED IDENTIFIER:	Asbestos fibres	Asbestos Type	Asbestos (Trace)
LOR	0.05	0.05	0.05	0.05	0.05	0.2	0.5	0.1	0.1	-	0.1	-	5
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil			50		80	2500	160						
NEPM 2013 Table 1B(5) Generic EIL - Comm/Ind													
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil													
CRC Care 2011 Table B3 Soil HSL Int. Main. Worker (Shallow Trench), Sand													
0-2m													
2-4m													
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand													
0-1m													
1-2m													
2-4m													
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil													
0-2m													

Location Code	Field ID	Sample Depth Range	Sampled Date Time														
BH03	BH03 0.2 230111	0.2	13/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	1	0	1	0	
BH03	BH03 1.3 23011	1.3	13/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	-	-	-	-	
BH03	QC101	0.2	13/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	-	-	-	-	
BH03	QC201	0.2	13/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	-	-	-	-	
BH04	BH04 0.3 230111	0.3	12/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	1	0	1	0	
BH05	BH05 0.3 230112	0.3	12/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	1	0	1	0	
BH06	BH06 0.2 230111	0.2	11/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	1	0	1	0	
BH06	BH06 0.6 230111	0.6	11/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	-	-	-	-	
BH07	BH07 0.2 230111	0.2	11/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	1	0	1	0	
BH07	BH07 0.7 230111	0.7	11/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	-	-	-	-	
BH08	BH08 0.2 230112	0.2	12/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	1	0	1	0	
BH08	BH08 0.7 230112	0.7	12/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	-	-	-	-	
BH09	BH09 0.2 230112	0.2	12/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	1	0	1	0	
BH10	BH10 0.7 230112	0.7	12/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	-	-	-	-	
BH11	BH11 0.2 230111	0.2	11/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	1	0	1	0	
BH12	BH12 0.8 230111	0.8	11/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	-	-	-	-	
BH13	BH13 0.2 230111	0.2	11/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	1	0	1	0	
BH13	BH13 1.0 230111	1	11/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	-	-	-	-	
BH13	QC100	1	11/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	-	-	-	-	
BH13	QC200	1	11/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	-	-	-	-	
BH14	BH14 0.2 230111	0.2	11/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	1	0	1	0	
BH14	BH14 0.7 230111	0.7	11/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	-	-	-	-	
HA01	HA01 0.2 230111	0.2	13/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	1	0	1	0	
HA01	HA01 0.4 230111	0.4	13/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	-	-	-	-	
HA02	HA02 0.2 230111	0.2	13/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	1	0	1	0	

Table T2

Groundwater Field Parameters

Parameter		Stabilised Depth to Water	Total Well Depth	Volume Removed	Dissolved Oxygen (Field)	Electrical Conductivity (Field)	Total Dissolved Solids (TDS) ^{1 2}	pH (Field)	Temperature (Field)	Redox (Field)	Redox Potential (Eh) ³	PID Well Head Reading	Comments
Units		(m BTOC)	(m BTOC)	L	mg/L	uS/cm	mg/L	pH units	°C	mV	mV	ppm	
Well ID	Date												
MW01	19/01/2023	3.540	6.961	3.6	0.73	1692.0	1015.2	3.31	20.8	393.7	595.70	4.0	Slight organic odour, no sheen, clear, low turbidity. Sediment present on tip of interface probe.
MW02	19/01/2023	3.194	4.900	3.0	3.30	199.3	119.6	4.34	20.7	252.1	454.10	1.8	No odour or sheen, clear, low turbidity.

Notes

(1) TDS = Total Dissolved Solids

(2) TDS approximated as Electrical Conductivity x 0.6

(3) Redox Potential (Er) measured with a platinum electrode and a silver/silver chloride reference electrode (Er) and converted to Eh by Eh = Er + 202 mV (based on a groundwater temperature of 25.0°C)

mg/L = milligrams per litre

mV = millivolts

°C = degrees Celsius

uS/cm = microsiemens per centimetre

"-" = not measured

L = Litres

Created by: MT

Groundwater Analytical Table

					Metals								total Petroleum Hydrocarbon					Total Recoverable Hydrocarbons						Monocyclic Aromatic Hydrocarbons						Polynuclear Aromatic Hydrocarbons																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												
					Arsenic (Filtered)	Cadmium (Filtered)	Chromium (Filtered)	Copper (Filtered)	Lead (Filtered)	Mercury (Filtered)	Nickel (Filtered)	Zinc (Filtered)	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 (minus Naphthalene)(F2)		>C10-C16 fraction	>C16-C34 fraction	>C34-C40 fraction	>C10-C40 fraction (sum)	Benzene	Toluene	Ethylbenzene	m&p-Xylene	o-Xylene	Total Xylenes	Total BTEX	Benzo(a)pyrene TEQ calc (Zero)	Naphthalene	Acenaphthylene	Acenaphthene	Anthracene	Fluorene	Phenanthrene	Fluoranthene	Benz(a)anthracene	Benzo(k)fluoranthene	Benzo(b&j)fluoranthene																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														

Groundwater Analytical Table

					carbons							Phenolic Compounds																																			
					Benzo(a)pyrene	Chrysene	Pyrene	Benzo(g,h,i)perylene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Sum of PAHs	3/4-Methylphenol (m/p-cresol)	Phenol	2-Chlorophenol	2-Methylphenol (o-Cresol)	3&4-Methylphenol (m&p-Cresol)	Total Cresols	2-Nitrophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,6-Dichlorophenol	4-Chloro-3-methylphenol	2,4,6-Trichlorophenol	2,4,5-Trichlorophenol	4,6-Dinitro-2-methylphenol	Pentachlorophenol	2,4-Dinitrophenol	2-Cyclohexyl-4,6-dinitrophenol	4-Nitrophenol	Dinoseb	Tetrachlorophenols	Sum of Phenols (halogenated)	Sum of Phenols (non-halogenated)	Bolstar (Sulprofos)	Mevinphos (Phosdrin)	Omethoate	Pirimiphos-methyl	Pyrazophos	Azinphos Methyl	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L		
LOR					0.5	1	1	1	1	1	0.5	2	1	1	1	6	10	1	1	1	1	1	1	30	2	30	100	30	100	30	10	100															
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs					0.2								320	490					160				20			10	45											0.02				0.01					
CRC Care 2011 Table B2 GW HSL Int. Main. Worker (Shallow Trench), Sand																																															
2-4m																																															
4-8m																																															
>8m																																															
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Sand																																															
2-4m																																															
4-8m																																															
>8m																																															
Field ID	Lab Report Number	Sample Type	Location Code	Sampled Date Time	<0.5	<1	<1	<1	<1	<1	<0.5	<2	<1	<1	<1	-	-	<1	<1	<1	<1	<1	<1	<1	-	<2	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	
MW01_230119	ES2301798	Normal	MW01	19/01/2023	<0.5	<1	<1	<1	<1	<1	<0.5	<2	<1	<1	<1	-	-	<1	<1	<1	<1	<1	<1	<1	-	<2	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	
MW02_230119	ES2301798	Normal	MW02	19/01/2023	<0.5	<1	<1	<1	<1	<1	<0.5	<2	<1	<1	<1	-	-	<1	<1	<1	<1	<1	<1	<1	-	<2	-	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	
QC102	ES2301798	Field D	MW02	19/01/2023	<0.5	<1	<1	<1	<1	<1	<0.5	<2	<1	<1	<1	-	-	<1	<1	<1	<1	<1	<1	<1	-	<2	-	-	-	-	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	-		
QC202	957400	Interlab D	MW01	19/01/2023	<1	<1	<1	<1	<1	<1	<1	-	<3	<3	<3	<6	<10	<10	<3	<3	<3	<3	<10	<10	<10	<30	<10	<30	<100	<30	<100	<30	<10	<100	<2	<2	<20	<20	<2	<2	-	-	<20	<2	<2	<20	<2

Groundwater Analytical Table

					Organophosphorus Pesticides (OP)																							Organochlorine Pe																		
					Demeton-S	Demeton-S-methyl	Diazinon	Dichlorvos	Dimethoate	Disulfoton	EPN	Ethion	Ethoprop	Fenamiphos	Fenitrothion	Fensulfothion	Fenthion	Malathion	Merphos	Monocrotophos	Naled (Dibrom)	Parathion	Parathion-methyl	Phorate	Pirimphos-ethyl	Prothiofos	Ronnel	Trichloronate	Terbufos	Tetrachlorvinphos	Tokuthion	Aldrin	Dieldrin	Aldrin + Dieldrin	a-BHC	b-BHC	d-BHC	g-BHC (Lindane)	cis-Chlordane	trans-Chlordane	Chlordane	DDD	DDE	DDT	DDT+DDE+DDD	
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L		
LOR					2	0.5	0.5	0.5	0.5	2	2	0.5	2	0.5	2	2	0.5	0.5	2	2	2	2	2	2	0.5	0.5	2	2	2	2	0.002	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
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs							0.01		0.15						0.2			0.05				0.004																								
CRC Care 2011 Table B2 GW HSL Int. Main. Worker (Shallow Trench), Sand																																														
2-4m																																														
4-8m																																														
>8m																																														
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Sand																																														
2-4m																																														
4-8m																																														
>8m																																														
Field ID	Lab Report Number	Sample Type	Location Code	Sampled Date Time	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	<0.5	-	-	<0.5	<0.5	-	<2	-	<2	<2	-	<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	<2	<0.5
MW01_230119	ES2301798	Normal	MW01	19/01/2023	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	<0.5	-	-	<0.5	<0.5	-	<2	-	<2	<2	-	<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	<2	<0.5
MW02_230119	ES2301798	Normal	MW02	19/01/2023	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	<0.5	-	-	<0.5	<0.5	-	<2	-	<2	<2	-	<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	<2	<0.5
QC102	ES2301798	Field_D	MW02	19/01/2023	-	<0.5	<0.5	<0.5	<0.5	-	-	<0.5	-	<0.5	-	-	<0.5	<0.5	-	<2	-	<2	<2	-	<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	<2	<0.5
QC202	957400	Interlab_D	MW01	19/01/2023	<2	-	<2	<2	<2	<2	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-	-	<2	<2	<2	<2	<0.002	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	<2	<0.2	<0.2	<0.2	<0.2	

Groundwater Analytical Table

					sticides (OC)												
					Endosulfan 1	Endosulfan 2	Endosulfan sulfate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor epoxide	Hexachlorobenzene (HCB)	Methoxychlor	Toxaphene	Organochlorine pesticides (sum)	Other organochlorine pesticides (sum)
					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
LOR					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	5	2	2
ANZG (2018) Freshwater 95% LOSP Toxicant DGVs								0.02			0.09		0.1		0.2		
CRC Care 2011 Table B2 GW HSL Int. Main. Worker (Shallow Trench), Sand																	
2-4m																	
4-8m																	
>8m																	
NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Sand																	
2-4m																	
4-8m																	
>8m																	
Field ID	Lab Report Number	Sample Type	Location Code	Sampled Date Time													
MW01_230119	ES2301798	Normal	MW01	19/01/2023	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	-	-
MW02_230119	ES2301798	Normal	MW02	19/01/2023	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	-	-
QC102	ES2301798	Field D	MW02	19/01/2023	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2	-	-	-
QC202	957400	Interlab D	MW01	19/01/2023	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<5	<2	<2

Waste Classification Table

	Metals								Total Petroleum Hydrocarbons					Total Recoverable Hydrocarbons							Monocyclic Aromatic Hydrocarbons							Naphthalene				
	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Nickel TCLP	Zinc	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 (minus Naphthalene)(F2)	>C10-C16 fraction	>C16-C34 fraction	>C34-C40 fraction	>C10-C40 fraction (sum)	Benzene	Toluene	Ethylbenzene	m&p-Xylene	o-Xylene	Total Xylenes	Total BTEX	Naphthalene (VOC)	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ calc (Zero)	Benzo(a)pyrene TEQ calc(PQL)
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	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	mg/kg	mg/kg	mg/kg	mg/kg
LOR	5	1	2	5	5	0.1	2	0.1	5	10	50	100	100	50	10	10	50	50	100	100	50	0.2	0.5	0.5	0.5	0.5	0.5	0.2	1	0.5	0.5	0.5
NSW 2014 General Solid Waste CT1 (No Leaching)	100	20			100	4	40			650				10000								10	288	600			1000					
NSW 2014 General Solid Waste SCC1 (with leached)	500	100			1500	50	1050	2		650				10000								18	518	1080			1800					
NSW 2014 Restricted Solid Waste CT2 (No Leaching)	400	80			400	16	160			2600				40000								40	1152	2400			4000					
NSW 2014 Restricted Solid Waste SCC2 (with leached)	2000	400			6000	200	4200	8		2600				40000								72	2073	4320			7200					

Location Code	Field ID	Sample Depth	Range	Sampled Date	Time																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																												</
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Waste Classification Table

[illegible][illegible]

Waste Classification Table

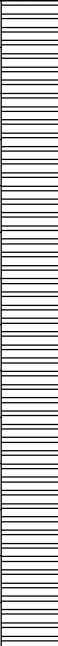
	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor epoxide	Hexachlorobenzene (HCB)	Methoxychlor	Toxaphene	Organochlorine pesticides (sum)	Other organochlorine pesticides (sum)	Asbestos			
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	APPROVED IDENTIFIER:	Asbestos fibres	Asbestos Type	Asbestos (Trace)
LOR	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.5	0.1	0.1	-	0.1	-	5
NSW 2014 General Solid Waste CT1 (No Leaching)														
NSW 2014 General Solid Waste SCC1 (with leached)														
NSW 2014 Restricted Solid Waste CT2 (No Leaching)														
NSW 2014 Restricted Solid Waste SCC2 (with leached)														

Location Code	Field ID	Sample Depth Range	Sampled Date Time															
BH03	BH03 0.2 230111	0.2	13/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	1	0	1	0	
BH03	BH03 1.3 23011	1.3	13/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	-	-	-	-	
BH03	QC101	0.2	13/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	-	-	-	-	
BH03	QC201	0.2	13/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	-	-	-	-	
BH04	BH04 0.3 230111	0.3	12/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	1	0	1	0	
BH05	BH05 0.3 230112	0.3	12/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	1	0	1	0	
BH06	BH06 0.2 230111	0.2	11/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	1	0	1	0	
BH06	BH06 0.6 230111	0.6	11/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	-	-	-	-	
BH07	BH07 0.2 230111	0.2	11/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	1	0	1	0	
BH07	BH07 0.7 230111	0.7	11/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	-	-	-	-	
BH08	BH08 0.2 230112	0.2	12/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	1	0	1	0	
BH08	BH08 0.7 230112	0.7	12/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	-	-	-	-	
BH09	BH09 0.2 230112	0.2	12/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	1	0	1	0	
BH10	BH10 0.7 230112	0.7	12/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	-	-	-	-	
BH11	BH11 0.2 230111	0.2	11/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	1	0	1	0	
BH12	BH12 0.8 230111	0.8	11/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	-	-	-	-	
BH13	BH13 0.2 230111	0.2	11/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	1	0	1	0	
BH13	BH13 1.0 230111	1	11/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	-	-	-	-	
BH13	QC100	1	11/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	-	-	-	-	
BH13	QC200	1	11/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1	-	-	-	-	
BH14	BH14 0.2 230111	0.2	11/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	1	0	1	0	
BH14	BH14 0.7 230111	0.7	11/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	-	-	-	-	
HA01	HA01 0.2 230111	0.2	13/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	1	0	1	0	
HA01	HA01 0.4 230111	0.4	13/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	-	-	-	-	
HA02	HA02 0.2 230111	0.2	13/01/2023	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-	1	0	1	0	

Appendix C

Borelogs

Client:	Goodman Property Services Australia Pty Ltd	Project No:	60694112	Start Date:	13/01/2023
Project:	Goodman Aquatic Drive P2 DSI	Logged by:	MT	End Date:	13/01/2023
Location:	Aquatic Drive, Frenchs Forest	Checked by:		Location Meth.:	0
Driller:	EPOCA	Easting:		Top of Casing:	
Drill Type:	hand auger, solid stem	Northing:		Ver. Datum:	AHD
Drill Model:		Hor. Proj/Dat:	MGA94/GDA94-55H	Surface:	Concrete
Drill Fluid:	-	Bore Dia.:	-	Permit No.:	

Drill Method	Casing	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	MATERIAL DESCRIPTION	Moisture	Consistency/ Relative Density	Sample Interval PID	Sample ID
HA	None		0			CLAY: medium plasticity, dark grey. Subangular sandstone cobble inclusions.	D	MD		
								 0.0	BH03_0.2	
SS			1			SAND: coarse grain, yellow. Medium plasticity, grey clay nodules.	L	 0.0	BH03_0.8	
SS			2			CLAY: low plasticity, light grey.	MD	 0.0	BH03_1.3	
						Grey/white				
						BH03 terminated at 2.90 m. Refusal				

Client:	Goodman Property Services Australia Pty Ltd	Project No:	60694112	Start Date:	12/01/2023
Project:	Goodman Aquatic Drive P2 DSI	Logged by:	MT	End Date:	12/01/2023
Location:	Aquatic Drive, Frenchs Forest	Checked by:	JR	Location Meth.:	0
Driller:	EPOCA	Easting:		Top of Casing:	
Drill Type:	hand auger, solid stem	Northing:		Ver. Datum:	AHD
Drill Model:		Hor. Proj/Dat:	MGA94/GDA94-55H	Surface:	Concrete
Drill Fluid:	-	Bore Dia.:	-	Permit No.:	

Drill Method	Casing	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	MATERIAL DESCRIPTION	Moisture	Consistency/Relative Density	Sample Interval	PID	Sample ID
HA	None		0		Cl	CLAY: medium plasticity, dark grey, orange with red mottle.	D	MD			
			1			Increasing density.					
SS						BH04 terminated at 1.50 m. Refusal					



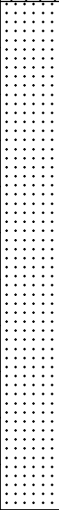
0.0

BH04_0.3

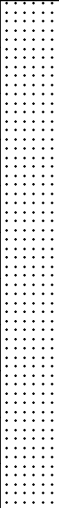
Client:	Goodman Property Services Australia Pty Ltd	Project No:	60694112	Start Date:	12/01/2023
Project:	Goodman Aquatic Drive P2 DSI	Logged by:	MT	End Date:	12/01/2023
Location:	Aquatic Drive, Frenchs Forest	Checked by:		Location Meth.:	0
Driller:	EPOCA	Easting:		Top of Casing:	
Drill Type:	hand auger, solid stem	Northing:		Ver. Datum:	AHD
Drill Model:		Hor. Proj/Dat:	MGA94/GDA94-55H	Surface:	Pavement (asphalt)
Drill Fluid:	-	Bore Dia.:	-	Permit No.:	

Drill Method	Casing	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	MATERIAL DESCRIPTION	Moisture	Consistency/Relative Density	Sample Interval PID	Sample ID
HA	None		0			Sandy CLAY: low plasticity, light brown. Coarse grain, light yellow sands. Subangular gravel inclusions. Sandstone cobble inclusions.	D	L		
						Yellow			0.0	BH05_0.3
SS			1		CL	CLAY: low plasticity, light orange.			0.0	BH05_0.9
						Brown				
						SANDSTONE: weathered, light pink.				
			2			BH05 terminated at 1.80 m. Refusal				

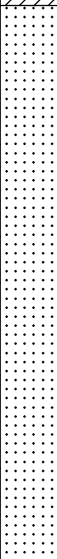
Client:	Goodman Property Services Australia Pty Ltd	Project No:	60694112	Start Date:	11/01/2023
Project:	Goodman Aquatic Drive P2 DSI	Logged by:	MT	End Date:	11/01/2023
Location:	Aquatic Drive, Frenchs Forest	Checked by:		Location Meth.:	0
Driller:	EPOCA	Easting:		Top of Casing:	
Drill Type:	hand auger, solid stem	Northing:		Ver. Datum:	AHD
Drill Model:		Hor. Proj/Dat:	MGA94/GDA94-55H	Surface:	Pavement (asphalt)
Drill Fluid:	-	Bore Dia.:	-	Permit No.:	

Drill Method	Casing	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	MATERIAL DESCRIPTION	Moisture	Consistency/Relative Density	Sample Interval PID	Sample ID
HA	None		0			Sandy CLAY: low plasticity, dark brown. Coarse grained, yellow sand. Subangular sandstone pebble and cobble inclusions.	D	L	 0.0	BH06_0.2
SS			1			SANDSTONE: light pink/purple.			 0.0	BH06_0.6
			2			BH06 terminated at 1.70 m. Refusal			 0.0	BH06_1.6

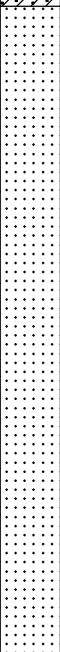
Client:	Goodman Property Services Australia Pty Ltd	Project No:	60694112	Start Date:	11/01/2023
Project:	Goodman Aquatic Drive P2 DSI	Logged by:	MT	End Date:	11/01/2023
Location:	Aquatic Drive, Frenchs Forest	Checked by:		Location Meth.:	0
Driller:	EPOCA	Easting:		Top of Casing:	
Drill Type:	hand auger, solid stem	Northing:		Ver. Datum:	AHD
Drill Model:		Hor. Proj/Dat:	MGA94/GDA94-55H	Surface:	Pavement (asphalt)
Drill Fluid:	-	Bore Dia.:	-	Permit No.:	

Drill Method	Casing	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	MATERIAL DESCRIPTION	Moisture	Consistency/Relative Density	Sample Interval PID	Sample ID
HA	None		0			Sandy CLAY: low plasticity, dark brown. Coarse grain, yellow sand. Subangular gravel and boulder inclusions.	D	L	 0.0	BH07_0.2
SS			1			SANDSTONE: light pink/purple.			 0.0	BH07_0.7
			2			BH07 terminated at 1.80 m. Refusal			 0.0	BH07_1.7

Client:	Goodman Property Services Australia Pty Ltd	Project No:	60694112	Start Date:	12/01/2023
Project:	Goodman Aquatic Drive P2 DSI	Logged by:	MT	End Date:	12/01/2023
Location:	Aquatic Drive, Frenchs Forest	Checked by:		Location Meth.:	0
Driller:	EPOCA	Easting:		Top of Casing:	
Drill Type:	hand auger, solid stem	Northing:		Ver. Datum:	AHD
Drill Model:		Hor. Proj/Dat:	MGA94/GDA94-55H	Surface:	Concrete
Drill Fluid:	-	Bore Dia.:	-	Permit No.:	

Drill Method	Casing	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	MATERIAL DESCRIPTION	Moisture	Consistency/Relative Density	Sample Interval	PID	Sample ID
HA	None		0			Sandy CLAY: medium plasticity, light brown. Coarse grain, pale yellow sand. Subangular sandstone gravel inclusions.	D	L		0.0	BH08_0.2
			1		CL	CLAY: low plasticity, light pink, grey mottle.				0.0	BH08_0.7
SS			2			SANDSTONE: weathered, pink/purple.					
						Firm.					
						BH08 terminated at 2.20 m. Refusal					

Client:	Goodman Property Services Australia Pty Ltd	Project No:	60694112	Start Date:	12/01/2023
Project:	Goodman Aquatic Drive P2 DSI	Logged by:	MT	End Date:	12/01/2023
Location:	Aquatic Drive, Frenchs Forest	Checked by:		Location Meth.:	0
Driller:	EPOCA	Easting:		Top of Casing:	
Drill Type:	hand auger, solid stem	Northing:		Ver. Datum:	AHD
Drill Model:		Hor. Proj/Dat:	MGA94/GDA94-55H	Surface:	Concrete
Drill Fluid:	-	Bore Dia.:	-	Permit No.:	

Drill Method	Casing	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	MATERIAL DESCRIPTION	Moisture	Consistency/Relative Density	Sample Interval	PID	Sample ID
HA	None		0			Sandy CLAY: low plasticity, light brown. Coarse grain, pale yellow sands. Subangular sandstone gravel inclusions.	D	L		0.0	BH09_0.2
SS			1			SANDSTONE: weathered, light pink.					
			2			BH09 terminated at 1.80 m. Refusal					

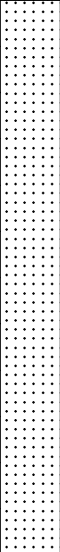
Client:	Goodman Property Services Australia Pty Ltd	Project No:	60694112	Start Date:	12/01/2023
Project:	Goodman Aquatic Drive P2 DSI	Logged by:	MT	End Date:	12/01/2023
Location:	Aquatic Drive, Frenchs Forest	Checked by:		Location Meth.:	0
Driller:	EPOCA	Easting:		Top of Casing:	
Drill Type:	hand auger	Northing:		Ver. Datum:	AHD
Drill Model:		Hor. Proj/Dat:	MGA94/GDA94-55H	Surface:	Concrete
Drill Fluid:	-	Bore Dia.:	-	Permit No.:	

Drill Method	Casing	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	MATERIAL DESCRIPTION	Moisture	Consistency/Relative Density	Sample Interval	PID	Sample ID
HA	None		0			Sandy CLAY: low plasticity, light pink. Coarse grain, pale yellow sand. Subangular sandstone cobble inclusions.	D	L		0.0	BH10_0.2
					CI	CLAY: medium plasticity, light grey.		MD		0.0	BH10_0.7
			1			BH10 terminated at 1.00 m. Refusal					
			2								

Client:	Goodman Property Services Australia Pty Ltd	Project No:	60694112	Start Date:	11/01/2023
Project:	Goodman Aquatic Drive P2 DSI	Logged by:	MT	End Date:	11/01/2023
Location:	Aquatic Drive, Frenchs Forest	Checked by:		Location Meth.:	0
Driller:	EPOCA	Easting:		Top of Casing:	
Drill Type:	hand auger, solid stem	Northing:		Ver. Datum:	AHD
Drill Model:		Hor. Proj/Dat:	MGA94/GDA94-55H	Surface:	Pavement (asphalt)
Drill Fluid:	-	Bore Dia.:	-	Permit No.:	

Drill Method	Casing	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	MATERIAL DESCRIPTION	Moisture	Consistency/Relative Density	Sample Interval PID	Sample ID
HA	None		0			Sandy CLAY: low plasticity, dark grey. Coarse grain, yellow sand. Subangular gravel inclusions.	D	L		
									0.2	BH11_0.2
					CL	CLAY: medium plasticity, orange, grey mottle.			0.8	BH11_0.8
			1			Firm.				
						SANDSTONE: weathered, pink/purple.			1.9	BH11_1.9
			2			BH11 terminated at 2.00 m. Refusal				

Client:	Goodman Property Services Australia Pty Ltd	Project No:	60694112	Start Date:	11/01/2023
Project:	Goodman Aquatic Drive P2 DSI	Logged by:	MT	End Date:	11/01/2023
Location:	Aquatic Drive, Frenchs Forest	Checked by:		Location Meth.:	0
Driller:	EPOCA	Easting:		Top of Casing:	
Drill Type:	hand auger, solid stem	Northing:		Ver. Datum:	AHD
Drill Model:		Hor. Proj/Dat:	MGA94/GDA94-55H	Surface:	Pavement (asphalt)
Drill Fluid:	-	Bore Dia.:	-	Permit No.:	

Drill Method	Casing	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	MATERIAL DESCRIPTION	Moisture	Consistency/Relative Density	Sample Interval PID	Sample ID
HA	None		0			Sandy CLAY: low plasticity, dark grey. Coarse grain, yellow sand. Subangular gravel and sandstone cobble inclusions.	D	L	 0.0	BH12_0.2
SS			1			SANDSTONE: weathered, light pink/purple.			 0.0	BH12_0.8
			2			BH12 terminated at 2.00 m. Refusal			 0.0	BH12_2.0

Permit No.:

Drill Method	Casing	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	MATERIAL DESCRIPTION	Moisture	Consistency/ Relative Density	Sample Interval PID	Sample ID
HA	None		0			Sandy CLAY: low plasticity, dark grey. Coarse grain, yellow sands. Subangular gravel and cobble inclusions.	D	L	 0.0	BH13_0.2
			1		CI	CLAY: medium plasticity, light orange, grey mottle. Firm, red/grey mottle.		 0.0	BH13_1.0	
			2				MD	 0.0	BH13_2.0	
						BH13 terminated at 2.10 m. Refusal				

Client:	Goodman Property Services Australia Pty Ltd	Project No:	60694112	Start Date:	13/01/2023
Project:	Goodman Aquatic Drive P2 DSI	Logged by:	MT	End Date:	13/01/2023
Location:	Aquatic Drive, Frenchs Forest	Checked by:		Location Meth.:	0
Driller:	EPOCA	Easting:		Top of Casing:	
Drill Type:	hand auger	Northing:		Ver. Datum:	AHD
Drill Model:		Hor. Proj/Dat:	MGA94/GDA94-55H	Surface:	Grass
Drill Fluid:	-	Bore Dia.:	-	Permit No.:	

Drill Method	Casing	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	MATERIAL DESCRIPTION	Moisture	Consistency/Relative Density	Sample Interval PID	Sample ID
HA	None		0			Sandy CLAY: low plasticity, dark brown. Coarse grain, light brown sands. Subangular gravel inclusions.	D	L		
					CL	CLAY: low plasticity, dark brown.			0.0	HA01_0.2
			1			Pale yellow			0.0	HA01_0.4
						Off white			0.0	HA01_1.3
			2			HA01 terminated at 1.40 m. Refusal		MD		

Client:	Goodman Property Services Pty Ltd	Project No:	60694112	Start Date:	13/01/2023
Project:	60694112	Logged by:	MT	End Date:	13/01/2023
Location:	Frenchs Forest	Checked by:		Location Meth.:	0
Driller:	EPOCA	Easting:		Top of Casing:	
Drill Type:	hand auger	Northing:		Ver. Datum:	AHD
Drill Model:		Hor. Proj/Dat:	MGA94/GDA94-55H	Surface:	Grass
Drill Fluid:	-	Total Depth:	1.60 m	Permit No.:	
		Bore Dia.:	-		

Drill Method	Casing	Groundwater Data and Comments	Depth (m)	Graphic Log	Classification	MATERIAL DESCRIPTION	Moisture	Consistency/Relative Density	Sample Interval PID	Sample ID
HA	None		0			Sandy CLAY: low plasticity, dark brown. Coarse grain, light brown sand. Subangular sandstone gravel inclusions.	D	L		
					CL	CLAY: low plasticity, dark grey.			0.0	HA02_0.2
			1			Pale yellow			0.0	HA02_0.4
						Pale/off white orange mottle				
								MD	0.0	HA02_1.5
			2			HA02 terminated at 1.60 m. Target depth				

Client:	Goodman Property Services Australia Pty Ltd	Project No:	60694112	Start Date:	11/01/2023
Project:	Goodman Aquatic Drive P2 DSI	Logged by:	MT	End Date:	11/01/2023
Location:	Aquatic Drive, Frenchs Forest	Checked by:	JR	Location Meth.:	0
Driller:	EPOCA	Easting:		Top of Casing:	
Drill Type:	hand auger, push tube	Northing:		Ver. Datum:	AHD
Drill Model:		Hor. Proj/Dat:	MGA94/GDA94-55H	Surface:	Pavement (asphalt)
Drill Fluid:	-	Total Depth:	5.10 m	Permit No.:	
		Bore Dia.:	-		

Drill Method	Sample Interval XRF (ppm)	Sample ID	Graphic Log	Classification	MATERIAL DESCRIPTION	Moisture	Depth (m)	WELL CONSTRUCTION DETAILS
HA	0.0	BH14_0.2			Sandy CLAY: low plasticity, dark grey. Coarse grain, yellow sand. Subangular gravel and sandstone inclusions.	D	0	0.0 to 0.1 m: Cover (flush)
	0.0	BH14_0.7		CI	Light grey. CLAY: medium plasticity, light orange, grey mottle. Bright orange.		1	0.1 to 1.7 m: Grout
PT	0.0	BH14_2.0			Light grey/white. Red mottle.		2	1.7 to 2.2 m: Bentonite
SS					SANDSTONE: weathered, purple/pink.		3	0.0 to 2.7 m: Solid Pipe
					Increasing density.		4	
					MW02/BH14 terminated at 5.10 m. Refusal		5	2.2 to 5.1 m: Sand
								2.7 to 5.1 m: Slotted Pipe

Remarks: 3.10 m: Surface water level.



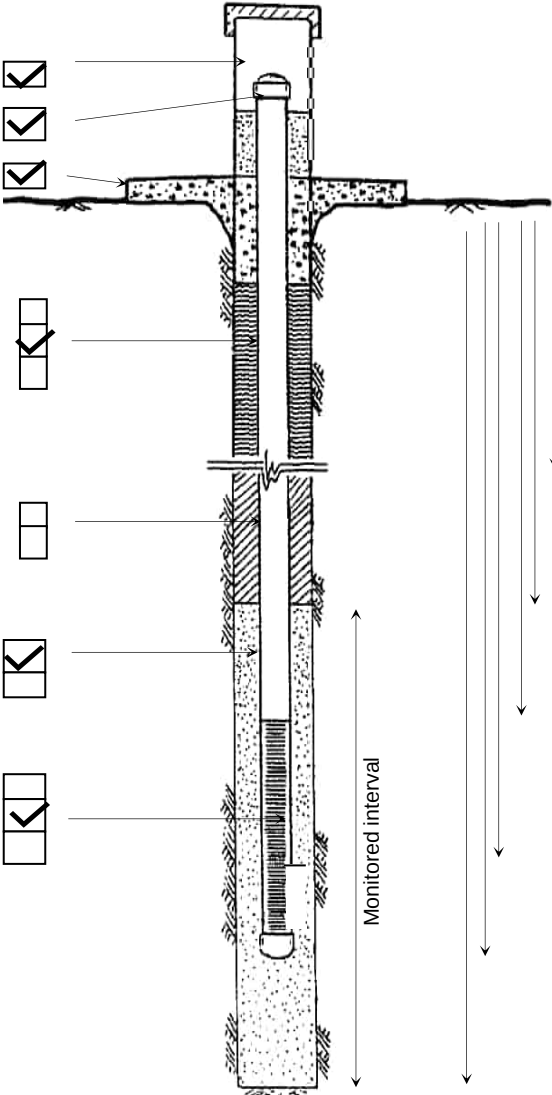
PIEZOMETER CONSTRUCTION RECORD

HOLE NUMBER: CBH01
PIEZOMETER:
COLLAR EASTING: 336722
COLLAR NORTHING: 6263731
COLLAR RL(m): 143.3
DATUM: AHD

DRILLING CONTRACTOR: JK Drilling
RIG: JK 400 Truck
DEPTH OF HOLE (m): 10.50
BOREHOLE INCLINATION: -90
PIEZO INSTALLATION DATE: 14/11/2022
SUPERVISED BY: JBL/GW

Tick boxes

Complete dimensions if appropriate

Steel protective well cover	☒		Height of stickup (m)	<u>0</u>
PVC cap	☒		Diameter of PVC (mm)	<u>63</u>
Concrete collar	☒			
Back fill type: Cement bentonite Soil None	☒		Depth to top of seal	<u>N/A</u>
Seal: Bentonite pellets Other	☐		Depth to top of gravel pack	<u>0.2m</u>
Gravel type: 2-5mm gravel Other	☒		Depth to top of screen	<u>1m</u>
Perforation type: Drill holes Hack saw cuts 40um machine slots	☒		Depth to base of screen	<u>10m</u>
			Depth to base of piezo	<u>10m</u>
			Depth to base of gravel	<u>10.5m</u>

COMMENTS:



Borehole ID

CBH01

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Engineering Log - Non Cored Borehole

Project No.: PSM4864

Client: Goodman Property Services Aus Pty Ltd		Commenced: 14/11/2022	
Project Name: Forestridge Business Park		Completed: 14/11/2022	
Hole Location:		Logged By: JBL/GW	
Hole Position: 336722.0 m E 6263731.0 m N MGA2020 Zone 56		Checked By:	
Drill Model and Mounting: JK 400 Truck Mounted		Inclination: -90°	
Hole Diameter: 110 mm		RL Surface: 143.30 m	
		Datum: AHD	
		Operator: JK Drilling	

Drilling Information				Soil Description						Observations				
Method	Penetration	Support	Water	Samples Tests Remarks	Recovery	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description SOIL NAME: Plasticity, behaviour or particle characteristics of primary component, colour, secondary components, additional observations	Moisture Condition	Consistency / Relative Density	Hand Penetrometer UCS (kPa)	Structure, Zoning, Origin, Additional Observations
DT		N								CONCRETE: 160mm thick				
									SW	SAND: fine to coarse grained, pale brown				0.16: Road base
				SPT 0.50-0.95 m 4,4,5 N=9		142.3	1		SC	Clayey SAND: fine to coarse grained, pale brown, clay is highly plastic, dark brown		L		0.50: INFERRED FILL
				SPT 1.50-1.95 m 2,1,1 N=2		141.3	2		CH	CLAY: high plasticity, brown to dark grey		S to F		
									CH	CLAY: high plasticity, pale grey		D		2.50: INFERRED RESIDUAL
				SPT 3.00-3.45 m 11,12,8 N=20		140.3	3					VSt		
										SANDSTONE: fine to coarse grained, pale grey, well graded, extremely to highly weathered, inferred very low to low strength.				3.85: V-Bit Refusal INFERRED BEDROCK
						139.3	4							
										Continued on cored borehole sheet				4.60: TC-Bit Refusal

Method AD/T - Auger drilling TC bit AD/V - Auger drilling V bit WB - Washbore SPT - Standard penetration test PT - Push tube AS - Auger screwing CT - Continuous push tube 1.5m long 76mm diameter	Penetration No resistance Refusal	Water Inflow Partial Loss Complete Loss	Samples and Tests U - Undisturbed Sample D - Disturbed Sample SPT - Standard Penetration Test ES - Environmental Sample TW - Thin Walled LB - Large Disturbed Sample	Moisture Condition D - Dry M - Moist W - Wet	Consistency/Relative Density VS - Very soft S - Soft F - Firm St - Stiff VSt - Very stiff H - Hard VL - Very loose L - Loose MD - Medium dense D - Dense VD - Very dense Ce - Cemented C - Compact
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Borehole ID

CBH01

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Engineering Log - Cored Borehole

Project No.: PSM4864

Client:	Goodman Property Services Aus Pty Ltd	Commenced:	14/11/2022
Project Name:	Forestridge Business Park	Completed:	14/11/2022
Hole Location:		Logged By:	JBL/GW
Hole Position:	336722.0 m E 6263731.0 m N MGA2020 Zone 56	Checked By:	

Drill Model and Mounting:	JK 400 Truck Mounted	Inclination:	-90°	RL Surface:	143.30 m		
Barrel Type and Length:	3 m	Bearing:		Datum:	AHD	Operator:	JK Drilling

Drilling Information							Rock Substance										Rock Mass Defects								
Method	Water	RQD (%)	Samples and Field Tests	WPT (Lugeons)	RL (m)	Depth (m)	Graphic Log	Material Description ROCK NAME: particle/grain characteristics, colour, fabric/texture, inclusions or minor components, moisture, mineral composition, alteration	Weathering					Strength Is(50) ● - Axial ○ - Diametral					Defect Spacing (mm)				Defect Descriptions / Comments Description, alpha/beta, infilling or coating, shape, roughness, thickness, other		
									XW	HW	MW	SW	FR	VL	L	M	H	VH	EH	<20	60	200	600	1000	
					142.3	1																			
					141.3	2																			
					140.3	3																			
					139.3	4																			
								Continued from non-cored borehole sheet																	
NMLC		95	Is(50) d=0.08 a=0.51 MPa					SANDSTONE: fine to coarse grained, grey to brown, thinly laminated sub-horizontally																	SM, CL, 100 mm BP, 5°, Fe & Clay, PR, RF, 5 mm

Method AD/T - Auger drilling TC bit AD/V - Auger drilling V bit WB - Washbore HQ3- Wireline core (63.5 mm) PQ3- Wireline core (85.0 mm) SPT- Standard penetration test PT - Push tube WPT - Water pressure test	Water ▽ Inflow △ Partial Loss ▲ Complete Loss Graphic Log/Core Loss Core recovered (hatching indicates material) No core recovery	Weathering XW - Extremely Weathered HW - Highly Weathered MW - Moderately Weathered SW - Slightly Weathered FR - Fresh Strength VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High	Defect Type FT - Fault SS - Shear Surface SZ - Shear Zone BP - Bedding parting SM - Seam IS - Infilled Seam JT - Joint CO - Contact CZ - Crushed Zone VN - Vein FZ - Fracture Zone BSH - Bedding Shear DB - Drilling Break	Infilling/Coating CN - Clean SN - Stain VN - Veneer CO - Coating RF - Rock fragments G - Gravel S - Sand Z - Silt CA - Calcite CL - Clay FE - Iron QZ - Quartz X - Carbonaceous	Roughness SL - Slickensided POL - Polished S - Smooth RF - Rough VR - Very Rough Shape PR - Planar CU - Curved UN - Undulating ST - Stepped IR - Irregular
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Borehole ID

CBH01

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Engineering Log - Cored Borehole

Project No.: PSM4864

Client: Goodman Property Services Aus Pty Ltd		Commenced: 14/11/2022																																				
Project Name: Forestridge Business Park		Completed: 14/11/2022																																				
Hole Location:		Logged By: JBL/GW																																				
Hole Position: 336722.0 m E 6263731.0 m N MGA2020 Zone 56		Checked By:																																				
Drill Model and Mounting: JK 400 Truck Mounted		Inclination: -90°																																				
Barrel Type and Length: 3 m		RL Surface: 143.30 m																																				
		Datum: AHD																																				
		Operator: JK Drilling																																				
Drilling Information						Rock Substance						Rock Mass Defects																										
Method	Water	RQD (%)	Samples and Field Tests	WPT (Lugeons)	RL (m)	Depth (m)	Graphic Log	Material Description ROCK NAME: particle/grain characteristics, colour, fabric/texture, inclusions or minor components, moisture, mineral composition, alteration	Weathering				Strength Is(50) ● - Axial ○ - Diametral				Defect Spacing (mm)				Defect Descriptions / Comments Description, alpha/beta, infilling or coating, shape, roughness, thickness, other																	
									XW	HW	MW	SW	FR	VL	L	M	H	VH	EH	<20	60	200	600	1000														
NMLC	75-100% Water RETURN	95	Is(50) d=0.28 a=0.36 MPa		137.3	6		SANDSTONE: fine to coarse grained, grey to brown, thinly laminated sub-horizontally(continued)																		BP, 5°, FE SN, PR, RF												
																											BP, 10°, FE SN, PR, RF											
			Is(50) d=0.78 a=0.75 MPa		136.3	7		Becoming grey																				BP, 0°, Fe & Clay, PR, RF, 3 mm SM, CL, 20 mm										
			Is(50) d=0.05 a=0.69 MPa		135.3	8		Siltstone laminations observed																				SM, CL, 40 mm										
			97	Is(50) d=0.74 a=0.58 MPa		134.3	9		Pervasive iron staining observed																				JT, 75°, CN, UN, RF, healed BP, 0°, CN, PR, RF									
			Is(50) d=0.68 a=0.63 MPa																								BP, 5°, FE SN, PR, RF											
																												BP, 0°, CL VN, PR, RF										
<table><tr><th>Method</th><th>Water</th><th>Weathering</th><th>Defect Type</th><th>Infilling/Coating</th><th>Roughness</th></tr><tr><td>AD/T - Auger drilling TC bit AD/V - Auger drilling V bit WB - Washbore HQ3- Wireline core (63.5 mm) PQ3- Wireline core (85.0 mm) SPT- Standard penetration test PT - Push tube WPT - Water pressure test</td><td>▽ Inflow △ Partial Loss ▲ Complete Loss Graphic Log/Core Loss Core recovered (hatching indicates material) No core recovery</td><td>XW - Extremely Weathered HW - Highly Weathered MW - Moderately Weathered SW - Slightly Weathered FR - Fresh Strength VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High</td><td>FT - Fault SS - Shear Surface SZ - Shear Zone BP - Bedding parting SM - Seam IS - Infilled Seam JT - Joint CO - Contact CZ - Crushed Zone VN - Vein FZ - Fracture Zone BSH - Bedding Shear DB - Drilling Break</td><td>CN - Clean SN - Stain VN - Veneer CO - Coating RF - Rock fragments G - Gravel S - Sand Z - Silt CA - Calcite CL - Clay FE - Iron QZ - Quartz X - Carbonaceous</td><td>SL - Slickensided POL - Polished S - Smooth RF - Rough VR - Very Rough Shape PR - Planar CU - Curved UN - Undulating ST - Stepped IR - Irregular</td></tr></table>																											Method	Water	Weathering	Defect Type	Infilling/Coating	Roughness	AD/T - Auger drilling TC bit AD/V - Auger drilling V bit WB - Washbore HQ3- Wireline core (63.5 mm) PQ3- Wireline core (85.0 mm) SPT- Standard penetration test PT - Push tube WPT - Water pressure test	▽ Inflow △ Partial Loss ▲ Complete Loss Graphic Log/Core Loss Core recovered (hatching indicates material) No core recovery	XW - Extremely Weathered HW - Highly Weathered MW - Moderately Weathered SW - Slightly Weathered FR - Fresh Strength VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High	FT - Fault SS - Shear Surface SZ - Shear Zone BP - Bedding parting SM - Seam IS - Infilled Seam JT - Joint CO - Contact CZ - Crushed Zone VN - Vein FZ - Fracture Zone BSH - Bedding Shear DB - Drilling Break	CN - Clean SN - Stain VN - Veneer CO - Coating RF - Rock fragments G - Gravel S - Sand Z - Silt CA - Calcite CL - Clay FE - Iron QZ - Quartz X - Carbonaceous	SL - Slickensided POL - Polished S - Smooth RF - Rough VR - Very Rough Shape PR - Planar CU - Curved UN - Undulating ST - Stepped IR - Irregular
Method	Water	Weathering	Defect Type	Infilling/Coating	Roughness																																	
AD/T - Auger drilling TC bit AD/V - Auger drilling V bit WB - Washbore HQ3- Wireline core (63.5 mm) PQ3- Wireline core (85.0 mm) SPT- Standard penetration test PT - Push tube WPT - Water pressure test	▽ Inflow △ Partial Loss ▲ Complete Loss Graphic Log/Core Loss Core recovered (hatching indicates material) No core recovery	XW - Extremely Weathered HW - Highly Weathered MW - Moderately Weathered SW - Slightly Weathered FR - Fresh Strength VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High	FT - Fault SS - Shear Surface SZ - Shear Zone BP - Bedding parting SM - Seam IS - Infilled Seam JT - Joint CO - Contact CZ - Crushed Zone VN - Vein FZ - Fracture Zone BSH - Bedding Shear DB - Drilling Break	CN - Clean SN - Stain VN - Veneer CO - Coating RF - Rock fragments G - Gravel S - Sand Z - Silt CA - Calcite CL - Clay FE - Iron QZ - Quartz X - Carbonaceous	SL - Slickensided POL - Polished S - Smooth RF - Rough VR - Very Rough Shape PR - Planar CU - Curved UN - Undulating ST - Stepped IR - Irregular																																	



Borehole ID

CBH01

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Engineering Log - Cored Borehole

Project No.: PSM4864

Client: Goodman Property Services Aus Pty Ltd		Commenced: 14/11/2022	
Project Name: Forestridge Business Park		Completed: 14/11/2022	
Hole Location:		Logged By: JBL/GW	
Hole Position: 336722.0 m E 6263731.0 m N MGA2020 Zone 56		Checked By:	
Drill Model and Mounting: JK 400 Truck Mounted		Inclination: -90°	
Barrel Type and Length: 3 m		Bearing:	
RL Surface: 143.30 m		Datum: AHD	
Operator: JK Drilling			

Drilling Information						Rock Substance										Rock Mass Defects									
Method	Water	RQD (%)	Samples and Field Tests	WPT (Lugeons)	RL (m)	Depth (m)	Graphic Log	Material Description ROCK NAME: particle/grain characteristics, colour, fabric/texture, inclusions or minor components, moisture, mineral composition, alteration	Weathering				Strength Is(50)						Defect Spacing (mm)				Defect Descriptions / Comments Description, alpha/beta, infilling or coating, shape, roughness, thickness, other		
									XW	HW	MW	SW	FR	VL	L	M	H	VH	EH	<20	60	200	600	1000	
NMLC		97	Is(50) d=0.67 a=0.43 MPa					SANDSTONE: fine to coarse grained, grey to brown, thinly laminated sub-horizontally(continued)																	
								Hole Terminated at 10.50 m Target depth																	
						11																			
						12																			
						13																			
						14																			

Method AD/T - Auger drilling TC bit AD/V - Auger drilling V bit WB - Washbore HQ3- Wireline core (63.5 mm) PQ3- Wireline core (85.0 mm) SPT- Standard penetration test PT - Push tube WPT - Water pressure test	Water ▽ Inflow △ Partial Loss ▲ Complete Loss Graphic Log/Core Loss Core recovered (hatching indicates material) No core recovery	Weathering XW - Extremely Weathered HW - Highly Weathered MW - Moderately Weathered SW - Slightly Weathered FR - Fresh Strength VL - Very Low L - Low M - Medium H - High VH - Very High EH - Extremely High	Defect Type FT - Fault SS - Shear Surface SZ - Shear Zone BP - Bedding parting SM - Seam IS - Infilled Seam JT - Joint CO - Contact CZ - Crushed Zone VN - Vein FZ - Fracture Zone BSH - Bedding Shear DB - Drilling Break	Infilling/Coating CN - Clean SN - Stain VN - Veneer CO - Coating RF - Rock fragments G - Gravel S - Sand Z - Silt CA - Calcite CL - Clay FE - Iron QZ - Quartz X - Carbonaceous	Roughness SL - Slickensided POL - Polished S - Smooth RF - Rough VR - Very Rough Shape PR - Planar CU - Curved UN - Undulating ST - Stepped IR - Irregular
--	---	--	--	---	---



CBH01 - 4.6 - 9.0 m

Note:

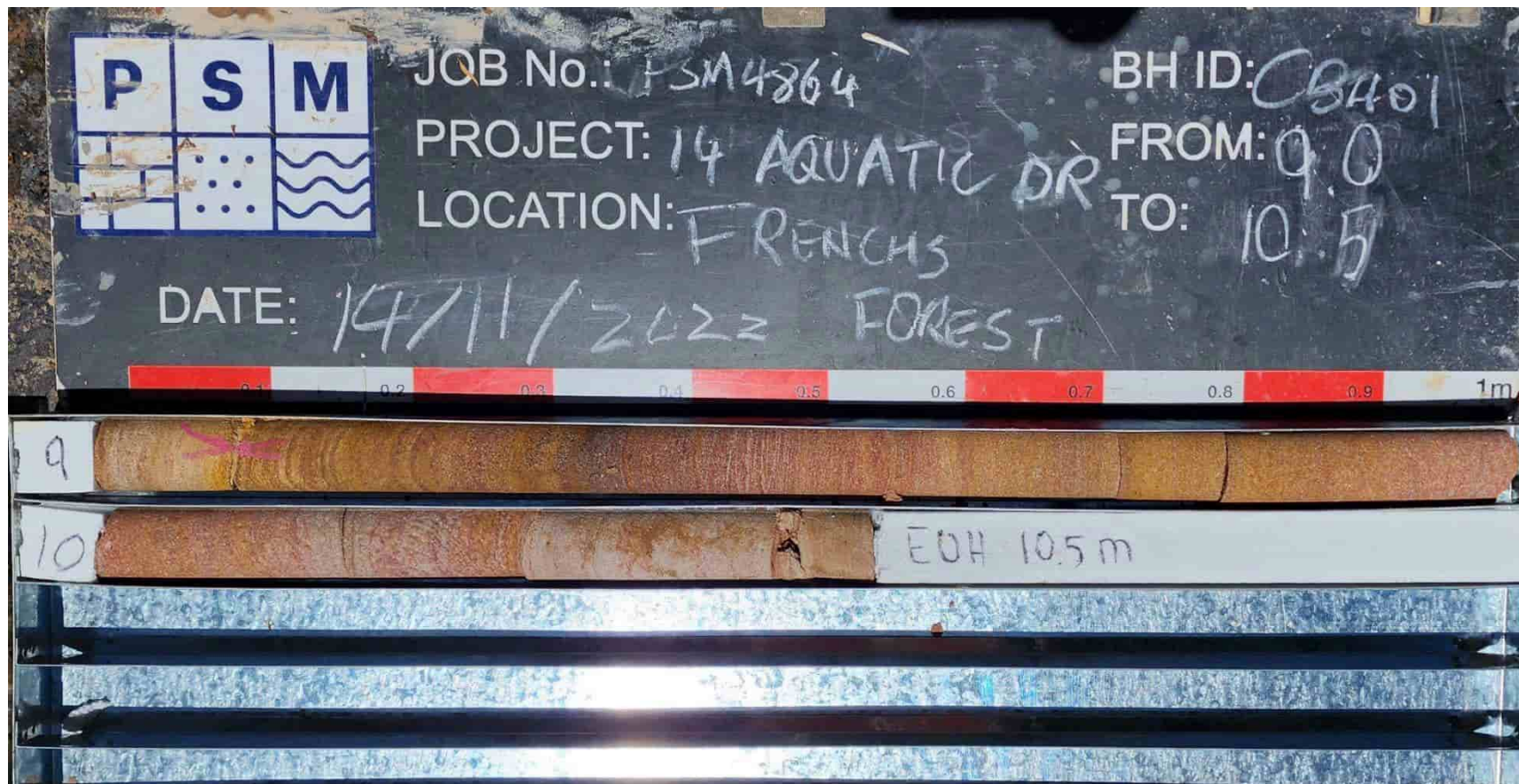
Defects are marked in red



Goodman Property Services Australia Pty Ltd
Forestridge Business Park
14 Aquatic Drive, Frenchs Forest
Geotechnical Investigation
Core Photograph

PSM4864-005R

Appendix B



CBH01 - 9.0 - 10.5 m

Note:

Defects are marked in red



Goodman Property Services Australia Pty Ltd
Forestridge Business Park
14 Aquatic Drive, Frenchs Forest
Geotechnical Investigation
Core Photograph

PSM4864-005R

Appendix B

Appendix D

Field Notes and Calibration Records

Certificate of Service and Calibration
Interface Meter
Heron H.Oil

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	Heron H.Oil Interface Meter (30m)
Serial Number	01-8272
Client Name	Matthew Taylor (AECOM Australia Pty Ltd)
Project Number	60694112 / 2.2

Instrument Check			
Item	Test	Test Passed	Comments
9V Battery	Klein Tools MM300 Multimeter	✓	Battery voltage reading above 7.9V
Battery Box	Check	✓	No damage
Face and Back Plates	Check	✓	No damage
Thumb Screws	Check	✓	Rubber ends intact
Tape Hangar/Protector	Check	✓	No damage
On/Off Button	Operation	✓	Button is functional
Buzzer	Operation	✓	Intermittent tone in H ₂ O, solid tone in product
LED Signal Light	Operation	✓	LED light functional – green and red
Probe	Operation/Check	✓	Decontaminated, cleaned and tested
Tape	Condition/Check	✓	Decontaminated and cleaned, no damage
Connection	Check	✓	Probe and link connected correctly and tightly
PCB	Operation	✓	Unit is fully functional
Electronics Panel	Orientation	✓	Correctly aligned

Instrument Readings		
Product	Buzzer	LED Light
H ₂ O	Intermittent	Blinking – Red
Petroleum	Solid	Steady – Red

Declaration
WAM Scientific certifies that the above instrument was successfully tested according to manufacturer's standards and all necessary checks were conducted to ensure the instrument was fully operational prior to dispatch. The interface meter was decontaminated, cleaned and tested with a mixture of tap water and petrol, shielded from ambient light.

Checked By	William Pak
Calibration Date	17/01/2023
Calibration Due	17/07/2023

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	YSI Professional Plus Water Quality Meter w/ 1m Quatro Cable
Serial Number	21A103776
Client Name	Matthew Taylor (AECOM Australia Pty Ltd)
Project Number	60694112 / 2.2
Comments	-

Instrument Check

Item	Test	Test Passed	Comments
2 x Alkaline C-size Batteries	Klein Tools MM300 Multimeter	✓	Both batteries reading above 2.9V
Battery Saver Function	Operation	✓	Automatically turns off after 60 minutes if idle
Unit Display	Operation	✓	Screen visible, no damage
Keypad	Operation	✓	Responsive, no damage
Connection Port and Cable	Condition/Check	✓	Clean, no damage
Monitor Housing	Condition/Check	✓	No damage
Firmware	Version	✓	4.0.0
pH Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
pH millivolts for pH 7.00	Calibration	✓	pH 7.00 calibration range between 0 mV $\pm$ 50 mV
pH millivolts for pH 4.00	Calibration	✓	pH 4 mV range +165 to +180 from 7 buffer mV value
pH slope	Calibration	✓	Range between 55 to 60 mV/pH (ideal value 59 mV)
Response time < 90 seconds	Calibration	✓	Responds to correct value within 90 seconds
ORP Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
ORP Reading	Calibration	✓	Within $\pm$ 80 mV of reference Zobell Reading
Response time < 90 seconds	Calibration	✓	Responds to correct value within 90 seconds
Conductivity/Temp Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
Conductivity Cell	Calibration	✓	Conductivity cell constant 5.0 $\pm$ 1.0 in GLP file
Clean Sensor Readings	Calibration	✓	Clean sensor reads less than 3 uS/cm in dry air
Dissolved Oxygen Probe	Condition/Calibration	✓	Calibrated and conforms to manufacturer's specs
DO Cap	Condition/Calibration	✓	1.25 mil PE membrane (yellow membrane)
DO Sensor in Use	Condition	✓	Polarographic DO sensor
DO Sensor Value	Calibration	✓	(min 4.31 uA - max 8.00 uA) Avg 6.15 uA

Instrument Readings

Parameter	Standard Used	Reference No.	Calibration Value	Observed	Actual	Units
Temperature	Centre 370 Thermometer	Room Temp.	26.7	26.5	26.7	°C
pH	pH 4.00	386466	4.01	4.98	4.01	pH
pH	pH 7.00	387329	7.00	6.96	7.00	pH
Conductivity	2760 μ S/cm at 25°C	388521	2760	2811	2760	μ S/cm
ORP (Ref. check only)	Zobell A & B	380835/382785	230.4	224.0	230.4	mV
Zero Dissolved O ₂	NaSO ₃ in Distilled H ₂ O	389912	0.0	1.8	0.0	%
100% Dissolved O ₂	100% Air Saturated H ₂ O	Fresh Air	100.0	94.0	100.0	%

7Declaration

WAM Scientific certifies that the above instrument was successfully tested according to manufacturer's standards and all necessary checks were conducted to ensure the instrument was fully operational prior to dispatch. The calibration data supplied was obtained in accordance with manufacturer's specifications using solutions of known values.

Calibrated By	William Pak
Calibration Date	16/01/2023
Calibration Due	16/07/2023

Certificate of Service and Calibration

Gas Detector
MiniRAE 3000

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	MiniRAE 3000 (PGM 7320)
Serial Number	592-926775
Client Name	Matthew Taylor (AECOM Australia Pty Ltd)
Project Number	60694112 / 2.2

Instrument Check			
Item	Test	Test Passed	Comments
Li-Ion Rechargeable Battery	Battery Charge and Drain	✓	Unit runs for > 8 hours on a full charge
Charger and Power Supply	Operation/Check	✓	No damage
Unit Display	Operation	✓	Screen visible, no damage
Keypad	Operation	✓	Responsive, no damage
Pump	Flow Check	✓	Flow rate > 0.5 L/min
Monitor Housing	Condition/Check	✓	No damage
Rubber Boot	Check	✓	Clean, no damage
Flexi Probe	Condition/Check	✓	No leaks, no damage
Water Trap Filter	Visual Check	✓	Clean
Alarms	Audible, Visual, Vibration Check	✓	All modes of alarms are functional
Data Logger	Operation	✓	Unit records data, default set at 60 seconds
Lamp and Sensor	Clean and Calibration	✓	Lamp and PID sensor cleaned and calibrated
PCB	Operation	✓	Unit is fully functional
Firmware	Version	✓	v2.20A

Instrument Readings					
Parameter	Calibration Gas	Concentration	Reference No.	Zero Reading	Span Reading
PID (10.6eV)	Isobutylene	100 ppm	WO233801-61	0 ppm	100.5 ppm

Declaration	
WAM Scientific certifies that the above instrument was successfully tested according to manufacturer's standards and all necessary checks were conducted to ensure the instrument was fully operational prior to dispatch. The calibration data supplied was obtained in accordance with manufacturer's specifications using gases of known concentrations.	

Calibrated By	William Pak
Calibration Date	11/01/2023
Calibration Due	11/07/2023

Certificate of Service and Calibration

Peristaltic Pump Geotech Geopump 2

Company Name	WAM Scientific
Office Address	26 Bungarra Crescent, Chipping Norton NSW 2170
Phone Number	+61 405 241 484
Contact Name	William Pak
Instrument	Geotech Geopump Peristaltic Pump
Cable Length	4.5m
Serial Number	Pump: 6231
Serial Number	Head: -
Client Name	Matthew Taylor (AECOM Australia Pty Ltd)
Project Number	60694112 / 2.2

Instrument Check			
Item	Test	Test Passed	Comments
2 x 12V Batteries	Klein Tools MM300 Multimeter	✓	Both batteries reading above 12V
Battery Terminals	Check	✓	No damage
Charger	Condition/Check	✓	Functioning
Cabling	Check	✓	No damage
Alligator Clips	Check	✓	Protected, no damage
Casing	Check	✓	Clean, no damage
Handle	Check	✓	No damage
Pump Head	Check	✓	EZ2 Head, no damage
Pump Condition	Decontamination	✓	Decontaminated
Pump Operation	Operation	✓	Peristaltic pump functional
Pump Tubing	Replacement	✓	New 0.5m ¼" OD LDPE silicon tubing
Pump Speed	Operation	✓	Speed knob functional

Inclusions
2 x Sealed lead acid 12V batteries included 1x Carry case for 12V batteries included 1x Intrinsically safe charger (clips) included

Declaration
WAM Scientific certifies that the above instrument was successfully tested according to manufacturer's standards and all necessary checks were conducted to ensure the instrument was fully operational prior to dispatch. The pump has been decontaminated and cleaned upon return from the previous hire and is in good working order.

Checked By	William Pak
Calibration Date	16/01/2023
Calibration Due	16/07/2023

Appendix E

Data Validation

Project number:	60694112	Validation by:	M. Taylor	Date: 01-Feb-2023
Client:	Goodman Property Services (Australia) Pty Ltd			
Site:	Aquatic Drive, Frenchs Forest			
Matrix type:	Soil Groundwater	Data verified by:	S. Randall	Date: 02-Feb-2023
# Primary Samples:	36 (soil)			
Laboratory:	ALS (primary) Eurofins (secondary)			
Lab reference:	ALS ES2301184 Eurofins 956722	Project Manager:	S. Randall	
Key Issues:	No QA/QC issues were identified in the field or laboratory datasets that could have a material implication to decision-making on the project.			
Field Quality Assurance and Quality Control				
Sampling personnel	Sampling was conducted by suitably qualified AECOM personnel, M. Taylor between 11 January 2022 to 13 January 2022.			
Sampling Methodology	Soil samples were collected by AECOM field staff via hand auger and solid stem auger.			
Chain of Custody (COC)	Chain of custody documents were completed by M. Taylor on 13 January 2023.			
Analysis Request	Laboratory analysis request and sample receipt notification reviewed and approved by M. Taylor and S. Randall.			
Intra-laboratory duplicate	One intra-laboratory duplicate sample was required to be submitted per 20 primary samples. ES2301184 Two intra-laboratory duplicates were collected and submitted to ALS for analysis.			
Inter-laboratory duplicate	One inter-laboratory duplicate sample was required to be submitted per 20 primary samples. 956722 Two intra-laboratory duplicates (2 soil, 1 groundwater) were collected and submitted to Eurofins for analysis.			
Rinsate Blank (RB)	One rinsate blank sample was collected per day of sampling and submitted for analysis for the purposes of quality control. Rinsate blank concentrations were below LOR for all analytes. Rinsate blank results are displayed in Table T2, Appendix E.			

Trip Blank (TB)	Trip blank analytical results were below LOR for all analytes reported, and are presented in Table T3, Appendix E .
Trip Spike (TS)	A soil trip spike and trip spike control were taken for this data set and results are discussed below in trip spike results.
Handling and preservation	Primary laboratory samples were received by ALS (<i>ES2235153</i>) in appropriate containers and slightly outside the recommended temperature range of $\leq 6^{\circ}\text{C}$ (at 9.3°C) with attempt to chill evident. The slight temperature exceedance is not expected to have material impacts on the accuracy of the data as samples were cooled with ice immediately after collection. This exceedance may be due to inadequate cooling time. Secondary laboratory samples were received by Eurofins (<i>929164</i>) in appropriate containers and not within the recommended temperature range of $\leq 6^{\circ}\text{C}$ as the Sample Receipt Advice states that there was no evidence of chilling. It is unclear what the receiving temperature was, whether it was marginally above or significantly above, to be conservative, the secondary results will only be considered following primary result interpretation.
Laboratory QA/QC	
Tests requested/reported	Samples were analysed and reported as requested on the COC.
Laboratory Accreditation	The laboratory analysis was conducted by ALS Environmental and Eurofins, both National Association of Testing Authorities (NATA) accredited laboratories for the analysis requested.
Holding time compliance	Samples were extracted and analysed within recommended holding times.
Frequency of Laboratory QC	The laboratory reported a sufficient frequency of quality control samples to assess whether the results have been reported to an acceptable accuracy and precision, with the exception of the following: <i>ES2301184</i> • Laboratory Duplicates (DUP) - PAH/phenols - Pesticides - TRH – Semivolatile Fraction • Matrix Spikes (MS) - PAH/phenols - Pesticides - TRH – Semivolatile Fraction
Method Blank (MB)	No MB outliers were detected in all samples analysed.

Laboratory Duplicate (DUP) Relative Percent Difference (RPD)	DUP RPDs were within acceptable control limits.
Laboratory Control Spike (LCS) Recoveries	LCS recoveries (where reported) were within control limits.
Matrix Spike (MS) Recoveries	MS recoveries (where reported) were within control limits.
Surrogate spike (SS) recovery	No SS recovery outliers were detected in samples analysed, with the exception of rinsate samples for: <i>ES2235153</i> • Dibromo-DDE • DEF The explanation for the SS recovery anomaly was due to recovery limits being below the lower data quality objective.
QA/QC Data Evaluation	
Comparison of ESdat data and Laboratory Results	No anomalous results between ESdat output data and laboratory analysis results were noted.
Limits of Reporting	LORs were sufficiently low to enable assessment against adopted guideline criteria.
Intra-laboratory duplicate RPDs BH13_1.0/QC100 BH03_0.2/QC101	The intra-laboratory duplicate RPDs were within acceptable control limits with the exception of the following: QC100: Chromium (RPD 67%), Moisture content (RPD 30%) QC101: Copper (RPD 130%), Nickel (RPD 55%), Zinc (RPD 43%) As the majority of the analytical results are within the same magnitude as the LOR value, slight differences will result in a greater RPD value. The elevated RPD value outlined above can be attributed to this.
Inter-laboratory duplicate RPDs BH13_1.0/QC200 BH03_0.2/QC201	The inter-laboratory duplicate RPDs were within acceptable control limits with the exception of the following: QC201: Copper (RPD 48%), Lead (RPD 33%), Zinc (RPD 51%) As the majority of the analytical results are within the same magnitude as the LOR value, slight differences will result in a greater RPD value. The elevated RPD values outlined above can be attributed to this. RPD calculations for both inter- and intra-laboratory duplicates are presented in Appendix E Table 1a : Soil RPD results and Appendix E Table 1b : Groundwater RPD results.
Rinsate Results	Rinsate blank concentrations were below LOR for all analytes.
Trip Spike Results	One trip spike sample and one trip control spike sample was collected for this event. Recoveries were within the target 70% - 130% indicating that volatilisation was minimal. Results are presented in Appendix E Table 4 : Soil QAQC results.
Trip Blank Results	Trip blank analytical results were below LOR for all analytes reported.

Comments

The identified exceptions to field and laboratory QA/QC are not anticipated to have material impacts to the overall precision, accuracy, representativeness, completeness and comparability of the data presented or the findings of the soil investigation with the exception of the inter-laboratory results which will only be considered following interpretation of the primary results.

Project number:	60694112	Validation by:	Jack Rawsthorne	Date: 02-Feb-2023
Client:	Goodman Property Services (Australia) Pty Ltd			
Site:	Aquatic Drive, Frenchs Forest			
Matrix type:	Groundwater	Data verified by:	S. Randall	Date: 02-Feb-2023
# Primary Samples:	2 (Water)			
Laboratory:	ALS (primary) Eurofins (secondary)			
Lab reference:	ALS ES2301798 Eurofins 957400	Project Manager:	S. Randall	
Key Issues:	No QA/QC issues were identified in the field or laboratory datasets that could have a material implication to decision-making on the project.			
Field Quality Assurance and Quality Control				
Sampling personnel	Sampling was conducted by suitably qualified AECOM personnel, M. Taylor on 19 January 2022.			
Sampling Methodology	Groundwater samples were collected by AECOM field staff via low flow peristaltic pump.			
Chain of Custody (COC)	Chain of custody documents were completed by M. Taylor on 19 January 2023.			
Analysis Request	Laboratory analysis request and sample receipt notification reviewed and approved by M. Taylor and S. Randall.			
Intra-laboratory duplicate	One intra-laboratory duplicate sample was required to be submitted per 20 primary samples. ES2301184 One intra-laboratory duplicate was collected and submitted to ALS for analysis.			
Inter-laboratory duplicate	One inter-laboratory duplicate sample was required to be submitted per 20 primary samples. 956722 One intra-laboratory duplicate was collected and submitted to Eurofins for analysis.			
Rinsate Blank (RB)	One rinsate blank sample was collected per day of sampling and submitted for analysis for the purposes of quality control. Rinsate blank concentrations were below LOR for all analytes. Rinsate blank results are displayed in Table T2b, Appendix E.			

Trip Blank (TB)	Trip blank analytical results were below LOR for all analytes reported, and are presented in Table T2b, Appendix E .
Trip Spike (TS)	A trip spike was taken for this data set and results are discussed below in trip spike results.
Handling and preservation	Primary laboratory samples were received by ALS (<i>ES2235153</i>) in appropriate containers and within the recommended temperature range of $\leq 6^{\circ}\text{C}$ (at 4.7°C) Secondary laboratory samples were received by Eurofins (<i>929164</i>) in appropriate containers and within the recommended temperature range of $\leq 6^{\circ}\text{C}$ (at 2.3°C)
Laboratory QAI/QC	
Tests requested/reported	Samples were analysed and reported as requested on the COC.
Laboratory Accreditation	The laboratory analysis was conducted by ALS Environmental and Eurofins, both National Association of Testing Authorities (NATA) accredited laboratories for the analysis requested.
Holding time compliance	Samples were extracted and analysed within recommended holding times.
Frequency of Laboratory QC	The laboratory reported a sufficient frequency of quality control samples to assess whether the results have been reported to an acceptable accuracy and precision, with the exception of the following: <i>ES2301798</i> • Laboratory Duplicates (DUP) - PAH/phenols - Pesticides - TRH – Semivolatile Fraction • Matrix Spikes (MS) - PAH/phenols - Pesticides - TRH – Semivolatile Fraction
Method Blank (MB)	No MB outliers were detected in all samples analysed.
Laboratory Duplicate (DUP) Relative Percent Difference (RPD)	DUP RPDs were within acceptable control limits.
Laboratory Control Spike (LCS) Recoveries	LCS recoveries (where reported) were within control limits.
Matrix Spike (MS) Recoveries	MS recoveries (where reported) were within control limits.

Surrogate spike (SS) recovery	No SS recovery outliers were detected in samples analysed, with the exception of the following: <i>ES2235153</i> • MW01_230119: Dibromo-DDE • MW01_230119: DEF • QC102: Dibromo-DDE • QC102: DEF • QC303_230119: Dibromo-DDE • QC303_230119: DEF The explanation for the SS recovery anomaly was due to recovery limits being below the lower data quality objective.
QA/QC Data Evaluation	
Comparison of ESdat data and Laboratory Results	No anomalous results between ESdat output data and laboratory analysis results were noted.
Limits of Reporting	LORs were sufficiently low to enable assessment against adopted guideline criteria.
Intra-laboratory duplicate RPDs MW02_230119/QC102	The intra-laboratory duplicate RPDs were within acceptable control limits with the exception of the following: QC102: Copper (RPD 67%) As the majority of the analytical results are within the same magnitude as the LOR value, slight differences will result in a greater RPD value. The elevated RPD value outlined above can be attributed to this.
Inter-laboratory duplicate RPDs MW01_230119/QC202	The inter-laboratory duplicate RPDs were within acceptable control limits with the exception of the following: QC202: Arsenic (RPD 50%), Copper (RPD 67%), TPH C15-28 (RPD 67%) TPH C10-36 (RPD 133%), TRH C16-34 (RPD 67%) and TRH C10-40 (RPD 89%) As the majority of the analytical results are within the same magnitude as the LOR value, slight differences will result in a greater RPD value. The elevated RPD values outlined above can be attributed to this with exception of TPH C10-36. Due to the elevated concentration in the secondary sample, decision making will be taken using the results from this sample. RPD calculations for both inter- and intra-laboratory duplicates are presented in Appendix E Table 1b: Groundwater RPD results.
Rinsate Results	Rinsate blank concentrations were below LOR for all analytes. Results are presented in Appendix E Table 2b.
Trip Spike Results	One trip spike sample and one trip control spike sample was collected for this event. Recoveries were within the target 70% - 130% indicating that volatilisation was minimal. Results are presented in Appendix E Table 3b.
Trip Blank Results	Trip blank analytical results were below LOR for all analytes reported.

Comments

The identified exceptions to field and laboratory QA/QC are not anticipated to have material impacts to the overall precision, accuracy, representativeness, completeness and comparability of the data presented or the findings of the soil investigation.

Soil RPD Table

Field Duplicates (SOIL)

Filter: Lab_Report_Number in('ES2301184')

Lab Report Number	ES2301184
Field ID	BH13_1.0_230111
Sampled Date/Time	11/01/2023 15:00

Chem_Group	ChemName	Units	EQL	
Metals	Arsenic	mg/kg	5 : 2 (Interlab)	<5
	Cadmium	mg/kg	1 : 0.4 (Interlab)	<1
	Chromium	mg/kg	2 : 5 (Interlab)	6
	Copper	mg/kg	5	<5
	Lead	mg/kg	5	13
	Mercury	mg/kg	0.1	<0.1
	Nickel	mg/kg	2 : 5 (Interlab)	<2
	Zinc	mg/kg	5	<5
Total Petroleum Hydrocarbons	C6-C9 fraction	mg/kg	10 : 20 (Interlab)	<10
	C10-C14 fraction	mg/kg	50 : 20 (Interlab)	<50
	C15-C28 fraction	mg/kg	100 : 50 (Interlab)	<100
	C29-C36 fraction	mg/kg	100 : 50 (Interlab)	<100
	C10-C36 fraction (sum)	mg/kg	50	<50
leum Hydrocarbons				
Total Recoverable Hydrocarbons	C6-C10 fraction	mg/kg	10 : 20 (Interlab)	<10
	C6-C10 fraction (minus BTEX)(F1)	mg/kg	10 : 20 (Interlab)	<10
	>C10-C16 (minus Naphthalene)(F2)	mg/kg	50	<50
	>C10-C16 fraction	mg/kg	50	<50
	>C16-C34 fraction	mg/kg	100	<100
	>C34-C40 fraction	mg/kg	100	<100
	>C10-C40 fraction (sum)	mg/kg	50 : 100 (Interlab)	<50
verable Hydrocarbons				
Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.2 : 0.1 (Interlab)	<0.2
	Toluene	mg/kg	0.5 : 0.1 (Interlab)	<0.5
	Ethylbenzene	mg/kg	0.5 : 0.1 (Interlab)	<0.5
	m&p-Xylene	mg/kg	0.5 : 0.2 (Interlab)	<0.5
	o-Xylene	mg/kg	0.5 : 0.1 (Interlab)	<0.5
	Total Xylenes	mg/kg	0.5 : 0.3 (Interlab)	<0.5
	Total BTEX	mg/kg	0.2	<0.2
Aromatic Hydrocarbons				
Naphthalene	Naphthalene (VOC)	mg/kg	1	<1
Polynuclear Aromatic Hydrocarbons	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5	0.6
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5	<0.5
	Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5	1.2
	Naphthalene	mg/kg	0.5	<0.5
	Acenaphthylene	mg/kg	0.5	<0.5
	Acenaphthene	mg/kg	0.5	<0.5
	Anthracene	mg/kg	0.5	<0.5
	Fluorene	mg/kg	0.5	<0.5
	Phenanthrene	mg/kg	0.5	<0.5
	Fluoranthene	mg/kg	0.5	<0.5
	Benz(a)anthracene	mg/kg	0.5	<0.5
	Benzo(k)fluoranthene	mg/kg	0.5	<0.5
	Benzo(b&j)fluoranthene	mg/kg	0.5	<0.5
	Benzo(a)pyrene	mg/kg	0.5	<0.5
	Chrysene	mg/kg	0.5	<0.5
	Pyrene	mg/kg	0.5	<0.5
	Benzo(g,h,i)perylene	mg/kg	0.5	<0.5
	Dibenz(a,h)anthracene	mg/kg	0.5	<0.5
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5	<0.5
	Sum of PAHs	mg/kg	0.5	<0.5
r Aromatic Hydrocarbons				
Phenolic Compounds	3/4-Methylphenol (m/p-cresol)	mg/kg	1	<1
	Phenol	mg/kg	0.5	<0.5
	2-Chlorophenol	mg/kg	0.5	<0.5
	2-Methylphenol (o-Cresol)	mg/kg	0.5 : 0.2 (Interlab)	<0.5
	2-Nitrophenol	mg/kg	0.5 : 1 (Interlab)	<0.5
	2,4-Dichlorophenol	mg/kg	0.5	<0.5
	2,4-Dimethylphenol	mg/kg	0.5	<0.5
	2,6-Dichlorophenol	mg/kg	0.5	<0.5
	4-Chloro-3-methylphenol	mg/kg	0.5 : 1 (Interlab)	<0.5
	2,4,6-Trichlorophenol	mg/kg	0.5 : 1 (Interlab)	<0.5
	2,4,5-Trichlorophenol	mg/kg	0.5 : 1 (Interlab)	<0.5
	Pentachlorophenol	mg/kg	2 : 1 (Interlab)	<2
omounds				
Physico-Chemical Parameters	Moisture Content	%	1	14.4
Chemical Parameters				
Organophosphorus Pesticides (OP)	Azinphos Methyl	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Bromophos-ethyl	mg/kg	0.05	<0.05

Soil RPD Table

Field Duplicates (SOIL)

Filter: Lab_Report_Number in('ES2301184')

Lab Report Number	ES2301184
Field ID	BH13_1.0_230111
Sampled Date/Time	11/01/2023 15:00

	Carbophenothion	mg/kg	0.05	<0.05
	Chlorfenvinphos	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Chlorpyrifos	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Chlorpyrifos-methyl	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Demeton-S-methyl	mg/kg	0.05	<0.05
	Diazinon	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Dichlorvos	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Dimethoate	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Ethion	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Fenamiphos	mg/kg	0.05	<0.05
	Fenthion	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Malathion	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Monocrotophos	mg/kg	0.2 : 2 (Interlab)	<0.2
	Parathion	mg/kg	0.2	<0.2
	Parathion-methyl	mg/kg	0.2	<0.2
	Pirimphos-ethyl	mg/kg	0.05	<0.05
	Prothiofos	mg/kg	0.05	<0.05
osphorus Pesticides (OP)				
Organochlorine Pesticides (OC)				
	Aldrin	mg/kg	0.05	<0.05
	Dieldrin	mg/kg	0.05	<0.05
	Aldrin + Dieldrin	mg/kg	0.05	<0.05
	a-BHC	mg/kg	0.05	<0.05
	b-BHC	mg/kg	0.05	<0.05
	d-BHC	mg/kg	0.05	<0.05
	g-BHC (Lindane)	mg/kg	0.05	<0.05
	cis-Chlordane	mg/kg	0.05	<0.05
	trans-Chlordane	mg/kg	0.05	<0.05
	Chlordane	mg/kg	0.05 : 0.1 (Interlab)	<0.05
	DDD	mg/kg	0.05	<0.05
	DDE	mg/kg	0.05	<0.05
	DDT	mg/kg	0.2 : 0.05 (Interlab)	<0.2
	DDT+DDE+DDD	mg/kg	0.05	<0.05
	Endosulfan	mg/kg	0.05	<0.05
	Endosulfan 1	mg/kg	0.05	<0.05
	Endosulfan 2	mg/kg	0.05	<0.05
	Endosulfan sulfate	mg/kg	0.05	<0.05
	Endrin	mg/kg	0.05	<0.05
	Endrin aldehyde	mg/kg	0.05	<0.05
	Endrin ketone	mg/kg	0.05	<0.05
	Heptachlor	mg/kg	0.05	<0.05
	Heptachlor epoxide	mg/kg	0.05	<0.05
	Hexachlorobenzene (HCB)	mg/kg	0.05	<0.05
	Methoxychlor	mg/kg	0.2 : 0.05 (Interlab)	<0.2

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-10 x EQL); 30 (10-20 x EQL); 30 (> 20 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to

Soil RPD Table

Field Duplicates (SOIL)

Filter: Lab_Report_Number in('ES2301184')

Lab Report Number	ES2301184	
Field ID	QC100	RPD
Sampled Date/Time	11/01/2023 15:00	

Chem_Group	ChemName	Units	EQL		
Metals	Arsenic	mg/kg	5 : 2 (Interlab)	<5	0
	Cadmium	mg/kg	1 : 0.4 (Interlab)	<1	0
	Chromium	mg/kg	2 : 5 (Interlab)	3	67
	Copper	mg/kg	5	<5	0
	Lead	mg/kg	5	12	8
	Mercury	mg/kg	0.1	<0.1	0
	Nickel	mg/kg	2 : 5 (Interlab)	<2	0
	Zinc	mg/kg	5	<5	0
Total Petroleum Hydrocarbons	C6-C9 fraction	mg/kg	10 : 20 (Interlab)	<10	0
	C10-C14 fraction	mg/kg	50 : 20 (Interlab)	<50	0
	C15-C28 fraction	mg/kg	100 : 50 (Interlab)	<100	0
	C29-C36 fraction	mg/kg	100 : 50 (Interlab)	<100	0
	C10-C36 fraction (sum)	mg/kg	50	<50	0
leum Hydrocarbons					
Total Recoverable Hydrocarbons	C6-C10 fraction	mg/kg	10 : 20 (Interlab)	<10	0
	C6-C10 fraction (minus BTEX)(F1)	mg/kg	10 : 20 (Interlab)	<10	0
	>C10-C16 (minus Naphthalene)(F2)	mg/kg	50	<50	0
	>C10-C16 fraction	mg/kg	50	<50	0
	>C16-C34 fraction	mg/kg	100	<100	0
	>C34-C40 fraction	mg/kg	100	<100	0
	>C10-C40 fraction (sum)	mg/kg	50 : 100 (Interlab)	<50	0
verable Hydrocarbons					
Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.2 : 0.1 (Interlab)	<0.2	0
	Toluene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	0
	Ethylbenzene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	0
	m&p-Xylene	mg/kg	0.5 : 0.2 (Interlab)	<0.5	0
	o-Xylene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	0
	Total Xylenes	mg/kg	0.5 : 0.3 (Interlab)	<0.5	0
	Total BTEX	mg/kg	0.2	<0.2	0
Aromatic Hydrocarbons					
Naphthalene	Naphthalene (VOC)	mg/kg	1	<1	0
Polynuclear Aromatic Hydrocarbons	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5	0.6	0
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5	<0.5	0
	Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5	1.2	0
	Naphthalene	mg/kg	0.5	<0.5	0
	Acenaphthylene	mg/kg	0.5	<0.5	0
	Acenaphthene	mg/kg	0.5	<0.5	0
	Anthracene	mg/kg	0.5	<0.5	0
	Fluorene	mg/kg	0.5	<0.5	0
	Phenanthrene	mg/kg	0.5	<0.5	0
	Fluoranthene	mg/kg	0.5	<0.5	0
	Benz(a)anthracene	mg/kg	0.5	<0.5	0
	Benzo(k)fluoranthene	mg/kg	0.5	<0.5	0
	Benzo(b&j)fluoranthene	mg/kg	0.5	<0.5	0
	Benzo(a)pyrene	mg/kg	0.5	<0.5	0
	Chrysene	mg/kg	0.5	<0.5	0
	Pyrene	mg/kg	0.5	<0.5	0
	Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	0
	Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	0
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5	<0.5	0
	Sum of PAHs	mg/kg	0.5	<0.5	0
r Aromatic Hydrocarbons					
Phenolic Compounds	3/4-Methylphenol (m/p-cresol)	mg/kg	1	<1	0
	Phenol	mg/kg	0.5	<0.5	0
	2-Chlorophenol	mg/kg	0.5	<0.5	0
	2-Methylphenol (o-Cresol)	mg/kg	0.5 : 0.2 (Interlab)	<0.5	0
	2-Nitrophenol	mg/kg	0.5 : 1 (Interlab)	<0.5	0
	2,4-Dichlorophenol	mg/kg	0.5	<0.5	0
	2,4-Dimethylphenol	mg/kg	0.5	<0.5	0
	2,6-Dichlorophenol	mg/kg	0.5	<0.5	0
	4-Chloro-3-methylphenol	mg/kg	0.5 : 1 (Interlab)	<0.5	0
	2,4,6-Trichlorophenol	mg/kg	0.5 : 1 (Interlab)	<0.5	0
	2,4,5-Trichlorophenol	mg/kg	0.5 : 1 (Interlab)	<0.5	0
	Pentachlorophenol	mg/kg	2 : 1 (Interlab)	<2	0
omounds					
Physico-Chemical Parameters	Moisture Content	%	1	10.6	30
Chemical Parameters					
Organophosphorus Pesticides (OP)	Azinphos Methyl	mg/kg	0.05 : 0.2 (Interlab)	<0.05	0
	Bromophos-ethyl	mg/kg	0.05	<0.05	0

Soil RPD Table

Field Duplicates (SOIL)
Filter: Lab Report Number in('ES2301184')

Lab Report Number	ES2301184	
Field ID	QC100	RPD
Sampled Date/Time	11/01/2023 15:00	

	Carbophenothion	mg/kg	0.05	<0.05	0
	Chlorfenvinphos	mg/kg	0.05 : 0.2 (Interlab)	<0.05	0
	Chlorpyrifos	mg/kg	0.05 : 0.2 (Interlab)	<0.05	0
	Chlorpyrifos-methyl	mg/kg	0.05 : 0.2 (Interlab)	<0.05	0
	Demeton-S-methyl	mg/kg	0.05	<0.05	0
	Diazinon	mg/kg	0.05 : 0.2 (Interlab)	<0.05	0
	Dichlorvos	mg/kg	0.05 : 0.2 (Interlab)	<0.05	0
	Dimethoate	mg/kg	0.05 : 0.2 (Interlab)	<0.05	0
	Ethion	mg/kg	0.05 : 0.2 (Interlab)	<0.05	0
	Fenamiphos	mg/kg	0.05	<0.05	0
	Fenthion	mg/kg	0.05 : 0.2 (Interlab)	<0.05	0
	Malathion	mg/kg	0.05 : 0.2 (Interlab)	<0.05	0
	Monocrotophos	mg/kg	0.2 : 2 (Interlab)	<0.2	0
	Parathion	mg/kg	0.2	<0.2	0
	Parathion-methyl	mg/kg	0.2	<0.2	0
	Pirimphos-ethyl	mg/kg	0.05	<0.05	0
	Prothiofos	mg/kg	0.05	<0.05	0
sphorus Pesticides (OP)					
Organochlorine Pesticides (OC)					
	Aldrin	mg/kg	0.05	<0.05	0
	Dieldrin	mg/kg	0.05	<0.05	0
	Aldrin + Dieldrin	mg/kg	0.05	<0.05	0
	a-BHC	mg/kg	0.05	<0.05	0
	b-BHC	mg/kg	0.05	<0.05	0
	d-BHC	mg/kg	0.05	<0.05	0
	g-BHC (Lindane)	mg/kg	0.05	<0.05	0
	cis-Chlordane	mg/kg	0.05	<0.05	0
	trans-Chlordane	mg/kg	0.05	<0.05	0
	Chlordane	mg/kg	0.05 : 0.1 (Interlab)	<0.05	0
	DDD	mg/kg	0.05	<0.05	0
	DDE	mg/kg	0.05	<0.05	0
	DDT	mg/kg	0.2 : 0.05 (Interlab)	<0.2	0
	DDT+DDE+DDD	mg/kg	0.05	<0.05	0
	Endosulfan	mg/kg	0.05	<0.05	0
	Endosulfan 1	mg/kg	0.05	<0.05	0
	Endosulfan 2	mg/kg	0.05	<0.05	0
	Endosulfan sulfate	mg/kg	0.05	<0.05	0
	Endrin	mg/kg	0.05	<0.05	0
	Endrin aldehyde	mg/kg	0.05	<0.05	0
	Endrin ketone	mg/kg	0.05	<0.05	0
	Heptachlor	mg/kg	0.05	<0.05	0
	Heptachlor epoxide	mg/kg	0.05	<0.05	0
	Hexachlorobenzene (HCB)	mg/kg	0.05	<0.05	0
	Methoxychlor	mg/kg	0.2 : 0.05 (Interlab)	<0.2	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EOL multiplier range are: 30 (1-10 x EOL); 30 (10-20 x EOL); 30 (20-30 x EOL); 30 (30-40 x EOL); 30 (40-50 x EOL); 30 (50-60 x EOL); 30 (60-70 x EOL); 30 (70-80 x EOL); 30 (80-90 x EOL); 30 (90-100 x EOL); 30 (100-110 x EOL); 30 (110-120 x EOL); 30 (120-130 x EOL); 30 (130-140 x EOL); 30 (140-150 x EOL); 30 (150-160 x EOL); 30 (160-170 x EOL); 30 (170-180 x EOL); 30 (180-190 x EOL); 30 (190-200 x EOL); 30 (200-210 x EOL); 30 (210-220 x EOL); 30 (220-230 x EOL); 30 (230-240 x EOL); 30 (240-250 x EOL); 30 (250-260 x EOL); 30 (260-270 x EOL); 30 (270-280 x EOL); 30 (280-290 x EOL); 30 (290-300 x EOL); 30 (300-310 x EOL); 30 (310-320 x EOL); 30 (320-330 x EOL); 30 (330-340 x EOL); 30 (340-350 x EOL); 30 (350-360 x EOL); 30 (360-370 x EOL); 30 (370-380 x EOL); 30 (380-390 x EOL); 30 (390-400 x EOL); 30 (400-410 x EOL); 30 (410-420 x EOL); 30 (420-430 x EOL); 30 (430-440 x EOL); 30 (440-450 x EOL); 30 (450-460 x EOL); 30 (460-470 x EOL); 30 (470-480 x EOL); 30 (480-490 x EOL); 30 (490-500 x EOL); 30 (500-510 x EOL); 30 (510-520 x EOL); 30 (520-530 x EOL); 30 (530-540 x EOL); 30 (540-550 x EOL); 30 (550-560 x EOL); 30 (560-570 x EOL); 30 (570-580 x EOL); 30 (580-590 x EOL); 30 (590-600 x EOL); 30 (600-610 x EOL); 30 (610-620 x EOL); 30 (620-630 x EOL); 30 (630-640 x EOL); 30 (640-650 x EOL); 30 (650-660 x EOL); 30 (660-670 x EOL); 30 (670-680 x EOL); 30 (680-690 x EOL); 30 (690-700 x EOL); 30 (700-710 x EOL); 30 (710-720 x EOL); 30 (720-730 x EOL); 30 (730-740 x EOL); 30 (740-750 x EOL); 30 (750-760 x EOL); 30 (760-770 x EOL); 30 (770-780 x EOL); 30 (780-790 x EOL); 30 (790-800 x EOL); 30 (800-810 x EOL); 30 (810-820 x EOL); 30 (820-830 x EOL); 30 (830-840 x EOL); 30 (840-850 x EOL); 30 (850-860 x EOL); 30 (860-870 x EOL); 30 (870-880 x EOL); 30 (880-890 x EOL); 30 (890-900 x EOL); 30 (900-910 x EOL); 30 (910-920 x EOL); 30 (920-930 x EOL); 30 (930-940 x EOL); 30 (940-950 x EOL); 30 (950-960 x EOL); 30 (960-970 x EOL); 30 (970-980 x EOL); 30 (980-990 x EOL); 30 (990-1000 x EOL); 30 (1000-1010 x EOL); 30 (1010-1020 x EOL); 30 (1020-1030 x EOL); 30 (1030-1040 x EOL); 30 (1040-1050 x EOL); 30 (1050-1060 x EOL); 30 (1060-1070 x EOL); 30 (1070-1080 x EOL); 30 (1080-1090 x EOL); 30 (1090-1100 x EOL); 30 (1100-1110 x EOL); 30 (1110-1120 x EOL); 30 (1120-1130 x EOL); 30 (1130-1140 x EOL); 30 (1140-1150 x EOL); 30 (1150-1160 x EOL); 30 (1160-1170 x EOL); 30 (1170-1180 x EOL); 30 (1180-1190 x EOL); 30 (1190-1200 x EOL); 30 (1200-1210 x EOL); 30 (1210-1220 x EOL); 30 (1220-1230 x EOL); 30 (1230-1240 x EOL); 30 (1240-1250 x EOL); 30 (1250-1260 x EOL); 30 (1260-1270 x EOL); 30 (1270-1280 x EOL); 30 (1280-1290 x EOL); 30 (1290-1300 x EOL); 30 (1300-1310 x EOL); 30 (1310-1320 x EOL); 30 (1320-1330 x EOL); 30 (1330-1340 x EOL); 30 (1340-1350 x EOL); 30 (1350-1360 x EOL); 30 (1360-1370 x EOL); 30 (1370-1380 x EOL); 30 (1380-1390 x EOL); 30 (1390-1400 x EOL); 30 (1400-1410 x EOL); 30 (1410-1420 x EOL); 30 (1420-1430 x EOL); 30 (1430-1440 x EOL); 30 (1440-1450 x EOL); 30 (1450-1460 x EOL); 30 (1460-1470 x EOL); 30 (1470-1480 x EOL); 30 (1480-1490 x EOL); 30 (1490-1500 x EOL); 30 (1500-1510 x EOL); 30 (1510-1520 x EOL); 30 (1520-1530 x EOL); 30 (1530-1540 x EOL); 30 (1540-1550 x EOL); 30 (1550-1560 x EOL); 30 (1560-1570 x EOL); 30 (1570-1580 x EOL); 30 (1580-1590 x EOL); 30 (1590-1600 x EOL); 30 (1600-1610 x EOL); 30 (1610-1620 x EOL); 30 (1620-1630 x EOL); 30 (1630-1640 x EOL); 30 (1640-1650 x EOL); 30 (1650-1660 x EOL); 30 (1660-1670 x EOL); 30 (1670-1680 x EOL); 30 (1680-1690 x EOL); 30 (1690-1700 x EOL); 30 (1700-1710 x EOL); 30 (1710-1720 x EOL); 30 (1720-1730 x EOL); 30 (1730-1740 x EOL); 30 (1740-1750 x EOL); 30 (1750-1760 x EOL); 30 (1760-1770 x EOL); 30 (1770-1780 x EOL); 30 (1780-1790 x EOL); 30 (1790-1800 x EOL); 30 (1800-1810 x EOL); 30 (1810-1820 x EOL); 30 (1820-1830 x EOL); 30 (1830-1840 x EOL); 30 (1840-1850 x EOL); 30 (1850-1860 x EOL); 30 (1860-1870 x EOL); 30 (1870-1880 x EOL); 30 (1880-1890 x EOL); 30 (1890-1900 x EOL); 30 (1900-1910 x EOL); 30 (1910-1920 x EOL); 30 (1920-1930 x EOL); 30 (1930-1940 x EOL); 30 (1940-1950 x EOL); 30 (1950-1960 x EOL); 30 (1960-1970 x EOL); 30 (1970-1980 x EOL); 30 (1980-1990 x EOL); 30 (1990-2000 x EOL); 30 (2000-2010 x EOL); 30 (2010-2020 x EOL); 30 (2020-2030 x EOL); 30 (2030-2040 x EOL); 30 (2040-2050 x EOL); 30 (2050-2060 x EOL); 30 (2060-2070 x EOL); 30 (2070-2080 x EOL); 30 (2080-2090 x EOL); 30 (2090-2100 x EOL); 30 (2100-2110 x EOL); 30 (2110-2120 x EOL); 30 (2120-2130 x EOL); 30 (2130-2140 x EOL); 30 (2140-2150 x EOL); 30 (2150-2160 x EOL); 30 (2160-2170 x EOL); 30 (2170-2180 x EOL); 30 (2180-2190 x EOL); 30 (2190-2200 x EOL); 30 (2200-2210 x EOL); 30 (2210-2220 x EOL); 30 (2220-2230 x EOL); 30 (2230-2240 x EOL); 30 (2240-2250 x EOL); 30 (2250-2260 x EOL); 30 (2260-2270 x EOL); 30 (2270-2280 x EOL); 30 (2280-2290 x EOL); 30 (2290-2300 x EOL); 30 (2300-2310 x EOL); 30 (2310-2320 x EOL); 30 (2320-2330 x EOL); 30 (2330-2340 x EOL); 30 (2340-2350 x EOL); 30 (2350-2360 x EOL); 30 (2360-2370 x EOL); 30 (2370-2380 x EOL); 30 (2380-2390 x EOL); 30 (2390-2400 x EOL); 30 (2400-2410 x EOL); 30 (2410-2420 x EOL); 30 (2420-2430 x EOL); 30 (2430-2440 x EOL); 30 (2440-2450 x EOL); 30 (2450-2460 x EOL); 30 (2460-2470 x EOL); 30 (2470-2480 x EOL); 30 (2480-2490 x EOL); 30 (2490-2500 x EOL); 30 (2500-2510 x EOL); 30 (2510-2520 x EOL); 30 (2520

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in # to those used in the primary

Soil RPD Table

Field Duplicates (SOIL)

Filter: Lab_Report_Number in('ES2301184')

Lab Report Number	ES2301184
Field ID	BH03_0_2_230111
Sampled Date/Time	13/01/2023 15:00

Chem_Group	ChemName	Units	EQL	
Metals	Arsenic	mg/kg	5 : 2 (Interlab)	<5
	Cadmium	mg/kg	1 : 0.4 (Interlab)	<1
	Chromium	mg/kg	2 : 5 (Interlab)	13
	Copper	mg/kg	5	14
	Lead	mg/kg	5	21
	Mercury	mg/kg	0.1	<0.1
	Nickel	mg/kg	2 : 5 (Interlab)	4
	Zinc	mg/kg	5	22
Total Petroleum Hydrocarbons	C6-C9 fraction	mg/kg	10 : 20 (Interlab)	<10
	C10-C14 fraction	mg/kg	50 : 20 (Interlab)	<50
	C15-C28 fraction	mg/kg	100 : 50 (Interlab)	<100
	C29-C36 fraction	mg/kg	100 : 50 (Interlab)	<100
	C10-C36 fraction (sum)	mg/kg	50	<50
leum Hydrocarbons				
Total Recoverable Hydrocarbons	C6-C10 fraction	mg/kg	10 : 20 (Interlab)	<10
	C6-C10 fraction (minus BTEX)(F1)	mg/kg	10 : 20 (Interlab)	<10
	>C10-C16 (minus Naphthalene)(F2)	mg/kg	50	<50
	>C10-C16 fraction	mg/kg	50	<50
	>C16-C34 fraction	mg/kg	100	<100
	>C34-C40 fraction	mg/kg	100	<100
	>C10-C40 fraction (sum)	mg/kg	50 : 100 (Interlab)	<50
verable Hydrocarbons				
Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.2 : 0.1 (Interlab)	<0.2
	Toluene	mg/kg	0.5 : 0.1 (Interlab)	<0.5
	Ethylbenzene	mg/kg	0.5 : 0.1 (Interlab)	<0.5
	m&p-Xylene	mg/kg	0.5 : 0.2 (Interlab)	<0.5
	o-Xylene	mg/kg	0.5 : 0.1 (Interlab)	<0.5
	Total Xylenes	mg/kg	0.5 : 0.3 (Interlab)	<0.5
	Total BTEX	mg/kg	0.2	<0.2
Aromatic Hydrocarbons				
Naphthalene	Naphthalene (VOC)	mg/kg	1	<1
Polynuclear Aromatic Hydrocarbons	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5	0.6
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5	<0.5
	Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5	1.2
	Naphthalene	mg/kg	0.5	<0.5
	Acenaphthylene	mg/kg	0.5	<0.5
	Acenaphthene	mg/kg	0.5	<0.5
	Anthracene	mg/kg	0.5	<0.5
	Fluorene	mg/kg	0.5	<0.5
	Phenanthrene	mg/kg	0.5	<0.5
	Fluoranthene	mg/kg	0.5	<0.5
	Benz(a)anthracene	mg/kg	0.5	<0.5
	Benzo(k)fluoranthene	mg/kg	0.5	<0.5
	Benzo(b&j)fluoranthene	mg/kg	0.5	<0.5
	Benzo(a)pyrene	mg/kg	0.5	<0.5
	Chrysene	mg/kg	0.5	<0.5
	Pyrene	mg/kg	0.5	<0.5
	Benzo(g,h,i)perylene	mg/kg	0.5	<0.5
	Dibenz(a,h)anthracene	mg/kg	0.5	<0.5
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5	<0.5
	Sum of PAHs	mg/kg	0.5	<0.5
r Aromatic Hydrocarbons				
Phenolic Compounds	3/4-Methylphenol (m/p-cresol)	mg/kg	1	<1
	Phenol	mg/kg	0.5	<0.5
	2-Chlorophenol	mg/kg	0.5	<0.5
	2-Methylphenol (o-Cresol)	mg/kg	0.5 : 0.2 (Interlab)	<0.5
	2-Nitrophenol	mg/kg	0.5 : 1 (Interlab)	<0.5
	2,4-Dichlorophenol	mg/kg	0.5	<0.5
	2,4-Dimethylphenol	mg/kg	0.5	<0.5
	2,6-Dichlorophenol	mg/kg	0.5	<0.5
	4-Chloro-3-methylphenol	mg/kg	0.5 : 1 (Interlab)	<0.5
	2,4,6-Trichlorophenol	mg/kg	0.5 : 1 (Interlab)	<0.5
	2,4,5-Trichlorophenol	mg/kg	0.5 : 1 (Interlab)	<0.5
	Pentachlorophenol	mg/kg	2 : 1 (Interlab)	<2
ompounds				
Physico-Chemical Parameters	Moisture Content	%	1	16.3
Chemical Parameters				
Organophosphorus Pesticides (OP)	Azinphos Methyl	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Bromophos-ethyl	mg/kg	0.05	<0.05

Soil RPD Table

Field Duplicates (SOIL)

Filter: Lab_Report_Number in('ES2301184')

Lab Report Number	ES2301184
Field ID	BH03_0.2_230111
Sampled Date/Time	13/01/2023 15:00

	Carbophenothion	mg/kg	0.05	<0.05
	Chlorfenvinphos	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Chlorpyrifos	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Chlorpyrifos-methyl	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Demeton-S-methyl	mg/kg	0.05	<0.05
	Diazinon	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Dichlorvos	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Dimethoate	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Ethion	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Fenamiphos	mg/kg	0.05	<0.05
	Fenthion	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Malathion	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Monocrotophos	mg/kg	0.2 : 2 (Interlab)	<0.2
	Parathion	mg/kg	0.2	<0.2
	Parathion-methyl	mg/kg	0.2	<0.2
	Pirimphos-ethyl	mg/kg	0.05	<0.05
	Prothiofos	mg/kg	0.05	<0.05
sphorus Pesticides (OP)				
Organochlorine Pesticides (OC)				
	Aldrin	mg/kg	0.05	<0.05
	Dieldrin	mg/kg	0.05	<0.05
	Aldrin + Dieldrin	mg/kg	0.05	<0.05
	α-BHC	mg/kg	0.05	<0.05
	β-BHC	mg/kg	0.05	<0.05
	γ-BHC	mg/kg	0.05	<0.05
	γ-BHC (Lindane)	mg/kg	0.05	<0.05
	cis-Chlordane	mg/kg	0.05	<0.05
	trans-Chlordane	mg/kg	0.05	<0.05
	Chlordane	mg/kg	0.05 : 0.1 (Interlab)	<0.05
	DDD	mg/kg	0.05	<0.05
	DDE	mg/kg	0.05	<0.05
	DDT	mg/kg	0.2 : 0.05 (Interlab)	<0.2
	DDT+DDE+DDD	mg/kg	0.05	<0.05
	Endosulfan	mg/kg	0.05	<0.05
	Endosulfan 1	mg/kg	0.05	<0.05
	Endosulfan 2	mg/kg	0.05	<0.05
	Endosulfan sulfate	mg/kg	0.05	<0.05
	Endrin	mg/kg	0.05	<0.05
	Endrin aldehyde	mg/kg	0.05	<0.05
	Endrin ketone	mg/kg	0.05	<0.05
	Heptachlor	mg/kg	0.05	<0.05
	Heptachlor epoxide	mg/kg	0.05	<0.05
	Hexachlorobenzene (HCB)	mg/kg	0.05	<0.05
	Methoxychlor	mg/kg	0.2 : 0.05 (Interlab)	<0.2

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-10 x EQL); 30 (10-20 x EQL); 30 (20-100 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in y laboratory

Soil RPD Table

Field Duplicates (SOIL)

Filter: Lab_Report_Number in('ES2301184')

Lab Report Number	ES2301184	
Field ID	QC101	RPD
Sampled Date/Time	13/01/2023 15:00	

Chem_Group	ChemName	Units	EQL		
Metals	Arsenic	mg/kg	5 : 2 (Interlab)	<5	0
	Cadmium	mg/kg	1 : 0.4 (Interlab)	<1	0
	Chromium	mg/kg	2 : 5 (Interlab)	12	8
	Copper	mg/kg	5	66	130
	Lead	mg/kg	5	21	0
	Mercury	mg/kg	0.1	<0.1	0
	Nickel	mg/kg	2 : 5 (Interlab)	7	55
	Zinc	mg/kg	5	34	43
Total Petroleum Hydrocarbons	C6-C9 fraction	mg/kg	10 : 20 (Interlab)	<10	0
	C10-C14 fraction	mg/kg	50 : 20 (Interlab)	<50	0
	C15-C28 fraction	mg/kg	100 : 50 (Interlab)	<100	0
	C29-C36 fraction	mg/kg	100 : 50 (Interlab)	<100	0
	C10-C36 fraction (sum)	mg/kg	50	<50	0
Recoverable Hydrocarbons					
Total Recoverable Hydrocarbons	C6-C10 fraction	mg/kg	10 : 20 (Interlab)	<10	0
	C6-C10 fraction (minus BTEX)(F1)	mg/kg	10 : 20 (Interlab)	<10	0
	>C10-C16 (minus Naphthalene)(F2)	mg/kg	50	<50	0
	>C10-C16 fraction	mg/kg	50	<50	0
	>C16-C34 fraction	mg/kg	100	<100	0
	>C34-C40 fraction	mg/kg	100	<100	0
	>C10-C40 fraction (sum)	mg/kg	50 : 100 (Interlab)	<50	0
Monocyclic Aromatic Hydrocarbons					
Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.2 : 0.1 (Interlab)	<0.2	0
	Toluene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	0
	Ethylbenzene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	0
	m&p-Xylene	mg/kg	0.5 : 0.2 (Interlab)	<0.5	0
	o-Xylene	mg/kg	0.5 : 0.1 (Interlab)	<0.5	0
	Total Xylenes	mg/kg	0.5 : 0.3 (Interlab)	<0.5	0
	Total BTEX	mg/kg	0.2	<0.2	0
Aromatic Hydrocarbons					
Naphthalene	Naphthalene (VOC)	mg/kg	1	<1	0
Polynuclear Aromatic Hydrocarbons					
Polynuclear Aromatic Hydrocarbons	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5	0.6	0
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5	<0.5	0
	Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5	1.2	0
	Naphthalene	mg/kg	0.5	<0.5	0
	Acenaphthylene	mg/kg	0.5	<0.5	0
	Acenaphthene	mg/kg	0.5	<0.5	0
	Anthracene	mg/kg	0.5	<0.5	0
	Fluorene	mg/kg	0.5	<0.5	0
	Phenanthrene	mg/kg	0.5	<0.5	0
	Fluoranthene	mg/kg	0.5	<0.5	0
	Benz(a)anthracene	mg/kg	0.5	<0.5	0
	Benzo(k)fluoranthene	mg/kg	0.5	<0.5	0
	Benzo(b&j)fluoranthene	mg/kg	0.5	<0.5	0
	Benzo(a)pyrene	mg/kg	0.5	<0.5	0
	Chrysene	mg/kg	0.5	<0.5	0
	Pyrene	mg/kg	0.5	<0.5	0
	Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	0
	Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	0
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5	<0.5	0
	Sum of PAHs	mg/kg	0.5	<0.5	0
Phenolic Compounds					
Phenolic Compounds	3/4-Methylphenol (m/p-cresol)	mg/kg	1	<1	0
	Phenol	mg/kg	0.5	<0.5	0
	2-Chlorophenol	mg/kg	0.5	<0.5	0
	2-Methylphenol (o-Cresol)	mg/kg	0.5 : 0.2 (Interlab)	<0.5	0
	2-Nitrophenol	mg/kg	0.5 : 1 (Interlab)	<0.5	0
	2,4-Dichlorophenol	mg/kg	0.5	<0.5	0
	2,4-Dimethylphenol	mg/kg	0.5	<0.5	0
	2,6-Dichlorophenol	mg/kg	0.5	<0.5	0
	4-Chloro-3-methylphenol	mg/kg	0.5 : 1 (Interlab)	<0.5	0
	2,4,6-Trichlorophenol	mg/kg	0.5 : 1 (Interlab)	<0.5	0
	2,4,5-Trichlorophenol	mg/kg	0.5 : 1 (Interlab)	<0.5	0
	Pentachlorophenol	mg/kg	2 : 1 (Interlab)	<2	0
Physico-Chemical Parameters					
Physico-Chemical Parameters	Moisture Content	%	1	15.8	3
Organophosphorus Pesticides (OP)					
Organophosphorus Pesticides (OP)	Azinphos Methyl	mg/kg	0.05 : 0.2 (Interlab)	<0.05	0
	Bromophos-ethyl	mg/kg	0.05	<0.05	0

Soil RPD Table

Field Duplicates (SOIL)

Filter: Lab_Report_Number in('ES2301184')

Lab Report Number	ES2301184	
Field ID	QC101	RPD
Sampled Date/Time	13/01/2023 15:00	

	Carbophenothion	mg/kg	0.05	<0.05	0
	Chlorfenvinphos	mg/kg	0.05 : 0.2 (Interlab)	<0.05	0
	Chlorpyrifos	mg/kg	0.05 : 0.2 (Interlab)	<0.05	0
	Chlorpyrifos-methyl	mg/kg	0.05 : 0.2 (Interlab)	<0.05	0
	Demeton-S-methyl	mg/kg	0.05	<0.05	0
	Diazinon	mg/kg	0.05 : 0.2 (Interlab)	<0.05	0
	Dichlorvos	mg/kg	0.05 : 0.2 (Interlab)	<0.05	0
	Dimethoate	mg/kg	0.05 : 0.2 (Interlab)	<0.05	0
	Ethion	mg/kg	0.05 : 0.2 (Interlab)	<0.05	0
	Fenamiphos	mg/kg	0.05	<0.05	0
	Fenthion	mg/kg	0.05 : 0.2 (Interlab)	<0.05	0
	Malathion	mg/kg	0.05 : 0.2 (Interlab)	<0.05	0
	Monocrotophos	mg/kg	0.2 : 2 (Interlab)	<0.2	0
	Parathion	mg/kg	0.2	<0.2	0
	Parathion-methyl	mg/kg	0.2	<0.2	0
	Pirimphos-ethyl	mg/kg	0.05	<0.05	0
	Prothiofos	mg/kg	0.05	<0.05	0
sphorus Pesticides (OP)					
Organochlorine Pesticides (OC)					
	Aldrin	mg/kg	0.05	<0.05	0
	Dieldrin	mg/kg	0.05	<0.05	0
	Aldrin + Dieldrin	mg/kg	0.05	<0.05	0
	a-BHC	mg/kg	0.05	<0.05	0
	b-BHC	mg/kg	0.05	<0.05	0
	d-BHC	mg/kg	0.05	<0.05	0
	g-BHC (Lindane)	mg/kg	0.05	<0.05	0
	cis-Chlordane	mg/kg	0.05	<0.05	0
	trans-Chlordane	mg/kg	0.05	<0.05	0
	Chlordane	mg/kg	0.05 : 0.1 (Interlab)	<0.05	0
	DDD	mg/kg	0.05	<0.05	0
	DDE	mg/kg	0.05	<0.05	0
	DDT	mg/kg	0.2 : 0.05 (Interlab)	<0.2	0
	DDT+DDE+DDD	mg/kg	0.05	<0.05	0
	Endosulfan	mg/kg	0.05	<0.05	0
	Endosulfan 1	mg/kg	0.05	<0.05	0
	Endosulfan 2	mg/kg	0.05	<0.05	0
	Endosulfan sulfate	mg/kg	0.05	<0.05	0
	Endrin	mg/kg	0.05	<0.05	0
	Endrin aldehyde	mg/kg	0.05	<0.05	0
	Endrin ketone	mg/kg	0.05	<0.05	0
	Heptachlor	mg/kg	0.05	<0.05	0
	Heptachlor epoxide	mg/kg	0.05	<0.05	0
	Hexachlorobenzene (HCB)	mg/kg	0.05	<0.05	0
	Methoxychlor	mg/kg	0.2 : 0.05 (Interlab)	<0.2	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-10 x EQL); 30 (10-20 x EQL); 30 (20-100 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in t

Soil RPD Table

Field Duplicates (SOIL)

Filter: Lab_Report_Number in('ES2301184')

Lab Report Number	ES2301184
Field ID	BH13_1.0_230111
Sampled Date/Time	11/01/2023 15:00

Chem_Group	ChemName	Units	EQL	
Metals	Arsenic	mg/kg	5 : 2 (Interlab)	<5
	Cadmium	mg/kg	1 : 0.4 (Interlab)	<1
	Chromium	mg/kg	2 : 5 (Interlab)	6
	Copper	mg/kg	5	<5
	Lead	mg/kg	5	13
	Mercury	mg/kg	0.1	<0.1
	Nickel	mg/kg	2 : 5 (Interlab)	<2
	Zinc	mg/kg	5	<5
Total Petroleum Hydrocarbons	C6-C9 fraction	mg/kg	10 : 20 (Interlab)	<10
	C10-C14 fraction	mg/kg	50 : 20 (Interlab)	<50
	C15-C28 fraction	mg/kg	100 : 50 (Interlab)	<100
	C29-C36 fraction	mg/kg	100 : 50 (Interlab)	<100
	C10-C36 fraction (sum)	mg/kg	50	<50
leum Hydrocarbons				
Total Recoverable Hydrocarbons	C6-C10 fraction	mg/kg	10 : 20 (Interlab)	<10
	C6-C10 fraction (minus BTEX)(F1)	mg/kg	10 : 20 (Interlab)	<10
	>C10-C16 (minus Naphthalene)(F2)	mg/kg	50	<50
	>C10-C16 fraction	mg/kg	50	<50
	>C16-C34 fraction	mg/kg	100	<100
	>C34-C40 fraction	mg/kg	100	<100
	>C10-C40 fraction (sum)	mg/kg	50 : 100 (Interlab)	<50
verable Hydrocarbons				
Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.2 : 0.1 (Interlab)	<0.2
	Toluene	mg/kg	0.5 : 0.1 (Interlab)	<0.5
	Ethylbenzene	mg/kg	0.5 : 0.1 (Interlab)	<0.5
	m&p-Xylene	mg/kg	0.5 : 0.2 (Interlab)	<0.5
	o-Xylene	mg/kg	0.5 : 0.1 (Interlab)	<0.5
	Total Xylenes	mg/kg	0.5 : 0.3 (Interlab)	<0.5
	Total BTEX	mg/kg	0.2	<0.2
Aromatic Hydrocarbons				
Naphthalene	Naphthalene (VOC)	mg/kg	1	<1
Polynuclear Aromatic Hydrocarbons	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5	0.6
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5	<0.5
	Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5	1.2
	Naphthalene	mg/kg	0.5	<0.5
	Acenaphthylene	mg/kg	0.5	<0.5
	Acenaphthene	mg/kg	0.5	<0.5
	Anthracene	mg/kg	0.5	<0.5
	Fluorene	mg/kg	0.5	<0.5
	Phenanthrene	mg/kg	0.5	<0.5
	Fluoranthene	mg/kg	0.5	<0.5
	Benz(a)anthracene	mg/kg	0.5	<0.5
	Benzo(k)fluoranthene	mg/kg	0.5	<0.5
	Benzo(b&j)fluoranthene	mg/kg	0.5	<0.5
	Benzo(a)pyrene	mg/kg	0.5	<0.5
	Chrysene	mg/kg	0.5	<0.5
	Pyrene	mg/kg	0.5	<0.5
	Benzo(g,h,i)perylene	mg/kg	0.5	<0.5
	Dibenz(a,h)anthracene	mg/kg	0.5	<0.5
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5	<0.5
	Sum of PAHs	mg/kg	0.5	<0.5
r Aromatic Hydrocarbons				
Phenolic Compounds	3/4-Methylphenol (m/p-cresol)	mg/kg	1	<1
	Phenol	mg/kg	0.5	<0.5
	2-Chlorophenol	mg/kg	0.5	<0.5
	2-Methylphenol (o-Cresol)	mg/kg	0.5 : 0.2 (Interlab)	<0.5
	2-Nitrophenol	mg/kg	0.5 : 1 (Interlab)	<0.5
	2,4-Dichlorophenol	mg/kg	0.5	<0.5
	2,4-Dimethylphenol	mg/kg	0.5	<0.5
	2,6-Dichlorophenol	mg/kg	0.5	<0.5
	4-Chloro-3-methylphenol	mg/kg	0.5 : 1 (Interlab)	<0.5
	2,4,6-Trichlorophenol	mg/kg	0.5 : 1 (Interlab)	<0.5
	2,4,5-Trichlorophenol	mg/kg	0.5 : 1 (Interlab)	<0.5
	Pentachlorophenol	mg/kg	2 : 1 (Interlab)	<2
omounds				
Physico-Chemical Parameters	Moisture Content	%	1	14.4
Chemical Parameters				
Organophosphorus Pesticides (OP)	Azinphos Methyl	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Bromophos-ethyl	mg/kg	0.05	<0.05

Soil RPD Table

Field Duplicates (SOIL)

Filter: Lab_Report_Number in('ES2301184')

Lab Report Number	ES2301184
Field ID	BH13_1.0_230111
Sampled Date/Time	11/01/2023 15:00

	Carbophenothion	mg/kg	0.05	<0.05
	Chlorfenvinphos	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Chlorpyrifos	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Chlorpyrifos-methyl	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Demeton-S-methyl	mg/kg	0.05	<0.05
	Diazinon	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Dichlorvos	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Dimethoate	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Ethion	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Fenamiphos	mg/kg	0.05	<0.05
	Fenthion	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Malathion	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Monocrotophos	mg/kg	0.2 : 2 (Interlab)	<0.2
	Parathion	mg/kg	0.2	<0.2
	Parathion-methyl	mg/kg	0.2	<0.2
	Pirimphos-ethyl	mg/kg	0.05	<0.05
	Prothiofos	mg/kg	0.05	<0.05
osphorus Pesticides (OP)				
Organochlorine Pesticides (OC)				
	Aldrin	mg/kg	0.05	<0.05
	Dieldrin	mg/kg	0.05	<0.05
	Aldrin + Dieldrin	mg/kg	0.05	<0.05
	α-BHC	mg/kg	0.05	<0.05
	β-BHC	mg/kg	0.05	<0.05
	γ-BHC	mg/kg	0.05	<0.05
	γ-BHC (Lindane)	mg/kg	0.05	<0.05
	cis-Chlordane	mg/kg	0.05	<0.05
	trans-Chlordane	mg/kg	0.05	<0.05
	Chlordane	mg/kg	0.05 : 0.1 (Interlab)	<0.05
	DDD	mg/kg	0.05	<0.05
	DDE	mg/kg	0.05	<0.05
	DDT	mg/kg	0.2 : 0.05 (Interlab)	<0.2
	DDT+DDE+DDD	mg/kg	0.05	<0.05
	Endosulfan	mg/kg	0.05	<0.05
	Endosulfan 1	mg/kg	0.05	<0.05
	Endosulfan 2	mg/kg	0.05	<0.05
	Endosulfan sulfate	mg/kg	0.05	<0.05
	Endrin	mg/kg	0.05	<0.05
	Endrin aldehyde	mg/kg	0.05	<0.05
	Endrin ketone	mg/kg	0.05	<0.05
	Heptachlor	mg/kg	0.05	<0.05
	Heptachlor epoxide	mg/kg	0.05	<0.05
	Hexachlorobenzene (HCB)	mg/kg	0.05	<0.05
	Methoxychlor	mg/kg	0.2 : 0.05 (Interlab)	<0.2

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-10 x EQL); 30 (10-20 x EQL); 30 (20-100 x EQL)).

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in t

Soil RPD Table

Field Duplicates (SOIL)

Filter: Lab_Report_Number in('ES2301184')

Lab Report Number	956722	
Field ID	QC200	RPD
Sampled Date/Time	11/01/2023 15:00	

Chem_Group	ChemName	Units	EQL		
Metals	Arsenic	mg/kg	5 : 2 (Interlab)	2.7	0
	Cadmium	mg/kg	1 : 0.4 (Interlab)	<0.4	0
	Chromium	mg/kg	2 : 5 (Interlab)	7.1	17
	Copper	mg/kg	5	<5	0
	Lead	mg/kg	5	14	7
	Mercury	mg/kg	0.1	<0.1	0
	Nickel	mg/kg	2 : 5 (Interlab)	<5	0
	Zinc	mg/kg	5	6.4	25
Total Petroleum Hydrocarbons	C6-C9 fraction	mg/kg	10 : 20 (Interlab)	<20	0
	C10-C14 fraction	mg/kg	50 : 20 (Interlab)	<20	0
	C15-C28 fraction	mg/kg	100 : 50 (Interlab)	<50	0
	C29-C36 fraction	mg/kg	100 : 50 (Interlab)	<50	0
	C10-C36 fraction (sum)	mg/kg	50	<50	0
Recoverable Hydrocarbons					
Total Recoverable Hydrocarbons	C6-C10 fraction	mg/kg	10 : 20 (Interlab)	<20	0
	C6-C10 fraction (minus BTEX)(F1)	mg/kg	10 : 20 (Interlab)	<20	0
	>C10-C16 (minus Naphthalene)(F2)	mg/kg	50	<50	0
	>C10-C16 fraction	mg/kg	50	<50	0
	>C16-C34 fraction	mg/kg	100	<100	0
	>C34-C40 fraction	mg/kg	100	<100	0
	>C10-C40 fraction (sum)	mg/kg	50 : 100 (Interlab)	<100	0
Monocyclic Aromatic Hydrocarbons					
Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.2 : 0.1 (Interlab)	<0.1	0
	Toluene	mg/kg	0.5 : 0.1 (Interlab)	<0.1	0
	Ethylbenzene	mg/kg	0.5 : 0.1 (Interlab)	<0.1	0
	m&p-Xylene	mg/kg	0.5 : 0.2 (Interlab)	<0.2	0
	o-Xylene	mg/kg	0.5 : 0.1 (Interlab)	<0.1	0
	Total Xylenes	mg/kg	0.5 : 0.3 (Interlab)	<0.3	0
	Total BTEX	mg/kg	0.2		
Aromatic Hydrocarbons					
Naphthalene	Naphthalene (VOC)	mg/kg	1		
Polynuclear Aromatic Hydrocarbons					
Polynuclear Aromatic Hydrocarbons	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5	0.6	0
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5	<0.5	0
	Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5	1.2	0
	Naphthalene	mg/kg	0.5	<0.5	0
	Acenaphthylene	mg/kg	0.5	<0.5	0
	Acenaphthene	mg/kg	0.5	<0.5	0
	Anthracene	mg/kg	0.5	<0.5	0
	Fluorene	mg/kg	0.5	<0.5	0
	Phenanthrene	mg/kg	0.5	<0.5	0
	Fluoranthene	mg/kg	0.5	<0.5	0
	Benz(a)anthracene	mg/kg	0.5	<0.5	0
	Benzo(k)fluoranthene	mg/kg	0.5	<0.5	0
	Benzo(b&j)fluoranthene	mg/kg	0.5	<0.5	0
	Benzo(a)pyrene	mg/kg	0.5	<0.5	0
	Chrysene	mg/kg	0.5	<0.5	0
	Pyrene	mg/kg	0.5	<0.5	0
	Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	0
	Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	0
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5	<0.5	0
	Sum of PAHs	mg/kg	0.5	<0.5	0
Phenolic Compounds					
Phenolic Compounds	3/4-Methylphenol (m/p-cresol)	mg/kg	1		
	Phenol	mg/kg	0.5	<0.5	0
	2-Chlorophenol	mg/kg	0.5	<0.5	0
	2-Methylphenol (o-Cresol)	mg/kg	0.5 : 0.2 (Interlab)	<0.2	0
	2-Nitrophenol	mg/kg	0.5 : 1 (Interlab)	<1	0
	2,4-Dichlorophenol	mg/kg	0.5	<0.5	0
	2,4-Dimethylphenol	mg/kg	0.5	<0.5	0
	2,6-Dichlorophenol	mg/kg	0.5	<0.5	0
	4-Chloro-3-methylphenol	mg/kg	0.5 : 1 (Interlab)	<1	0
	2,4,6-Trichlorophenol	mg/kg	0.5 : 1 (Interlab)	<1	0
	2,4,5-Trichlorophenol	mg/kg	0.5 : 1 (Interlab)	<1	0
	Pentachlorophenol	mg/kg	2 : 1 (Interlab)	<1	0
Physico-Chemical Parameters					
Physico-Chemical Parameters	Moisture Content	%	1		
Organophosphorus Pesticides (OP)					
Organophosphorus Pesticides (OP)	Azinphos Methyl	mg/kg	0.05 : 0.2 (Interlab)	<0.2	0
	Bromophos-ethyl	mg/kg	0.05		

Soil RPD Table

Field Duplicates (SOIL)
Filter: Lab_Report_Number in('ES2301184')

Lab Report Number	956722	
Field ID	QC200	RPD
Sampled Date/Time	11/01/2023 15:00	

	Carbophenothion	mg/kg	0.05		
	Chlorfenvinphos	mg/kg	0.05 : 0.2 (Interlab)	<0.2	0
	Chlorpyrifos	mg/kg	0.05 : 0.2 (Interlab)	<0.2	0
	Chlorpyrifos-methyl	mg/kg	0.05 : 0.2 (Interlab)	<0.2	0
	Demeton-S-methyl	mg/kg	0.05		
	Diazinon	mg/kg	0.05 : 0.2 (Interlab)	<0.2	0
	Dichlorvos	mg/kg	0.05 : 0.2 (Interlab)	<0.2	0
	Dimethoate	mg/kg	0.05 : 0.2 (Interlab)	<0.2	0
	Ethion	mg/kg	0.05 : 0.2 (Interlab)	<0.2	0
	Fenamiphos	mg/kg	0.05		
	Fenthion	mg/kg	0.05 : 0.2 (Interlab)	<0.2	0
	Malathion	mg/kg	0.05 : 0.2 (Interlab)	<0.2	0
	Monocrotophos	mg/kg	0.2 : 2 (Interlab)	<2	0
	Parathion	mg/kg	0.2	<0.2	0
	Parathion-methyl	mg/kg	0.2	<0.2	0
	Pirimphos-ethyl	mg/kg	0.05		
	Prothiofos	mg/kg	0.05		
sphorus Pesticides (OP)					
Organochlorine Pesticides (OC)					
	Aldrin	mg/kg	0.05	<0.05	0
	Dieldrin	mg/kg	0.05	<0.05	0
	Aldrin + Dieldrin	mg/kg	0.05	<0.05	0
	a-BHC	mg/kg	0.05	<0.05	0
	b-BHC	mg/kg	0.05	<0.05	0
	d-BHC	mg/kg	0.05	<0.05	0
	g-BHC (Lindane)	mg/kg	0.05	<0.05	0
	cis-Chlordane	mg/kg	0.05		
	trans-Chlordane	mg/kg	0.05		
	Chlordane	mg/kg	0.05 : 0.1 (Interlab)	<0.1	0
	DDD	mg/kg	0.05	<0.05	0
	DDE	mg/kg	0.05	<0.05	0
	DDT	mg/kg	0.2 : 0.05 (Interlab)	<0.05	0
	DDT+DDE+DDD	mg/kg	0.05	<0.05	0
	Endosulfan	mg/kg	0.05		
	Endosulfan 1	mg/kg	0.05	<0.05	0
	Endosulfan 2	mg/kg	0.05	<0.05	0
	Endosulfan sulfate	mg/kg	0.05	<0.05	0
	Endrin	mg/kg	0.05	<0.05	0
	Endrin aldehyde	mg/kg	0.05	<0.05	0
	Endrin ketone	mg/kg	0.05	<0.05	0
	Heptachlor	mg/kg	0.05	<0.05	0
	Heptachlor epoxide	mg/kg	0.05	<0.05	0
	Hexachlorobenzene (HCB)	mg/kg	0.05	<0.05	0
	Methoxychlor	mg/kg	0.2 : 0.05 (Interlab)	<0.05	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-10 x EQL); 30 (10-20 x EQL); 30 (20-30 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in t

Soil RPD Table

Field Duplicates (SOIL)

Filter: Lab_Report_Number in('ES2301184')

Lab Report Number	ES2301184
Field ID	BH03_0_2_230111
Sampled Date/Time	13/01/2023 15:00

Chem_Group	ChemName	Units	EQL	
Metals	Arsenic	mg/kg	5 : 2 (Interlab)	<5
	Cadmium	mg/kg	1 : 0.4 (Interlab)	<1
	Chromium	mg/kg	2 : 5 (Interlab)	13
	Copper	mg/kg	5	14
	Lead	mg/kg	5	21
	Mercury	mg/kg	0.1	<0.1
	Nickel	mg/kg	2 : 5 (Interlab)	4
	Zinc	mg/kg	5	22
Total Petroleum Hydrocarbons	C6-C9 fraction	mg/kg	10 : 20 (Interlab)	<10
	C10-C14 fraction	mg/kg	50 : 20 (Interlab)	<50
	C15-C28 fraction	mg/kg	100 : 50 (Interlab)	<100
	C29-C36 fraction	mg/kg	100 : 50 (Interlab)	<100
	C10-C36 fraction (sum)	mg/kg	50	<50
leum Hydrocarbons				
Total Recoverable Hydrocarbons	C6-C10 fraction	mg/kg	10 : 20 (Interlab)	<10
	C6-C10 fraction (minus BTEX)(F1)	mg/kg	10 : 20 (Interlab)	<10
	>C10-C16 (minus Naphthalene)(F2)	mg/kg	50	<50
	>C10-C16 fraction	mg/kg	50	<50
	>C16-C34 fraction	mg/kg	100	<100
	>C34-C40 fraction	mg/kg	100	<100
	>C10-C40 fraction (sum)	mg/kg	50 : 100 (Interlab)	<50
verable Hydrocarbons				
Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.2 : 0.1 (Interlab)	<0.2
	Toluene	mg/kg	0.5 : 0.1 (Interlab)	<0.5
	Ethylbenzene	mg/kg	0.5 : 0.1 (Interlab)	<0.5
	m&p-Xylene	mg/kg	0.5 : 0.2 (Interlab)	<0.5
	o-Xylene	mg/kg	0.5 : 0.1 (Interlab)	<0.5
	Total Xylenes	mg/kg	0.5 : 0.3 (Interlab)	<0.5
	Total BTEX	mg/kg	0.2	<0.2
Aromatic Hydrocarbons				
Naphthalene	Naphthalene (VOC)	mg/kg	1	<1
Polynuclear Aromatic Hydrocarbons	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5	0.6
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5	<0.5
	Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5	1.2
	Naphthalene	mg/kg	0.5	<0.5
	Acenaphthylene	mg/kg	0.5	<0.5
	Acenaphthene	mg/kg	0.5	<0.5
	Anthracene	mg/kg	0.5	<0.5
	Fluorene	mg/kg	0.5	<0.5
	Phenanthrene	mg/kg	0.5	<0.5
	Fluoranthene	mg/kg	0.5	<0.5
	Benz(a)anthracene	mg/kg	0.5	<0.5
	Benzo(k)fluoranthene	mg/kg	0.5	<0.5
	Benzo(b&j)fluoranthene	mg/kg	0.5	<0.5
	Benzo(a)pyrene	mg/kg	0.5	<0.5
	Chrysene	mg/kg	0.5	<0.5
	Pyrene	mg/kg	0.5	<0.5
	Benzo(g,h,i)perylene	mg/kg	0.5	<0.5
	Dibenz(a,h)anthracene	mg/kg	0.5	<0.5
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5	<0.5
	Sum of PAHs	mg/kg	0.5	<0.5
r Aromatic Hydrocarbons				
Phenolic Compounds	3/4-Methylphenol (m/p-cresol)	mg/kg	1	<1
	Phenol	mg/kg	0.5	<0.5
	2-Chlorophenol	mg/kg	0.5	<0.5
	2-Methylphenol (o-Cresol)	mg/kg	0.5 : 0.2 (Interlab)	<0.5
	2-Nitrophenol	mg/kg	0.5 : 1 (Interlab)	<0.5
	2,4-Dichlorophenol	mg/kg	0.5	<0.5
	2,4-Dimethylphenol	mg/kg	0.5	<0.5
	2,6-Dichlorophenol	mg/kg	0.5	<0.5
	4-Chloro-3-methylphenol	mg/kg	0.5 : 1 (Interlab)	<0.5
	2,4,6-Trichlorophenol	mg/kg	0.5 : 1 (Interlab)	<0.5
	2,4,5-Trichlorophenol	mg/kg	0.5 : 1 (Interlab)	<0.5
	Pentachlorophenol	mg/kg	2 : 1 (Interlab)	<2
ompounds				
Physico-Chemical Parameters	Moisture Content	%	1	16.3
Chemical Parameters				
Organophosphorus Pesticides (OP)	Azinphos Methyl	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Bromophos-ethyl	mg/kg	0.05	<0.05

Soil RPD Table

Field Duplicates (SOIL)

Filter: Lab_Report_Number in('ES2301184')

Lab Report Number	ES2301184
Field ID	BH03_0.2_230111
Sampled Date/Time	13/01/2023 15:00

	Carbophenothion	mg/kg	0.05	<0.05
	Chlorfenvinphos	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Chlorpyrifos	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Chlorpyrifos-methyl	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Demeton-S-methyl	mg/kg	0.05	<0.05
	Diazinon	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Dichlorvos	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Dimethoate	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Ethion	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Fenamiphos	mg/kg	0.05	<0.05
	Fenthion	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Malathion	mg/kg	0.05 : 0.2 (Interlab)	<0.05
	Monocrotophos	mg/kg	0.2 : 2 (Interlab)	<0.2
	Parathion	mg/kg	0.2	<0.2
	Parathion-methyl	mg/kg	0.2	<0.2
	Pirimphos-ethyl	mg/kg	0.05	<0.05
	Prothiofos	mg/kg	0.05	<0.05
sphorus Pesticides (OP)				
Organochlorine Pesticides (OC)				
	Aldrin	mg/kg	0.05	<0.05
	Dieldrin	mg/kg	0.05	<0.05
	Aldrin + Dieldrin	mg/kg	0.05	<0.05
	α-BHC	mg/kg	0.05	<0.05
	β-BHC	mg/kg	0.05	<0.05
	γ-BHC	mg/kg	0.05	<0.05
	γ-BHC (Lindane)	mg/kg	0.05	<0.05
	cis-Chlordane	mg/kg	0.05	<0.05
	trans-Chlordane	mg/kg	0.05	<0.05
	Chlordane	mg/kg	0.05 : 0.1 (Interlab)	<0.05
	DDD	mg/kg	0.05	<0.05
	DDE	mg/kg	0.05	<0.05
	DDT	mg/kg	0.2 : 0.05 (Interlab)	<0.2
	DDT+DDE+DDD	mg/kg	0.05	<0.05
	Endosulfan	mg/kg	0.05	<0.05
	Endosulfan 1	mg/kg	0.05	<0.05
	Endosulfan 2	mg/kg	0.05	<0.05
	Endosulfan sulfate	mg/kg	0.05	<0.05
	Endrin	mg/kg	0.05	<0.05
	Endrin aldehyde	mg/kg	0.05	<0.05
	Endrin ketone	mg/kg	0.05	<0.05
	Heptachlor	mg/kg	0.05	<0.05
	Heptachlor epoxide	mg/kg	0.05	<0.05
	Hexachlorobenzene (HCB)	mg/kg	0.05	<0.05
	Methoxychlor	mg/kg	0.2 : 0.05 (Interlab)	<0.2

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-10 x EQL); 30 (10-20 x EQL); 30 (20-30 x EQL)).

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in t

Soil RPD Table

Field Duplicates (SOIL)

Filter: Lab_Report_Number in('ES2301184')

Lab Report Number	956722	
Field ID	QC201	RPD
Sampled Date/Time	13/01/2023 15:00	

Chem_Group	ChemName	Units	EQL		
Metals	Arsenic	mg/kg	5 : 2 (Interlab)	3	0
	Cadmium	mg/kg	1 : 0.4 (Interlab)	<0.4	0
	Chromium	mg/kg	2 : 5 (Interlab)	11	17
	Copper	mg/kg	5	8.6	48
	Lead	mg/kg	5	15	33
	Mercury	mg/kg	0.1	<0.1	0
	Nickel	mg/kg	2 : 5 (Interlab)	<5	0
	Zinc	mg/kg	5	13	51
Total Petroleum Hydrocarbons	C6-C9 fraction	mg/kg	10 : 20 (Interlab)	<20	0
	C10-C14 fraction	mg/kg	50 : 20 (Interlab)	<20	0
	C15-C28 fraction	mg/kg	100 : 50 (Interlab)	<50	0
	C29-C36 fraction	mg/kg	100 : 50 (Interlab)	<50	0
	C10-C36 fraction (sum)	mg/kg	50	<50	0
Recoverable Hydrocarbons					
Total Recoverable Hydrocarbons	C6-C10 fraction	mg/kg	10 : 20 (Interlab)	<20	0
	C6-C10 fraction (minus BTEX)(F1)	mg/kg	10 : 20 (Interlab)	<20	0
	>C10-C16 (minus Naphthalene)(F2)	mg/kg	50	<50	0
	>C10-C16 fraction	mg/kg	50	<50	0
	>C16-C34 fraction	mg/kg	100	<100	0
	>C34-C40 fraction	mg/kg	100	<100	0
	>C10-C40 fraction (sum)	mg/kg	50 : 100 (Interlab)	<100	0
Monocyclic Aromatic Hydrocarbons					
Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.2 : 0.1 (Interlab)	<0.1	0
	Toluene	mg/kg	0.5 : 0.1 (Interlab)	<0.1	0
	Ethylbenzene	mg/kg	0.5 : 0.1 (Interlab)	<0.1	0
	m&p-Xylene	mg/kg	0.5 : 0.2 (Interlab)	<0.2	0
	o-Xylene	mg/kg	0.5 : 0.1 (Interlab)	<0.1	0
	Total Xylenes	mg/kg	0.5 : 0.3 (Interlab)	<0.3	0
	Total BTEX	mg/kg	0.2		
Aromatic Hydrocarbons					
Naphthalene	Naphthalene (VOC)	mg/kg	1		
Polynuclear Aromatic Hydrocarbons					
Polynuclear Aromatic Hydrocarbons	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5	0.6	0
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5	<0.5	0
	Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5	1.2	0
	Naphthalene	mg/kg	0.5	<0.5	0
	Acenaphthylene	mg/kg	0.5	<0.5	0
	Acenaphthene	mg/kg	0.5	<0.5	0
	Anthracene	mg/kg	0.5	<0.5	0
	Fluorene	mg/kg	0.5	<0.5	0
	Phenanthrene	mg/kg	0.5	<0.5	0
	Fluoranthene	mg/kg	0.5	<0.5	0
	Benz(a)anthracene	mg/kg	0.5	<0.5	0
	Benzo(k)fluoranthene	mg/kg	0.5	<0.5	0
	Benzo(b&j)fluoranthene	mg/kg	0.5	<0.5	0
	Benzo(a)pyrene	mg/kg	0.5	<0.5	0
	Chrysene	mg/kg	0.5	<0.5	0
	Pyrene	mg/kg	0.5	<0.5	0
	Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	0
	Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	0
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5	<0.5	0
	Sum of PAHs	mg/kg	0.5	<0.5	0
Phenolic Compounds					
Phenolic Compounds	3/4-Methylphenol (m/p-cresol)	mg/kg	1		
	Phenol	mg/kg	0.5	<0.5	0
	2-Chlorophenol	mg/kg	0.5	<0.5	0
	2-Methylphenol (o-Cresol)	mg/kg	0.5 : 0.2 (Interlab)	<0.2	0
	2-Nitrophenol	mg/kg	0.5 : 1 (Interlab)	<1	0
	2,4-Dichlorophenol	mg/kg	0.5	<0.5	0
	2,4-Dimethylphenol	mg/kg	0.5	<0.5	0
	2,6-Dichlorophenol	mg/kg	0.5	<0.5	0
	4-Chloro-3-methylphenol	mg/kg	0.5 : 1 (Interlab)	<1	0
	2,4,6-Trichlorophenol	mg/kg	0.5 : 1 (Interlab)	<1	0
	2,4,5-Trichlorophenol	mg/kg	0.5 : 1 (Interlab)	<1	0
	Pentachlorophenol	mg/kg	2 : 1 (Interlab)	<1	0
Physico-Chemical Parameters					
Physico-Chemical Parameters	Moisture Content	%	1		
Organophosphorus Pesticides (OP)					
Organophosphorus Pesticides (OP)	Azinphos Methyl	mg/kg	0.05 : 0.2 (Interlab)	<0.2	0
	Bromophos-ethyl	mg/kg	0.05		

Soil RPD Table

Field Duplicates (SOIL)
Filter: Lab_Report_Number in('ES2301184')

Lab Report Number	956722	
Field ID	QC201	RPD
Sampled Date/Time	13/01/2023 15:00	

	Carbophenothion	mg/kg	0.05		
	Chlorfenvinphos	mg/kg	0.05 : 0.2 (Interlab)	<0.2	0
	Chlorpyrifos	mg/kg	0.05 : 0.2 (Interlab)	<0.2	0
	Chlorpyrifos-methyl	mg/kg	0.05 : 0.2 (Interlab)	<0.2	0
	Demeton-S-methyl	mg/kg	0.05		
	Diazinon	mg/kg	0.05 : 0.2 (Interlab)	<0.2	0
	Dichlorvos	mg/kg	0.05 : 0.2 (Interlab)	<0.2	0
	Dimethoate	mg/kg	0.05 : 0.2 (Interlab)	<0.2	0
	Ethion	mg/kg	0.05 : 0.2 (Interlab)	<0.2	0
	Fenamiphos	mg/kg	0.05		
	Fenthion	mg/kg	0.05 : 0.2 (Interlab)	<0.2	0
	Malathion	mg/kg	0.05 : 0.2 (Interlab)	<0.2	0
	Monocrotophos	mg/kg	0.2 : 2 (Interlab)	<2	0
	Parathion	mg/kg	0.2	<0.2	0
	Parathion-methyl	mg/kg	0.2	<0.2	0
	Pirimphos-ethyl	mg/kg	0.05		
	Prothiofos	mg/kg	0.05		
sphorus Pesticides (OP)					
Organochlorine Pesticides (OC)					
	Aldrin	mg/kg	0.05	<0.05	0
	Dieldrin	mg/kg	0.05	<0.05	0
	Aldrin + Dieldrin	mg/kg	0.05	<0.05	0
	a-BHC	mg/kg	0.05	<0.05	0
	b-BHC	mg/kg	0.05	<0.05	0
	d-BHC	mg/kg	0.05	<0.05	0
	g-BHC (Lindane)	mg/kg	0.05	<0.05	0
	cis-Chlordane	mg/kg	0.05		
	trans-Chlordane	mg/kg	0.05		
	Chlordane	mg/kg	0.05 : 0.1 (Interlab)	<0.1	0
	DDD	mg/kg	0.05	<0.05	0
	DDE	mg/kg	0.05	<0.05	0
	DDT	mg/kg	0.2 : 0.05 (Interlab)	<0.05	0
	DDT+DDE+DDD	mg/kg	0.05	<0.05	0
	Endosulfan	mg/kg	0.05		
	Endosulfan 1	mg/kg	0.05	<0.05	0
	Endosulfan 2	mg/kg	0.05	<0.05	0
	Endosulfan sulfate	mg/kg	0.05	<0.05	0
	Endrin	mg/kg	0.05	<0.05	0
	Endrin aldehyde	mg/kg	0.05	<0.05	0
	Endrin ketone	mg/kg	0.05	<0.05	0
	Heptachlor	mg/kg	0.05	<0.05	0
	Heptachlor epoxide	mg/kg	0.05	<0.05	0
	Hexachlorobenzene (HCB)	mg/kg	0.05	<0.05	0
	Methoxychlor	mg/kg	0.2 : 0.05 (Interlab)	<0.05	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 30 (1-10 x EQL); 30 (10-20 x EQL); 30 (20-100 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in t

Groundwater RPDs

				Metals								Total Petroleum Hydrocarbons					Total Recoverable Hydrocarbons			
				Arsenic (filtered)	Cadmium (filtered)	Chromium (filtered)	Copper (filtered)	Lead (filtered)	Mercury (filtered)	Nickel (filtered)	Zinc (filtered)	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 (minus Naphthalene) (F2)	>C10-C16 fraction
EQL				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
				0.001	0.0001	0.001	0.001	0.001	0.0001	0.001	0.005	20	50	100	50	50	20	20	50	50

Lab Report Number	Field ID	Matrix Type	Date																	
ES2301798	MW01_230119	Water	19/01/2023	0.001	0.0001	0.004	0.003	0.003	<0.0001	0.006	0.036	<20	<50	<100	<50	<50	<20	<20	<100	<100
957400	QC202	Water	19/01/2023	0.002	<0.0002	0.005	0.005	0.003	<0.0001	0.006	0.040	<20	50	200	<100	250	<20	<20	60	60
RPD				67	0	22	50	0	0	0	11	0	0	67	0	133	0	0	0	0
ES2301798	MW02_230119	Water	19/01/2023	<0.001	<0.0001	<0.001	0.001	<0.001	<0.0001	0.004	0.020	<20	<50	<100	<50	<50	<20	<20	<100	<100
	QC102	Water	19/01/2023	<0.001	0.0001	<0.001	0.002	<0.001	<0.0001	0.004	0.019	<20	<50	<100	<50	<50	<20	<20	<100	<100
RPD				0	0	0	67	0	0	0	5	0	0	0	0	0	0	0	0	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 30 (1 - 10 x EQL); 30 (10 - 30 x EQL); 30 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

Groundwater RPDs

				Polycyclic Aromatic Hydrocarbons							Monocyclic Aromatic Hydrocarbons			Naphthalene	Other PAHs					
				>C16-C34 fraction	>C34-C40 fraction	>C10-C40 fraction (sum)	Benzene	Toluene	Ethylbenzene	m&p-Xylene	o-Xylene	Total Xylenes	Total BTEX	Naphthalene (VOC)	Benzo(a)pyrene TEQ calc (Zero)	Naphthalene	Acenaphthylene	Acenaphthene	Anthracene	Fluorene
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				100	100	100	1	1	1	2	1	2	1	5	0.5	1	1	1	1	1
Lab Report Number	Field ID	Matrix Type	Date																	
ES2301798	MW01_230119	Water	19/01/2023	<100	<100	<100	<1	<2	<2	<2	<2	<2	<1	<5	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0
957400	QC202	Water	19/01/2023	200	<100	260	<1	<1	<1	<2	<1	<3		<10		<1	<1	<1	<1	<1
RPD				67	0	89	0	0	0	0	0	0		0		0	0	0	0	0
ES2301798	MW02_230119	Water	19/01/2023	<100	<100	<100	<1	<2	<2	<2	<2	<2	<1	<5	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0
	QC102	Water	19/01/2023	<100	<100	<100	<1	<2	<2	<2	<2	<2	<1	<5	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0
RPD				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range)
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any interlab duplicates that are not matched are highlighted in red.

Groundwater RPDs

				Polynuclear Aromatic Hydrocarbons																
				Phenanthrene	Fluoranthene	Benz(a)anthracene	Benzo(k)fluoranthene	Benzo(b&j)fluoranthene	Benzo(a)pyrene	Chrysene	Pyrene	Benzo(g,h,i)perylene	Dibenz(a,h)anthracene						Indeno(1,2,3-cd)pyrene	Sum of PAHs
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	3/4-Methylphenol (m/p-cresol)	Phenol	2-Chlorophenol	2-Methylphenol (o-Cresol)	3&4-Methylphenol (m&p-Cresol)
EQL				1	1	1	1	1	0.5	1	1	1	1	1	0.5	2	1	1	1	6
Lab Report Number	Field ID	Matrix Type	Date																	
ES2301798	MW01_230119	Water	19/01/2023	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<2.0	<1.0	<1.0	<1.0	
957400	QC202	Water	19/01/2023	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1		<3	<3	<3	<6
RPD				0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	
ES2301798	MW02_230119	Water	19/01/2023	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<2.0	<1.0	<1.0	<1.0	
		Water	19/01/2023	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<2.0	<1.0	<1.0	<1.0	
RPD				0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range)
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any interlab duplicates are highlighted in green.

Groundwater RPDs

				Phenolic Compounds																
				Total Cresols	2-Nitrophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,6-Dichlorophenol	4-Chloro-3-methylphenol	2,4,6-Trichlorophenol	2,4,5-Trichlorophenol	4,6-Dinitro-2-methylphenol	Pentachlorophenol	2,4-Dinitrophenol	2-Cyclohexyl-4,6-dinitrophenol	4-Nitrophenol	Dinoseb	Tetrachlorophenols	Sum of Phenols (halogenated)	Sum of Phenols (non-halogenated)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				10	1	1	1	1	1	1	1	30	2	30	100	30	100	30	10	100
Lab Report Number	Field ID	Matrix Type	Date		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0							
ES2301798	MW01_230119	Water	19/01/2023	<10	<10	<3	<3	<3	<10	<10	<10	<30	<10	<30	<100	<30	<100	<30	<10	<100
957400	QC202	Water	19/01/2023		0	0	0	0	0	0	0		0							
RPD																				
ES2301798	MW02_230119	Water	19/01/2023		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<2.0							
	QC102	Water	19/01/2023		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0		<2.0							
RPD					0	0	0	0	0	0	0		0							

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range)
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any interlab duplicates are highlighted in green.

Groundwater RPDs

				Bolstar (Sulprofos)	Mevinphos (Phosdrin)	Omethoate	Pirimiphos-methyl	Pyrazophos	Azinphos Methyl	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Demeton-S-methyl	Diazinon	Dichlorvos
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				2	2	20	20	2	0.5	0.5	0.5	0.5	0.5	0.5	20	2	2	0.5	0.5	0.5
Lab Report Number	Field ID	Matrix Type	Date																	
ES2301798	MW01_230119	Water	19/01/2023						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	<0.5	<0.5
957400	QC202	Water	19/01/2023	<2	<2	<20	<20	<2	<2			<20	<2	<2	<20	<2	<2		<2	<2
RPD									0			0	0	0					0	0
ES2301798	MW02_230119	Water	19/01/2023						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	<0.5	<0.5
	QC102	Water	19/01/2023						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5				<0.5	<0.5	<0.5
RPD									0	0	0	0	0	0				0	0	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range)
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any interlab duplicates are highlighted in green.

Groundwater RPDs

				Organophosphorus Pesticides (OP)																
				Dimethoate	Disulfoton	EPN	Ethion	Ethoprop	Fenamiphos	Fenitrothion	Fensulfothion	Fenthion	Malathion	Merphos	Monocrotophos	Naled (Dibrom)	Parathion	Parathion-methyl	Phorate	Pirimphos-ethyl
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				0.5	2	2	0.5	2	0.5	2	2	0.5	0.5	2	2	2	2	2	2	0.5

Lab Report Number	Field ID	Matrix Type	Date																	
ES2301798	MW01_230119	Water	19/01/2023	<0.5			<0.5		<0.5			<0.5	<0.5		<2.0		<2.0	<2.0		<0.5
957400	QC202	Water	19/01/2023	<2	<2	<2	<2	<2		<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	
RPD				0			0				0	0		0		0	0			
ES2301798	MW02_230119	Water	19/01/2023	<0.5			<0.5		<0.5			<0.5	<0.5		<2.0		<2.0	<2.0		<0.5
	QC102	Water	19/01/2023	<0.5			<0.5		<0.5			<0.5	<0.5		<2.0		<2.0	<2.0		<0.5
RPD				0			0		0			0	0		0		0	0		0

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range)
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any i

Groundwater RPDs

				Prothiofos	Ronnel	Trichloronate	Terbufos	Tetrachlorvinphos	Tokuthion	Aldrin	Dieldrin	Aldrin + Dieldrin	α-BHC	β-BHC	δ-BHC	γ-BHC (Lindane)	cis-Chlordane	trans-Chlordane	Chlordane	DDD
EQL				0.5	2	2	2	2	0.002	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.5	0.5	0.5	0.2
Lab Report Number	Field ID	Matrix Type	Date																	
ES2301798	MW01_230119	Water	19/01/2023	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
957400	QC202	Water	19/01/2023		<2	<2	<2	<2	<0.002	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2			<2	<0.2
RPD										0	0	0	0	0	0	0			0	0
ES2301798	MW02_230119	Water	19/01/2023	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
		Water	19/01/2023	<0.5						<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
RPD				0						0	0	0	0	0	0	0	0	0	0	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range)
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any interlab duplicates are highlighted in green.

Groundwater RPDs

				Organochlorine Pesticides (OC)															
				DDE	DDT	DDT+DDE+DDD	Endosulfan 1	Endosulfan 2	Endosulfan sulfate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor epoxide	Hexachlorobenzene (HCB)	Methoxychlor	Toxaphene	Organochlorine pesticides (sum)	Other organochlorine pesticides (sum)
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	5	2	2

Lab Report Number	Field ID	Matrix Type	Date																
ES2301798	MW01_230119	Water	19/01/2023	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0			
957400	QC202	Water	19/01/2023	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<5	<2	<2
RPD				0	0	0	0	0	0	0	0	0	0	0	0	0			
ES2301798	MW02_230119	Water	19/01/2023	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0			
	QC102	Water	19/01/2023	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0			
RPD				0	0	0	0	0	0	0	0	0	0	0	0	0			

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range)
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any interlab duplicates are highlighted in green.

Soil Rinsate Results

Field Blanks (WATER)
Filter: Lab_Report_Number in('ES2301184')

Lab Report Number	ES2301184	ES2301184	ES2301184
Field ID	QC300_230111	QC300_230113	QC300_230113
Sampled_Date/Time	11/01/2023 15:00	12/01/2023 15:00	13/01/2023 15:00
Sample Type	Rinsate	Rinsate	Rinsate

Chem_Group	ChemName	Units	EQL			
Metals	Arsenic (Filtered)	mg/L	0.001	<0.001	<0.001	<0.001
	Cadmium (Filtered)	mg/L	0.0001	<0.0001	<0.0001	<0.0001
	Chromium (Filtered)	mg/L	0.001	<0.001	<0.001	<0.001
	Copper (Filtered)	mg/L	0.001	<0.001	<0.001	<0.001
	Lead (Filtered)	mg/L	0.001	<0.001	<0.001	<0.001
	Mercury (Filtered)	mg/L	0.0001	<0.0001	<0.0001	<0.0001
	Nickel (Filtered)	mg/L	0.001	<0.001	<0.001	<0.001
	Zinc (Filtered)	mg/L	0.005	<0.005	<0.005	<0.005
Monocyclic Aromatic Hydrocarbons	Benzene	µg/L	1	<1	<1	<1
	Toluene	µg/L	2	<2	<2	<2
	Ethylbenzene	µg/L	2	<2	<2	<2
	m&p-Xylene	µg/L	2	<2	<2	<2
	p-Xylene	µg/L	2	<2	<2	<2
	Total Xylenes	µg/L	2	<2	<2	<2
	Total BTEX	µg/L	1	<1	<1	<1
Naphthalene	Naphthalene (VOC)	µg/L	5	<5	<5	<5
Organochlorine Pesticides (OC)	Aldrin	µg/L	0.5	<0.5	<0.5	<0.5
	Dieldrin	µg/L	0.5	<0.5	<0.5	<0.5
	Aldrin + Dieldrin	µg/L	0.5	<0.5	<0.5	<0.5
	a-BHC	µg/L	0.5	<0.5	<0.5	<0.5
	b-BHC	µg/L	0.5	<0.5	<0.5	<0.5
	γ-BHC	µg/L	0.5	<0.5	<0.5	<0.5
	γ-BHC (Lindane)	µg/L	0.5	<0.5	<0.5	<0.5
	cis-Chlordane	µg/L	0.5	<0.5	<0.5	<0.5
	trans-Chlordane	µg/L	0.5	<0.5	<0.5	<0.5
	Chlordane	µg/L	0.5	<0.5	<0.5	<0.5
	DDD	µg/L	0.5	<0.5	<0.5	<0.5
	DDE	µg/L	0.5	<0.5	<0.5	<0.5
	DDT	µg/L	2	<2	<2	<2
	DDT+DDE+DDD	µg/L	0.5	<0.5	<0.5	<0.5
	Endosulfan 1	µg/L	0.5	<0.5	<0.5	<0.5
	Endosulfan 2	µg/L	0.5	<0.5	<0.5	<0.5
	Endosulfan sulfate	µg/L	0.5	<0.5	<0.5	<0.5
	Endrin	µg/L	0.5	<0.5	<0.5	<0.5
	Endrin aldehyde	µg/L	0.5	<0.5	<0.5	<0.5
	Endrin ketone	µg/L	0.5	<0.5	<0.5	<0.5
	Heptachlor	µg/L	0.5	<0.5	<0.5	<0.5
	Heptachlor epoxide	µg/L	0.5	<0.5	<0.5	<0.5
	Hexachlorobenzene (HCB)	µg/L	0.5	<0.5	<0.5	<0.5
	Methoxychlor	µg/L	2	<2	<2	<2
Organophosphorus Pesticides (OP)	Azinphos Methyl	µg/L	0.5	<0.5	<0.5	<0.5
	Benathios-ethyl	µg/L	0.5	<0.5	<0.5	<0.5
	Carbophenothion	µg/L	0.5	<0.5	<0.5	<0.5
	Chlorfenvinphos	µg/L	0.5	<0.5	<0.5	<0.5
	Chlorpyrifos	µg/L	0.5	<0.5	<0.5	<0.5
	Chlorpyrifos-methyl	µg/L	0.5	<0.5	<0.5	<0.5
	Demeton-S-methyl	µg/L	0.5	<0.5	<0.5	<0.5
	Diazinon	µg/L	0.5	<0.5	<0.5	<0.5
	Dichlorvos	µg/L	0.5	<0.5	<0.5	<0.5
	Dimethoate	µg/L	0.5	<0.5	<0.5	<0.5
	Ethion	µg/L	0.5	<0.5	<0.5	<0.5
	Fenathion	µg/L	0.5	<0.5	<0.5	<0.5
	Fenitrothion	µg/L	0.5	<0.5	<0.5	<0.5
	Malathion	µg/L	0.5	<0.5	<0.5	<0.5
	Monocrotophos	µg/L	2	<2	<2	<2
	Parathion	µg/L	2	<2	<2	<2
	Parathion-methyl	µg/L	2	<2	<2	<2
	Permethrin-ethyl	µg/L	0.5	<0.5	<0.5	<0.5
	Prothiofos	µg/L	0.5	<0.5	<0.5	<0.5
Phenolic Compounds	3,4-Methylphenol (mip-cresol)	µg/L	2	<2	<2	<2
	Phenol	µg/L	1	<1	<1	<1
	2-Chlorophenol	µg/L	1	<1	<1	<1
	2-Methylphenol (o-Cresol)	µg/L	1	<1	<1	<1
	2-Nitrophenol	µg/L	1	<1	<1	<1
	2,4-Dichlorophenol	µg/L	1	<1	<1	<1
	2,4-Dimethylphenol	µg/L	1	<1	<1	<1
	2,6-Dichlorophenol	µg/L	1	<1	<1	<1
	4-Chloro-3-methylphenol	µg/L	1	<1	<1	<1
	2,4,6-Trichlorophenol	µg/L	1	<1	<1	<1
	2,4,5-Trichlorophenol	µg/L	1	<1	<1	<1
	Pentachlorophenol	µg/L	2	<2	<2	<2
Polynuclear Aromatic Hydrocarbons	Benzo(a)pyrene TEQ calc (Zero)	µg/L	0.5	<0.5	<0.5	<0.5
	Naphthalene	µg/L	1	<1	<1	<1
	Acenaphthylene	µg/L	1	<1	<1	<1
	Acenaphthene	µg/L	1	<1	<1	<1
	Anthracene	µg/L	1	<1	<1	<1
	Fluorene	µg/L	1	<1	<1	<1
	Phenanthrene	µg/L	1	<1	<1	<1
	Fluoranthene	µg/L	1	<1	<1	<1
	Benz(a)anthracene	µg/L	1	<1	<1	<1
	Benzo(k)fluoranthene	µg/L	1	<1	<1	<1
	Benzo(b)fluoranthene	µg/L	1	<1	<1	<1
	Benzo(a)pyrene	µg/L	0.5	<0.5	<0.5	<0.5
	Chrysene	µg/L	1	<1	<1	<1
	Pyrene	µg/L	1	<1	<1	<1
	Benzo(a,h)pyrene	µg/L	1	<1	<1	<1
	Dibenz(a,h)anthracene	µg/L	1	<1	<1	<1
	Indeno(1,2,3-cd)pyrene	µg/L	1	<1	<1	<1
	Sum of PAHs	µg/L	0.5	<0.5	<0.5	<0.5
Total Petroleum Hydrocarbons	C6-C9 fraction	µg/L	20	<20	<20	<20
	C10-C14 fraction	µg/L	50	<50	<50	<50
	C15-C28 fraction	µg/L	100	<100	<100	<100
	C29-C36 fraction	µg/L	50	<50	<50	<50
	C10-C36 fraction (sum)	µg/L	50	<50	<50	<50
Total Recoverable Hydrocarbons	C6-C10 fraction	µg/L	20	<20	<20	<20
	C6-C10 fraction (minus BTEX)(F1)	µg/L	20	<20	<20	<20
	>C10-C16 (minus Naphthalene)(F2)	µg/L	100	<100	<100	<100
	>C10-C16 fraction	µg/L	100	<100	<100	<100
	>C16-C24 fraction	µg/L	100	<100	<100	<100
	>C24-C40 fraction	µg/L	100	<100	<100	<100
	>C10-C40 fraction (sum)	µg/L	100	<100	<100	<100

Groundwater Rinsate Results

				Metals								Total Petroleum Hydrocarbons					Total Recoverable Hydrocarbons			
				Arsenic (filtered)	Cadmium (filtered)	Chromium (filtered)	Copper (filtered)	Lead (filtered)	Mercury (filtered)	Nickel (filtered)	Zinc (filtered)	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 (minus Naphthalene)(F2)	>C10-C16 fraction
				mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				0.001	0.0001	0.001	0.001	0.001	0.0001	0.001	0.005	20	50	100	50	50	20	20	100	100

Lab Report Number	Field ID	Matrix Type	Date																	
ES2301798	QC303_230119	Water	19/01/2023	<0.001	<0.0001	<0.001	<0.001	<0.001	<0.0001	<0.001	<0.005	<20	<50	<100	<50	<50	<20	<20	<100	<100
	TB	Water	18/01/2023									<20					<20	<20		

Groundwater Rinsate Results

				Polycyclic Aromatic Hydrocarbons			Monocyclic Aromatic Hydrocarbons							Naphthalene	Other PAHs						
				>C16-C34 fraction	>C34-C40 fraction	>C10-C40 fraction (sum)	Benzene	Toluene	Ethylbenzene	m&p-Xylene	o-Xylene	Total Xylenes	Total BTEX	Naphthalene (VOC)	Benzo(a)pyrene TEQ calc (Zero)	Naphthalene	Acenaphthylene	Acenaphthene	Anthracene	Fluorene	
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				100	100	100	1	2	2	2	2	2	1	5	0.5	1	1	1	1	1	1

Lab Report Number	Field ID	Matrix Type	Date	<100	<100	<100	<1	<2	<2	<2	<2	<2	<1	<5	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0
ES2301798	QC303_230119	Water	19/01/2023																	
	TB	Water	18/01/2023																	

Groundwater Rinsate Results

				Polynuclear Aromatic Hydrocarbons																
				Phenanthrene	Fluoranthene	Benz(a)anthracene	Benzo(k)fluoranthene	Benzo(b&j)fluoranthene	Benzo(a)pyrene	Chrysene	Pyrene	Benzo(g,h,i)perylene	Dibenz(a,h)anthracene	Indeno(1,2,3-cd)pyrene	Sum of PAHs	3/4-Methylphenol (m/p-cresol)	Phenol	2-Chlorophenol	2-Methylphenol (o-Cresol)	2-Nitrophenol
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				1	1	1	1	1	0.5	1	1	1	1	1	0.5	2	1	1	1	1
Lab Report Number	Field ID	Matrix Type	Date																	
ES2301798	QC303_230119	Water	19/01/2023	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<2.0	<1.0	<1.0	<1.0	<1.0
	TB	Water	18/01/2023																	

Groundwater Rinsate Results

				Phenolic Compounds							Organophosphorus Pest									
				2,4-Dichlorophenol	2,4-Dimethylphenol	2,6-Dichlorophenol	4-Chloro-3-methylphenol	2,4,6-Trichlorophenol	2,4,5-Trichlorophenol	Pentachlorophenol	Azinphos Methyl	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Demeton-S-methyl	Diazinon	Dichlorvos	Dimethoate
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				1	1	1	1	1	1	2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lab Report Number	Field ID	Matrix Type	Date																	
ES2301798	QC303_230119	Water	19/01/2023	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	TB	Water	18/01/2023																	

Groundwater Rinsate Results

				Pesticides (OP)																
				Ethion	Fenamiphos	Fenthion	Malathion	Monocrotophos	Parathion	Parathion-methyl	Pirimphos-ethyl	Prothiofos	Aldrin	Dieldrin	Aldrin + Dieldrin	α-BHC	β-BHC	γ-BHC	γ-BHC (Lindane)	cis-Chlordane
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				0.5	0.5	0.5	0.5	2	2	2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Lab Report Number	Field ID	Matrix Type	Date																	
ES2301798	QC303_230119	Water	19/01/2023	<0.5	<0.5	<0.5	<0.5	<2.0	<2.0	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
	TB	Water	18/01/2023																	

Groundwater Rinsate Results

				Organochlorine Pesticides (OC)															
				trans-Chlordane	Chlordane	DDD	DDE	DDT	DDT+DDE+DDD	Endosulfan 1	Endosulfan 2	Endosulfan sulfate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor epoxide	Hexachlorobenzene (HCB)	Methoxychlor
				µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL				0.5	0.5	0.5	0.5	2	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2

Lab Report Number	Field ID	Matrix Type	Date																
ES2301798	QC303_230119	Water	19/01/2023	<0.5	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<2.0
	TB	Water	18/01/2023																

Soil Blank Results

Field Blanks (SOIL)
Filter: Lab_Report_Number in('ES2301184')

Lab Report Number	ES2301184
Field ID	TB
Sampled Date/Time	9/01/2023 15:00
Sample Type	Trip_B

Chem_Group	ChemName	Units	EQL	
Asbestos	APPROVED IDENTIFIER:	-		
	Asbestos fibres	-	0.1	
	Asbestos Type	-		
	Asbestos (Trace)	Fibres	5	
Landfill Gas	Description	-		
Metals	Arsenic	mg/kg	5	
	Cadmium	mg/kg	1	
	Chromium	mg/kg	2	
	Copper	mg/kg	5	
	Lead	mg/kg	5	
	Mercury	mg/kg	0.1	
	Nickel	mg/kg	2	
	Zinc	mg/kg	5	
Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.2	<0.2
	Toluene	mg/kg	0.5	<0.5
	Ethylbenzene	mg/kg	0.5	<0.5
	m&p-Xylene	mg/kg	0.5	<0.5
	o-Xylene	mg/kg	0.5	<0.5
	Total Xylenes	mg/kg	0.5	<0.5
	Total BTEX	mg/kg	0.2	<0.2
Naphthalene	Naphthalene (VOC)	mg/kg	1	<1
Organochlorine Pesticides (OC)	Aldrin	mg/kg	0.05	
	Dieldrin	mg/kg	0.05	
	Aldrin + Dieldrin	mg/kg	0.05	
	a-BHC	mg/kg	0.05	
	b-BHC	mg/kg	0.05	
	d-BHC	mg/kg	0.05	
	g-BHC (Lindane)	mg/kg	0.05	
	cis-Chlordane	mg/kg	0.05	
	trans-Chlordane	mg/kg	0.05	
	Chlordane	mg/kg	0.05	
	DDD	mg/kg	0.05	
	DDE	mg/kg	0.05	
	DDT	mg/kg	0.2	
	DDT+DDE+DDD	mg/kg	0.05	
	Endosulfan	mg/kg	0.05	
	Endosulfan 1	mg/kg	0.05	
	Endosulfan 2	mg/kg	0.05	
	Endosulfan sulfate	mg/kg	0.05	
	Endrin	mg/kg	0.05	
	Endrin aldehyde	mg/kg	0.05	
	Endrin ketone	mg/kg	0.05	
	Heptachlor	mg/kg	0.05	
	Heptachlor epoxide	mg/kg	0.05	
	Hexachlorobenzene (HCB)	mg/kg	0.05	
	Methoxychlor	mg/kg	0.2	
Organophosphorus Pesticides (OP)	Azinphos Methyl	mg/kg	0.05	
	Bromophos-ethyl	mg/kg	0.05	
	Carbophenothion	mg/kg	0.05	
	Chlorfenvinphos	mg/kg	0.05	
	Chlorpyrifos	mg/kg	0.05	
	Chlorpyrifos-methyl	mg/kg	0.05	
	Demeton-S-methyl	mg/kg	0.05	
	Diazinon	mg/kg	0.05	
	Dichlorvos	mg/kg	0.05	
	Dimethoate	mg/kg	0.05	
	Ethion	mg/kg	0.05	
	Fenamiphos	mg/kg	0.05	
	Fenthion	mg/kg	0.05	
	Malathion	mg/kg	0.05	
	Monocrotophos	mg/kg	0.2	
	Parathion	mg/kg	0.2	
	Parathion-methyl	mg/kg	0.2	
	Pirimphos-ethyl	mg/kg	0.05	

Soil Blank Results

Field Blanks (SOIL)

Filter: Lab_Report_Number in('ES2301184')

Lab Report Number	ES2301184
Field ID	TB
Sampled Date/Time	9/01/2023 15:00
Sample Type	Trip_B

	Prothiofos	mg/kg	0.05	
Phenolic Compounds	3/4-Methylphenol (m/p-cresol)	mg/kg	1	
	Phenol	mg/kg	0.5	
	2-Chlorophenol	mg/kg	0.5	
	2-Methylphenol (o-Cresol)	mg/kg	0.5	
	2-Nitrophenol	mg/kg	0.5	
	2,4-Dichlorophenol	mg/kg	0.5	
	2,4-Dimethylphenol	mg/kg	0.5	
	2,6-Dichlorophenol	mg/kg	0.5	
	4-Chloro-3-methylphenol	mg/kg	0.5	
	2,4,6-Trichlorophenol	mg/kg	0.5	
	2,4,5-Trichlorophenol	mg/kg	0.5	
	Pentachlorophenol	mg/kg	2	
Physico-Chemical Parameters	Moisture Content	%	1	
	weight of sample	g	0.01	
Polynuclear Aromatic Hydrocarbons	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5	
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5	
	Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5	
	Naphthalene	mg/kg	0.5	
	Acenaphthylene	mg/kg	0.5	
	Acenaphthene	mg/kg	0.5	
	Anthracene	mg/kg	0.5	
	Fluorene	mg/kg	0.5	
	Phenanthrene	mg/kg	0.5	
	Fluoranthene	mg/kg	0.5	
	Benz(a)anthracene	mg/kg	0.5	
	Benzo(k)fluoranthene	mg/kg	0.5	
	Benzo(b&j)fluoranthene	mg/kg	0.5	
	Benzo(a)pyrene	mg/kg	0.5	
	Chrysene	mg/kg	0.5	
	Pyrene	mg/kg	0.5	
	Benzo(g,h,i)perylene	mg/kg	0.5	
	Dibenz(a,h)anthracene	mg/kg	0.5	
	Indeno(1,2,3-cd)pyrene	mg/kg	0.5	
	Sum of PAHs	mg/kg	0.5	
Total Petroleum Hydrocarbons	C6-C9 fraction	mg/kg	10	<10
	C10-C14 fraction	mg/kg	50	
	C15-C28 fraction	mg/kg	100	
	C29-C36 fraction	mg/kg	100	
	C10-C36 fraction (sum)	mg/kg	50	
Total Recoverable Hydrocarbons	C6-C10 fraction	mg/kg	10	<10
	C6-C10 fraction (minus BTEX)(F1)	mg/kg	10	<10
	>C10-C16 (minus Naphthalene)(F2)	mg/kg	50	
	>C10-C16 fraction	mg/kg	50	
	>C16-C34 fraction	mg/kg	100	
	>C34-C40 fraction	mg/kg	100	
	>C10-C40 fraction (sum)	mg/kg	50	

Groundwater Trip Spike Table

	Monocyclic Aromatic Hydrocarbons							Naphthalene	
	Benzene	Toluene	Ethylbenzene	m&p-Xylene	o-Xylene	Total Xylenes	Total BTEX	Naphthalene (VOC)	
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
LOR	1	2	2	2	2	2	1	5	
TSC	20	20	20	20	20	40	100	20	
Field ID	Date								
TS	18/01/2023	15	15	14	14	16	30	74	19
Recovery %		75	75	70	70	80	75	74	95

Soil Trip Spike Results

Trip Spikes

Lab Report Number	Matrix Type	Analysis Batch	Field ID	Sampled Date/Time	Chem Group	Chem Name	Trip Spike Result	Trip Spike Control	Result Units
ES2301184	Soil		TS	10/01/2023 15:00	Monocyclic Aromatic Hydrocarbons	Ethylbenzene	9.3	9.8	mg/kg
ES2301184	Soil		TS	10/01/2023 15:00	Monocyclic Aromatic Hydrocarbons	m&p-Xylene	9.4	10	mg/kg
ES2301184	Soil		TS	10/01/2023 15:00	Monocyclic Aromatic Hydrocarbons	Toluene	8	8.2	mg/kg
ES2301184	Soil		TS	10/01/2023 15:00	Monocyclic Aromatic Hydrocarbons	Total Xylenes	13.2	14.1	mg/kg
ES2301184	Soil		TS	10/01/2023 15:00	Monocyclic Aromatic Hydrocarbons	Benzene	0.2	0.2	mg/kg
ES2301184	Soil		TS	10/01/2023 15:00	Naphthalene	Naphthalene (VOC)	< 1	< 1	mg/kg
ES2301184	Soil		TS	10/01/2023 15:00	Monocyclic Aromatic Hydrocarbons	o-Xylene	3.8	4.1	mg/kg
ES2301184	Soil		TS	10/01/2023 15:00	Monocyclic Aromatic Hydrocarbons	Total BTEX	30.7	32.3	mg/kg

Trip Spike Recoveries. Where no lab LCL and UCL is available, user defined limits between 70% and 130% have been adopted for non-compliance.

Soil Trip Spike Results

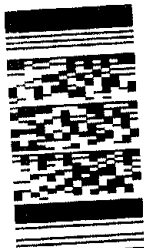
Spike Recovery %	LCL	UCL	Method Name	Lab Sample ID	Sample Type
94.898			EP080: BTEXN	ES2301184042	Trip_S
94			EP080: BTEXN	ES2301184042	Trip_S
97.561			EP080: BTEXN	ES2301184042	Trip_S
93.617			EP080: BTEXN	ES2301184042	Trip_S
100			EP080: BTEXN	ES2301184042	Trip_S
100			EP080: BTEXN	ES2301184042	Trip_S
92.683			EP080: BTEXN	ES2301184042	Trip_S
95.046			EP080: BTEXN	ES2301184042	Trip_S

Appendix F

Laboratory Reports

CONSULTANT: AECOM		Sydney		SAMPLER: M Taylor		Destination Laboratory	
PROJECT MANAGER (PM): Stephen Randall		SITE: Aquatic Drive DSI		MOBILE: 0438 586 749		ALS	
PROJECT NUMBER & TASK CODE: 60694112		P.O. NO.:		EMAIL REPORT TO: matthew.taylor@aec.stephen.randall@aecom.com			
RESULTS REQUIRED (Date): Standard TAT		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)			
FOR LABORATORY USE ONLY		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL				Notes: e.g. "Highly contaminated samples e.g. "High PAHs expected" Extra volume for OC or trace LOBs etc.	
COOLER SEAL (circle appropriate)							
SAMPLE TEMPERATURE							
CHILLED: Yes							
No							
SAMPLE INFORMATION (note: S = Soil, W = Water)		CONTAINER INFORMATION					
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	M jers	
1	HA BH01.0.2.230111	S	13 /01/23			2	
2	HA BH01.0.4.230111	S	13 /01/23			1	
3	HA BH01.1.3.230111	S	13 /01/23			1	
4	HA BH02.0.2.230111	S	13 /01/23			2	
5	HA BH02.0.4.230111	S	13 /01/23			1	
6	HA BH02.1.5.230111	S	13 /01/23			1	
7	BH03.0.2.230111	S	13 /01/23			2	
8	BH03.0.2.230111	S	13 /01/23			1	
9	BH03.1.3.230111	S	13 /01/23			1	
10	BH04.0.3.230111	S	12 /01/23			2	
11	BH04.0.3.230111	S	12 /01/23			2	
12	BH04.0.3.230111	S	12 /01/23			2	
13	BH04.0.3.230111	S	12 /01/23			2	
14	BH04.0.3.230111	S	12 /01/23			2	
15	BH04.0.3.230111	S	12 /01/23			2	
16	BH04.0.3.230111	S	12 /01/23			2	
17	BH04.0.3.230111	S	12 /01/23			2	
18	BH04.0.3.230111	S	12 /01/23			2	
19	BH04.0.3.230111	S	12 /01/23			2	
20	BH04.0.3.230111	S	12 /01/23			2	
21	BH04.0.3.230111	S	12 /01/23			2	
22	BH04.0.3.230111	S	12 /01/23			2	
23	BH04.0.3.230111	S	12 /01/23			2	
24	BH04.0.3.230111	S	12 /01/23			2	
25	BH04.0.3.230111	S	12 /01/23			2	
26	BH04.0.3.230111	S	12 /01/23			2	
27	BH04.0.3.230111	S	12 /01/23			2	
28	BH04.0.3.230111	S	12 /01/23			2	
29	BH04.0.3.230111	S	12 /01/23			2	
30	BH04.0.3.230111	S	12 /01/23			2	
31	BH04.0.3.230111	S	12 /01/23			2	
32	BH04.0.3.230111	S	12 /01/23			2	
33	BH04.0.3.230111	S	12 /01/23			2	
34	BH04.0.3.230111	S	12 /01/23			2	
35	BH04.0.3.230111	S	12 /01/23			2	
36	BH04.0.3.230111	S	12 /01/23			2	
37	BH04.0.3.230111	S	12 /01/23			2	
38	BH04.0.3.230111	S	12 /01/23			2	
39	BH04.0.3.230111	S	12 /01/23			2	
40	BH04.0.3.230111	S	12 /01/23			2	
41	BH04.0.3.230111	S	12 /01/23			2	
42	BH04.0.3.230111	S	12 /01/23			2	
43	BH04.0.3.230111	S	12 /01/23			2	
44	BH04.0.3.230111	S	12 /01/23			2	
45	BH04.0.3.230111	S	12 /01/23			2	
46	BH04.0.3.230111	S	12 /01/23			2	
47	BH04.0.3.230111	S	12 /01/23			2	
48	BH04.0.3.230111	S	12 /01/23			2	
49	BH04.0.3.230111	S	12 /01/23			2	
50	BH04.0.3.230111	S	12 /01/23			2	
51	BH04.0.3.230111	S	12 /01/23			2	
52	BH04.0.3.230111	S	12 /01/23			2	
53	BH04.0.3.230111	S	12 /01/23			2	

Environmental Division
Sydney
Work Order Reference
ES2301184



Telephone : + 61-2-8164 6636

FQM - Generic Chain of Custody Form

QCAN(EV)-007-FM1

AECOM

CONSULTANT: AECOM		ADDRESS: Sydney		SAMPLER: M Taylor		Destination Laboratory	
PROJECT MANAGER (PM): Stephen Randall		SITE: Aquatic Drive DSI		MOBILE: 0438 588 749		ALS	
PROJECT NUMBER & TASK CODE: 60694112		P.O. NO.:		EMAIL REPORT TO: matthew.taylor@aec.com.au			
RESULTS REQUIRED (Date): Standard TAT		QUOTE NO.:		ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract site prices)			
FOR LABORATORY USE ONLY				COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:			
COOLER SEAL (if not appropriate)							
Infect: Yes No N/A							
SAMPLE TEMPERATURE							
CHILLED: Yes No							
SAMPLE INFORMATION (note: S = Soil, W = Water)				CONTAINER INFORMATION			
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	N jars	
17	BH07_0.2.2301	S	11/01/23			2	
18	BH07_0.2.2301	S	11/01/23			1	
19	BH07_1.2.2301	S	11/01/23			1	
20	BH08_0.2.2301	S	12/01/23			2	
21	BH08_0.2.2301	S	12/01/23			1	
22	BH09_0.2.2301	S	12/01/23			2	
	BH09_0.2.2301	S	12/01/23			2	
	BH09_0.2.2301	S	12/01/23			2	
23	BH10_0.2.2301	S	12/01/23			2	
24	BH10_0.2.2301	S	12/01/23			1	
25	BH11_0.2.2301	S	11/01/23			2	
26	BH11_0.2.2301	S	11/01/23			1	
27	BH11_1.2.2301	S	11/01/23			1	
28	BH12_0.2.2301	S	11/01/23			2	
29	BH12_0.2.2301	S	11/01/23			1	
30	BH12_0.2.2301	S	11/01/23			1	
31	QC301	W	12/01/23			4	
RELINQUISHED BY:				RECEIVED BY:			
Name: M Taylor		Date: 12.1.23		Name:		Date:	
Of: AECOM		Time: 13:30		Of:		Time:	
Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airfreight Unpreserved Plastic				V = VOA Vial HCl Preserved; VS = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speculation bottles; SP = Sulfuric Preserved Plastic			
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag							
METHOD OF SHIPMENT				CON. Note No.:			
				Transport Co.:			

ANZ
FQM - Generic Chain of Custody Form

QANENV-007-FM1

CONSULTANT: AECOM		ADDRESS: Sydney		SAMPLER: M Taylor		Destination Laboratory	
PROJECT MANAGER (PM): Stephen Randall		SITE: Aquatic Drive DSI		MOBILE: 0438 588 749		ALS	
PROJECT NUMBER & TASK CODE: 60694112		P.O. NO.:		EMAIL REPORT TO: matthew.taylor@aec.com.au		ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices)	
RESULTS REQUIRED (date): Standard TAT		QUOTE NO.:					
FOR LABORATORY USE ONLY		COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:					
COOLER SEAL (if applicable)		INITIAL: Yes No N/A					
SAMPLE TEMPERATURE		CHILLED: Yes No					
SAMPLE INFORMATION (note: S = Soil, W=Water)		CONTAINER INFORMATION		TRH			
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type/Code	N/jars	
27	BH13_0.2.2301	S	11/01/23			2	
33	BH13_1.0.2301	S	11/01/23			1	
34	BH13_2.0.2301	S	11/01/23			1	
35	BH14_0.2.2301	S	11/01/23			2	
36	BH14_0.2.2301	S	11/01/23			1	
37	BH14_2.0.2301	S	11/01/23			1	
38	QC302	W	13/01/23			4	
39	QC100	S	11/01/23			1	
40	QC101	S	13/01/23			1	
41	QC200	S	11/01/23			1	
42	QC201	S	13/01/23			1	
43	QC202	S	10/01/23			1	
44	TB	S				1	
45	TS	S				1	
RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:		METHOD OF SHIPMENT	
Name: M Taylor		Name:		Name:		Conf Note No.	
Date: 13.1.23		Date:		Date: 13/01/23		Transport Co:	
Time: 13:30		Time:		Time: 13:30			
Of: AECOM		Of:		Of:			

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Airflight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulfate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airflight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Specimen bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Solids; B = Unpreserved Bag.

Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LODs etc.

**SAMPLE RECEIPT NOTIFICATION (SRN)****Work Order : ES2301184**

Client	: AECOM AUSTRALIA PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR STEPHEN RANDALL	Contact	: Sepan Mahamad
Address	: LEVEL 21 420 GEORGE STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: Stephen.Randall@aecom.com	E-mail	: Sepan.Mahamad@ALSGlobal.com
Telephone	: 02 8934 0000	Telephone	: +61 2 8784 8555
Facsimile	: 02 8934 0001	Facsimile	: +61-2-8784 8500
Project	: 60694112	Page	: 1 of 4
Order number	: ----	Quote number	: ES2021AECOMAU0044 (EN/004/21)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: Aquatic Drive DSI		
Sampler	: Matthew Taylor		

Dates

Date Samples Received	: 13-Jan-2023 15:30	Issue Date	: 17-Jan-2023
Client Requested Due Date	: 20-Jan-2023	Scheduled Reporting Date	: 20-Jan-2023

Delivery Details

Mode of Delivery	: Carrier	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 9.3°C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 43 / 29

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- Samples 3, 5, 6, 8, 12, 15, 19, 23, 26, 27, 28, 30, 34, 37 were received and placed on hold.
- **Samples QC200 and QC201 forwarded to Eurofins.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Asbestos analysis will be conducted by ALS Newcastle.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.



Sample Container(s)/Preservation Non-Compliances

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

- No sample container / preservation non-compliance exists.

Any sample identifications that cannot be displayed entirely in the analysis summary table will be listed below.

ES2301184-043 : [10-Jan-2023] : TSC - TRIP SPIKE CONTROL 20

Summary of Sample(s) and Requested Analysis

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

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

Matrix: SOIL

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EA200 Asbestos Identification in Soils -	SOIL - EP075 SIM Phenols only SIM - Phenols only	SOIL - S-12 OC/OP Pesticides	SOIL - S-26 8 metals/TRH/BTEXN/PAH
ES2301184-001	13-Jan-2023 00:00	HA01_0.2_230111	✓	✓	✓	✓	✓
ES2301184-002	13-Jan-2023 00:00	HA01_0.4_230111	✓		✓	✓	✓
ES2301184-004	13-Jan-2023 00:00	HA02_0.2_230111	✓	✓	✓	✓	✓
ES2301184-007	13-Jan-2023 00:00	BH03_0.2_230111	✓	✓	✓	✓	✓
ES2301184-009	13-Jan-2023 00:00	BH03_1.3_230111	✓		✓	✓	✓
ES2301184-010	12-Jan-2023 00:00	BH04_0.3_230111	✓	✓	✓	✓	✓
ES2301184-011	12-Jan-2023 00:00	BH05_0.3_230112	✓	✓	✓	✓	✓
ES2301184-013	11-Jan-2023 00:00	BH06_0.2_230111	✓	✓	✓	✓	✓
ES2301184-014	11-Jan-2023 00:00	BH06_0.6_230111	✓		✓	✓	✓
ES2301184-017	11-Jan-2023 00:00	BH07_0.2_230111	✓	✓	✓	✓	✓
ES2301184-018	11-Jan-2023 00:00	BH07_0.7_230111	✓		✓	✓	✓
ES2301184-020	12-Jan-2023 00:00	BH08_0.2_230112	✓	✓	✓	✓	✓
ES2301184-021	12-Jan-2023 00:00	BH08_0.7_230112	✓		✓	✓	✓
ES2301184-022	12-Jan-2023 00:00	BH09_0.2_230112	✓	✓	✓	✓	✓
ES2301184-024	12-Jan-2023 00:00	BH10_0.7_230112	✓		✓	✓	✓
ES2301184-025	11-Jan-2023 00:00	BH11_0.2_230111	✓	✓	✓	✓	✓
ES2301184-029	11-Jan-2023 00:00	BH12_0.8_230111	✓		✓	✓	✓
ES2301184-032	11-Jan-2023 00:00	BH13_0.2_230111	✓	✓	✓	✓	✓
ES2301184-033	11-Jan-2023 00:00	BH13_1.0_230111	✓		✓	✓	✓
ES2301184-035	11-Jan-2023 00:00	BH14_0.2_230111	✓	✓	✓	✓	✓
ES2301184-036	11-Jan-2023 00:00	BH14_0.7_230111	✓		✓	✓	✓
ES2301184-039	11-Jan-2023 00:00	QC100	✓		✓	✓	✓
ES2301184-040	13-Jan-2023 00:00	QC101	✓		✓	✓	✓



Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EP080 BTEXN	SOIL - S-18 (NO MOIST) TRH(C6-C9)/BTEXN with No Moisture for TBs
ES2301184-041	09-Jan-2023 00:00	TB TRIP BLANK		✓
ES2301184-042	10-Jan-2023 00:00	TS TRIP SPIKE 20	✓	
ES2301184-043	10-Jan-2023 00:00	TSC TRIP SPIKE CONT...	✓	

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - W-12 OC/OP Pesticides	WATER - W-27 TRH/BTEXN/PAH/Phenols/8 Metals
ES2301184-016	11-Jan-2023 00:00	QC300_230111	✓	✓
ES2301184-031	12-Jan-2023 00:00	QC301_230113	✓	✓
ES2301184-038	13-Jan-2023 00:00	QC302_230113	✓	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.



Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	AP_CustomerService.ANZ@aecom.com
- Chain of Custody (CoC) (COC)	Email	AP_CustomerService.ANZ@aecom.com

Matthew Taylor

- *AU Certificate of Analysis - NATA (COA)	Email	Matthew.Taylor@aecom.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	Matthew.Taylor@aecom.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	Matthew.Taylor@aecom.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	Matthew.Taylor@aecom.com
- Chain of Custody (CoC) (COC)	Email	Matthew.Taylor@aecom.com
- EDI Format - ENMRG (ENMRG)	Email	Matthew.Taylor@aecom.com
- EDI Format - EQUIS_V5_AECOM_SAMPLE (EQUIS_V5_AECOM_SAMPLE)	Email	Matthew.Taylor@aecom.com
- EDI Format - ESDAT (ESDAT)	Email	Matthew.Taylor@aecom.com

STEPHEN RANDALL

- *AU Certificate of Analysis - NATA (COA)	Email	Stephen.Randall@aecom.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	Stephen.Randall@aecom.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	Stephen.Randall@aecom.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	Stephen.Randall@aecom.com
- A4 - AU Tax Invoice (INV)	Email	Stephen.Randall@aecom.com
- Chain of Custody (CoC) (COC)	Email	Stephen.Randall@aecom.com
- EDI Format - ENMRG (ENMRG)	Email	Stephen.Randall@aecom.com
- EDI Format - EQUIS_V5_AECOM_SAMPLE (EQUIS_V5_AECOM_SAMPLE)	Email	Stephen.Randall@aecom.com
- EDI Format - ESDAT (ESDAT)	Email	Stephen.Randall@aecom.com
- Purchase Order Request Letter (PO_Request)	Email	Stephen.Randall@aecom.com



Environmental

CERTIFICATE OF ANALYSIS

Work Order : **ES2301184**
Client : **AECOM AUSTRALIA PTY LTD**
Contact : **MR STEPHEN RANDALL**
Address : **LEVEL 21 420 GEORGE STREET**
SYDNEY NSW, AUSTRALIA 2000
Telephone : **02 8934 0000**
Project : **60694112**
Order number : **----**
C-O-C number : **----**
Sampler : **Matthew Taylor**
Site : **Aquatic Drive DSI**
Quote number : **EN/004/21**
No. of samples received : **43**
No. of samples analysed : **29**

Page : 1 of 33
Laboratory : Environmental Division Sydney
Contact : Sepan Mahamad
Address : 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone : +61 2 8784 8555
Date Samples Received : 13-Jan-2023 15:30
Date Analysis Commenced : 17-Jan-2023
Issue Date : 20-Jan-2023 17:52



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, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results
- Surrogate Control Limits

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

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Brendan Schrader	Laboratory Technician	Newcastle - Asbestos, Mayfield West, NSW
Edwandy Fadjjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the 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 Contract 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.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) 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.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) 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.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP071: Results of sample BH14_0.2_230111 have been confirmed by re-extraction and re-analysis.
- EP080: The trip spike and its control have been analysed for volatile TPH and BTEXN only. The trip spike and control were prepared in the lab using reagent grade sand spiked with petrol. The spike was dispatched from the lab and the control retained.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	HA01_0.2_230111	HA01_0.4_230111	HA02_0.2_230111	BH03_0.2_230111	BH03_1.3_230111
Sampling date / time					13-Jan-2023 00:00	13-Jan-2023 00:00	13-Jan-2023 00:00	13-Jan-2023 00:00	13-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		ES2301184-001	ES2301184-002	ES2301184-004	ES2301184-007	ES2301184-009
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		8.4	12.4	13.3	16.3	12.5
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		No	----	No	No	----
Asbestos (Trace)	1332-21-4	5	Fibres		No	----	No	No	----
Asbestos Type	1332-21-4	-	--		-	----	-	-	----
Synthetic Mineral Fibre	----	-	--		No	----	No	No	----
Organic Fibre	----	-	--		No	----	No	No	----
Sample weight (dry)	----	0.01	g		452	----	331	269	----
APPROVED IDENTIFIER:	----	-	--		B.SCHRADER	----	B.SCHRADER	B.SCHRADER	----
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	<5	<5	12
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		16	12	11	13	18
Copper	7440-50-8	5	mg/kg		25	<5	10	14	11
Lead	7439-92-1	5	mg/kg		11	15	17	21	12
Nickel	7440-02-0	2	mg/kg		42	5	5	4	<2
Zinc	7440-66-6	5	mg/kg		42	18	34	22	<5
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				HA01_0.2_230111	HA01_0.4_230111	HA02_0.2_230111	BH03_0.2_230111	BH03_1.3_230111
Sampling date / time				13-Jan-2023 00:00	13-Jan-2023 00:00	13-Jan-2023 00:00	13-Jan-2023 00:00	13-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	ES2301184-001	ES2301184-002	ES2301184-004	ES2301184-007	ES2301184-009
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				HA01_0.2_230111	HA01_0.4_230111	HA02_0.2_230111	BH03_0.2_230111	BH03_1.3_230111
Sampling date / time				13-Jan-2023 00:00	13-Jan-2023 00:00	13-Jan-2023 00:00	13-Jan-2023 00:00	13-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	ES2301184-001	ES2301184-002	ES2301184-004	ES2301184-007	ES2301184-009
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued								
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
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
Benzo(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	HA01_0.2_230111	HA01_0.4_230111	HA02_0.2_230111	BH03_0.2_230111	BH03_1.3_230111
Sampling date / time					13-Jan-2023 00:00	13-Jan-2023 00:00	13-Jan-2023 00:00	13-Jan-2023 00:00	13-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		ES2301184-001	ES2301184-002	ES2301184-004	ES2301184-007	ES2301184-009
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
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		<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
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	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
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		69.3	73.9	62.4	52.3	64.0
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		89.3	78.9	78.1	70.3	60.1
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		81.0	76.3	77.5	77.8	75.2
2-Chlorophenol-D4	93951-73-6	0.5	%		85.7	80.3	81.6	80.6	76.3
2,4,6-Tribromophenol	118-79-6	0.5	%		73.1	72.0	71.3	74.4	65.4
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		94.5	89.2	90.4	89.9	86.1
Anthracene-d10	1719-06-8	0.5	%		95.6	90.1	92.9	91.0	87.9
4-Terphenyl-d14	1718-51-0	0.5	%		90.2	84.6	86.1	85.1	83.2



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				HA01_0.2_230111	HA01_0.4_230111	HA02_0.2_230111	BH03_0.2_230111	BH03_1.3_230111
Sampling date / time				13-Jan-2023 00:00	13-Jan-2023 00:00	13-Jan-2023 00:00	13-Jan-2023 00:00	13-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	ES2301184-001	ES2301184-002	ES2301184-004	ES2301184-007	ES2301184-009
				Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	98.6	106	112	98.8	96.1
Toluene-D8	2037-26-5	0.2	%	91.8	105	106	94.6	92.5
4-Bromofluorobenzene	460-00-4	0.2	%	95.2	97.0	98.6	90.3	84.7



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH04_0.3_230111	BH05_0.3_230112	BH06_0.2_230111	BH06_0.6_230111	BH07_0.2_230111
Sampling date / time					12-Jan-2023 00:00	12-Jan-2023 00:00	11-Jan-2023 00:00	11-Jan-2023 00:00	11-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		ES2301184-010	ES2301184-011	ES2301184-013	ES2301184-014	ES2301184-017
				Result	Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		19.5	22.0	11.4	7.2	20.4
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		No	No	No	----	No
Asbestos (Trace)	1332-21-4	5	Fibres		No	No	No	----	No
Asbestos Type	1332-21-4	-	--		-	-	-	----	-
Synthetic Mineral Fibre	----	-	--		No	No	No	----	No
Organic Fibre	----	-	--		No	No	No	----	No
Sample weight (dry)	----	0.01	g		345	481	524	----	393
APPROVED IDENTIFIER:	----	-	--		B.SCHRADER	B.SCHRADER	B.SCHRADER	----	B.SCHRADER
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		6	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		28	17	32	10	9
Copper	7440-50-8	5	mg/kg		<5	11	67	8	26
Lead	7439-92-1	5	mg/kg		16	20	32	14	10
Nickel	7440-02-0	2	mg/kg		3	5	69	<2	25
Zinc	7440-66-6	5	mg/kg		<5	41	102	9	19
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH04_0.3_230111	BH05_0.3_230112	BH06_0.2_230111	BH06_0.6_230111	BH07_0.2_230111
Sampling date / time					12-Jan-2023 00:00	12-Jan-2023 00:00	11-Jan-2023 00:00	11-Jan-2023 00:00	11-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		ES2301184-010	ES2301184-011	ES2301184-013	ES2301184-014	ES2301184-017
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				BH04_0.3_230111	BH05_0.3_230112	BH06_0.2_230111	BH06_0.6_230111	BH07_0.2_230111
Sampling date / time				12-Jan-2023 00:00	12-Jan-2023 00:00	11-Jan-2023 00:00	11-Jan-2023 00:00	11-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	ES2301184-010	ES2301184-011	ES2301184-013	ES2301184-014	ES2301184-017
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued								
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
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
Benzo(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH04_0.3_230111	BH05_0.3_230112	BH06_0.2_230111	BH06_0.6_230111	BH07_0.2_230111
Sampling date / time					12-Jan-2023 00:00	12-Jan-2023 00:00	11-Jan-2023 00:00	11-Jan-2023 00:00	11-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		ES2301184-010	ES2301184-011	ES2301184-013	ES2301184-014	ES2301184-017
				Result	Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
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		<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
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	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
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		58.7	82.1	76.4	62.0	61.4
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		61.9	81.8	94.2	71.3	59.8
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		77.0	74.3	74.7	74.9	75.5
2-Chlorophenol-D4	93951-73-6	0.5	%		80.6	75.7	78.8	79.2	78.9
2,4,6-Tribromophenol	118-79-6	0.5	%		68.0	65.0	58.5	57.9	57.5
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		89.2	87.2	88.7	88.6	89.3
Anthracene-d10	1719-06-8	0.5	%		91.2	89.0	88.6	88.2	89.9
4-Terphenyl-d14	1718-51-0	0.5	%		85.2	82.5	82.2	84.3	84.6



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				BH04_0.3_230111	BH05_0.3_230112	BH06_0.2_230111	BH06_0.6_230111	BH07_0.2_230111
Sampling date / time				12-Jan-2023 00:00	12-Jan-2023 00:00	11-Jan-2023 00:00	11-Jan-2023 00:00	11-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	ES2301184-010	ES2301184-011	ES2301184-013	ES2301184-014	ES2301184-017
				Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	103	102	116	120	112
Toluene-D8	2037-26-5	0.2	%	95.5	93.7	110	111	102
4-Bromofluorobenzene	460-00-4	0.2	%	86.9	89.3	97.7	98.5	91.6



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				BH07_0.7_230111	BH08_0.2_230112	BH08_0.7_230112	BH09_0.2_230112	BH10_0.7_230112
Sampling date / time				11-Jan-2023 00:00	12-Jan-2023 00:00	12-Jan-2023 00:00	12-Jan-2023 00:00	12-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	ES2301184-018	ES2301184-020	ES2301184-021	ES2301184-022	ES2301184-024
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	16.7	11.4	12.1	16.4	21.2
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	----	No	----	No	----
Asbestos (Trace)	1332-21-4	5	Fibres	----	No	----	No	----
Asbestos Type	1332-21-4	-	--	----	-	----	-	----
Synthetic Mineral Fibre	----	-	--	----	No	----	No	----
Organic Fibre	----	-	--	----	No	----	No	----
Sample weight (dry)	----	0.01	g	----	397	----	382	----
APPROVED IDENTIFIER:	----	-	--	----	B.SCHRADER	----	B.SCHRADER	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	6	7	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	13	10	14	9	18
Copper	7440-50-8	5	mg/kg	<5	22	21	23	<5
Lead	7439-92-1	5	mg/kg	18	16	12	12	31
Nickel	7440-02-0	2	mg/kg	<2	4	2	<2	4
Zinc	7440-66-6	5	mg/kg	<5	23	<5	6	<5
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH07_0.7_230111	BH08_0.2_230112	BH08_0.7_230112	BH09_0.2_230112	BH10_0.7_230112
Sampling date / time					11-Jan-2023 00:00	12-Jan-2023 00:00	12-Jan-2023 00:00	12-Jan-2023 00:00	12-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		ES2301184-018	ES2301184-020	ES2301184-021	ES2301184-022	ES2301184-024
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				BH07_0.7_230111	BH08_0.2_230112	BH08_0.7_230112	BH09_0.2_230112	BH10_0.7_230112
Sampling date / time				11-Jan-2023 00:00	12-Jan-2023 00:00	12-Jan-2023 00:00	12-Jan-2023 00:00	12-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	ES2301184-018	ES2301184-020	ES2301184-021	ES2301184-022	ES2301184-024
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued								
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
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
Benzo(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH07_0.7_230111	BH08_0.2_230112	BH08_0.7_230112	BH09_0.2_230112	BH10_0.7_230112
Sampling date / time					11-Jan-2023 00:00	12-Jan-2023 00:00	12-Jan-2023 00:00	12-Jan-2023 00:00	12-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		ES2301184-018	ES2301184-020	ES2301184-021	ES2301184-022	ES2301184-024
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
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		<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
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	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
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		61.0	68.4	68.1	70.9	64.9
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		54.7	72.7	61.0	82.1	69.8
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		75.2	75.0	72.9	93.8	100
2-Chlorophenol-D4	93951-73-6	0.5	%		77.2	78.2	77.0	92.4	95.9
2,4,6-Tribromophenol	118-79-6	0.5	%		59.0	55.9	54.2	68.0	60.1
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		86.3	88.0	89.1	86.1	86.9
Anthracene-d10	1719-06-8	0.5	%		87.4	89.3	85.9	104	104
4-Terphenyl-d14	1718-51-0	0.5	%		82.3	84.6	80.6	109	100



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH07_0.7_230111	BH08_0.2_230112	BH08_0.7_230112	BH09_0.2_230112	BH10_0.7_230112
Sampling date / time					11-Jan-2023 00:00	12-Jan-2023 00:00	12-Jan-2023 00:00	12-Jan-2023 00:00	12-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		ES2301184-018	ES2301184-020	ES2301184-021	ES2301184-022	ES2301184-024
				Result	Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		110	109	108	98.8	108
Toluene-D8	2037-26-5	0.2	%		101	99.2	96.7	98.4	110
4-Bromofluorobenzene	460-00-4	0.2	%		92.3	97.0	97.4	94.0	96.0



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH11_0.2_230111	BH12_0.8_230111	BH13_0.2_230111	BH13_1.0_230111	BH14_0.2_230111
Sampling date / time					11-Jan-2023 00:00	11-Jan-2023 00:00	11-Jan-2023 00:00	11-Jan-2023 00:00	11-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		ES2301184-025	ES2301184-029	ES2301184-032	ES2301184-033	ES2301184-035
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		8.9	10.3	9.9	14.4	14.5
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		No	----	No	----	No
Asbestos (Trace)	1332-21-4	5	Fibres		No	----	No	----	No
Asbestos Type	1332-21-4	-	--		-	----	-	----	-
Synthetic Mineral Fibre	----	-	--		No	----	No	----	No
Organic Fibre	----	-	--		No	----	No	----	No
Sample weight (dry)	----	0.01	g		389	----	383	----	466
APPROVED IDENTIFIER:	----	-	--		B.SCHRADER	----	B.SCHRADER	----	B.SCHRADER
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		8	10	10	6	12
Copper	7440-50-8	5	mg/kg		17	5	68	<5	54
Lead	7439-92-1	5	mg/kg		12	14	6	13	<5
Nickel	7440-02-0	2	mg/kg		9	2	63	<2	52
Zinc	7440-66-6	5	mg/kg		12	9	47	<5	35
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH11_0.2_230111	BH12_0.8_230111	BH13_0.2_230111	BH13_1.0_230111	BH14_0.2_230111
Sampling date / time					11-Jan-2023 00:00	11-Jan-2023 00:00	11-Jan-2023 00:00	11-Jan-2023 00:00	11-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		ES2301184-025	ES2301184-029	ES2301184-032	ES2301184-033	ES2301184-035
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH11_0.2_230111	BH12_0.8_230111	BH13_0.2_230111	BH13_1.0_230111	BH14_0.2_230111
Sampling date / time					11-Jan-2023 00:00	11-Jan-2023 00:00	11-Jan-2023 00:00	11-Jan-2023 00:00	11-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		ES2301184-025	ES2301184-029	ES2301184-032	ES2301184-033	ES2301184-035
					Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued									
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2,4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2,6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg		<2	<2	<2	<2	<2
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
Benzo(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
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



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH11_0.2_230111	BH12_0.8_230111	BH13_0.2_230111	BH13_1.0_230111	BH14_0.2_230111
Sampling date / time					11-Jan-2023 00:00	11-Jan-2023 00:00	11-Jan-2023 00:00	11-Jan-2023 00:00	11-Jan-2023 00:00
Compound	CAS Number	LOR	Unit		ES2301184-025	ES2301184-029	ES2301184-032	ES2301184-033	ES2301184-035
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	250
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	540
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	790
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	620
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	280
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	900
^ >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
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	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
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		86.7	81.1	103	110	94.3
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		89.2	87.1	108	114	95.1
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		97.6	101	96.7	93.0	101
2-Chlorophenol-D4	93951-73-6	0.5	%		91.3	91.7	92.6	89.4	95.1
2,4,6-Tribromophenol	118-79-6	0.5	%		60.3	59.7	58.6	57.7	53.3
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		81.3	80.6	82.6	81.7	83.6
Anthracene-d10	1719-06-8	0.5	%		100	102	101	100	100
4-Terphenyl-d14	1718-51-0	0.5	%		108	110	110	110	110



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				BH11_0.2_230111	BH12_0.8_230111	BH13_0.2_230111	BH13_1.0_230111	BH14_0.2_230111
Sampling date / time				11-Jan-2023 00:00	11-Jan-2023 00:00	11-Jan-2023 00:00	11-Jan-2023 00:00	11-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	ES2301184-025	ES2301184-029	ES2301184-032	ES2301184-033	ES2301184-035
				Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	111	106	110	108	103
Toluene-D8	2037-26-5	0.2	%	114	108	110	102	98.7
4-Bromofluorobenzene	460-00-4	0.2	%	104	95.9	100	94.3	92.4



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				BH14_0.7_230111	QC100	QC101	TB TRIP BLANK	TS TRIP SPIKE 20
Sampling date / time				11-Jan-2023 00:00	11-Jan-2023 00:00	13-Jan-2023 00:00	09-Jan-2023 00:00	10-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	ES2301184-036	ES2301184-039	ES2301184-040	ES2301184-041	ES2301184-042
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	16.4	10.6	15.8	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg	13	3	12	----	----
Copper	7440-50-8	5	mg/kg	<5	<5	66	----	----
Lead	7439-92-1	5	mg/kg	9	12	21	----	----
Nickel	7440-02-0	2	mg/kg	2	<2	7	----	----
Zinc	7440-66-6	5	mg/kg	5	<5	34	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				BH14_0.7_230111	QC100	QC101	TB TRIP BLANK	TS TRIP SPIKE 20
Sampling date / time				11-Jan-2023 00:00	11-Jan-2023 00:00	13-Jan-2023 00:00	09-Jan-2023 00:00	10-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	ES2301184-036	ES2301184-039	ES2301184-040	ES2301184-041	ES2301184-042
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	----	----
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				BH14_0.7_230111	QC100	QC101	TB TRIP BLANK	TS TRIP SPIKE 20
Sampling date / time				11-Jan-2023 00:00	11-Jan-2023 00:00	13-Jan-2023 00:00	09-Jan-2023 00:00	10-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	ES2301184-036	ES2301184-039	ES2301184-040	ES2301184-041	ES2301184-042
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued								
2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Chrysene	218-01-9	0.5	mg/kg	<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	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<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	----	----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	0.6	0.6	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	----
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	----



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				BH14_0.7_230111	QC100	QC101	TB TRIP BLANK	TS TRIP SPIKE 20
Sampling date / time				11-Jan-2023 00:00	11-Jan-2023 00:00	13-Jan-2023 00:00	09-Jan-2023 00:00	10-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	ES2301184-036	ES2301184-039	ES2301184-040	ES2301184-041	ES2301184-042
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<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	8.0
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	9.3
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	9.4
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	3.8
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	30.7
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	13.2
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	78.7	92.1	85.1	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	78.5	100	92.7	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	97.3	95.8	95.6	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	91.8	88.8	88.1	----	----
2,4,6-Tribromophenol	118-79-6	0.5	%	58.4	56.2	57.4	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	80.8	80.4	81.5	----	----
Anthracene-d10	1719-06-8	0.5	%	101	99.5	97.3	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	108	112	110	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	115	120	117	123	124
Toluene-D8	2037-26-5	0.2	%	114	116	110	106	110
4-Bromofluorobenzene	460-00-4	0.2	%	98.6	106	99.1	104	104



Analytical Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				TSC TRIP SPIKE CONTROL 20	----	----	----	----
Sampling date / time				10-Jan-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2301184-043	-----	-----	-----	-----
Result				Result	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg	8.2	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	9.8	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	10.0	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	4.1	----	----	----	----
^ Sum of BTEX	----	0.2	mg/kg	32.3	----	----	----	----
^ Total Xylenes	----	0.5	mg/kg	14.1	----	----	----	----
Naphthalene	91-20-3	1	mg/kg	<1	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.2	%	121	----	----	----	----
Toluene-D8	2037-26-5	0.2	%	108	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	103	----	----	----	----



Analytical Results

Sub-Matrix: WATER
 (Matrix: WATER)

Sample ID

				QC300_230111	QC301_230113	QC302_230113	----	----
Sampling date / time				11-Jan-2023 00:00	12-Jan-2023 00:00	13-Jan-2023 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2301184-016	ES2301184-031	ES2301184-038	-----	-----
				Result	Result	Result	----	----
EG020F: Dissolved Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	<0.001	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	<0.005	----	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	<0.5	----	----
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	<0.5	----	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	----	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	----	----
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	----	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	<0.5	----	----
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	<2.0	----	----
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	<0.5	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	----	----

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC300_230111	QC301_230113	QC302_230113	----	----
Sampling date / time					11-Jan-2023 00:00	12-Jan-2023 00:00	13-Jan-2023 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2301184-016	ES2301184-031	ES2301184-038	-----	-----	
				Result	Result	Result	----	----	

EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	<0.5	----	----	
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----	
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	<2.0	<2.0	----	----	
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	<0.5	----	----	
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	<0.5	----	----	
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	<0.5	----	----	
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	<2.0	<2.0	----	----	
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	<0.5	----	----	
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	<0.5	----	----	
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----	
Parathion	56-38-2	2.0	µg/L	<2.0	<2.0	<2.0	----	----	
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	<0.5	----	----	
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----	
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----	
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----	
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	<0.5	----	----	
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	<0.5	----	----	
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	<0.5	----	----	
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	<0.5	----	----	

Phenol	108-95-2	1.0	µg/L	<1.0	<1.0	<1.0	----	----
2-Chlorophenol	95-57-8	1.0	µg/L	<1.0	<1.0	<1.0	----	----
2-Methylphenol	95-48-7	1.0	µg/L	<1.0	<1.0	<1.0	----	----
3- & 4-Methylphenol	1319-77-3	2.0	µg/L	<2.0	<2.0	<2.0	----	----
2-Nitrophenol	88-75-5	1.0	µg/L	<1.0	<1.0	<1.0	----	----
2,4-Dimethylphenol	105-67-9	1.0	µg/L	<1.0	<1.0	<1.0	----	----
2,4-Dichlorophenol	120-83-2	1.0	µg/L	<1.0	<1.0	<1.0	----	----
2,6-Dichlorophenol	87-65-0	1.0	µg/L	<1.0	<1.0	<1.0	----	----
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L	<1.0	<1.0	<1.0	----	----
2,4,6-Trichlorophenol	88-06-2	1.0	µg/L	<1.0	<1.0	<1.0	----	----
2,4,5-Trichlorophenol	95-95-4	1.0	µg/L	<1.0	<1.0	<1.0	----	----
Pentachlorophenol	87-86-5	2.0	µg/L	<2.0	<2.0	<2.0	----	----

EP075(SIM)B: Polynuclear Aromatic Hydrocarbons

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC300_230111	QC301_230113	QC302_230113	----	----
Sampling date / time				11-Jan-2023 00:00	12-Jan-2023 00:00	13-Jan-2023 00:00	----	----	
Compound	CAS Number	LOR	Unit	ES2301184-016	ES2301184-031	ES2301184-038	-----	-----	
				Result	Result	Result	----	----	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----	
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	----	----	
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	----	----	
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	----	----	
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	----	----	
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	----	----	
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	----	----	
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	----	----	
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----	
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	----	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----	
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	----	----	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	----	----	
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	----	----	
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	----	----	
Benzo(g,h,i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	----	----	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	----	----	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	----	----	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	----	----	
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	----	----	
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	----	----	
C29 - C36 Fraction	----	50	µg/L	<50	<50	<50	----	----	
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	<50	<50	----	----	
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	<100	----	----	
>C16 - C34 Fraction	----	100	µg/L	<100	<100	<100	----	----	
>C34 - C40 Fraction	----	100	µg/L	<100	<100	<100	----	----	
^ >C10 - C40 Fraction (sum)	----	100	µg/L	<100	<100	<100	----	----	
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L	<100	<100	<100	----	----	
EP080: BTEXN									



Analytical Results

Sub-Matrix: WATER
 (Matrix: WATER)

Sample ID

				QC300_230111	QC301_230113	QC302_230113	----	----
Sampling date / time				11-Jan-2023 00:00	12-Jan-2023 00:00	13-Jan-2023 00:00	----	----
Compound	CAS Number	LOR	Unit	ES2301184-016	ES2301184-031	ES2301184-038	-----	-----
				Result	Result	Result	----	----
EP080: BTEXN - Continued								
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	----	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	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	62.8	60.7	63.2	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	63.4	60.5	60.9	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	24.3	20.7	25.0	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%	55.4	45.8	55.6	----	----
2,4,6-Tribromophenol	118-79-6	1.0	%	36.0	36.4	36.2	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	50.4	57.2	51.2	----	----
Anthracene-d10	1719-06-8	1.0	%	68.7	69.6	73.1	----	----
4-Terphenyl-d14	1718-51-0	1.0	%	75.6	85.6	80.6	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	2	%	113	110	114	----	----
Toluene-D8	2037-26-5	2	%	107	105	105	----	----
4-Bromofluorobenzene	460-00-4	2	%	104	105	104	----	----



Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	HA01_0.2_230111 - 13-Jan-2023 00:00	A soil sample.
EA200: Description	HA02_0.2_230111 - 13-Jan-2023 00:00	A soil sample.
EA200: Description	BH03_0.2_230111 - 13-Jan-2023 00:00	A soil sample.
EA200: Description	BH04_0.3_230111 - 12-Jan-2023 00:00	A soil sample.
EA200: Description	BH05_0.3_230112 - 12-Jan-2023 00:00	A soil sample.
EA200: Description	BH06_0.2_230111 - 11-Jan-2023 00:00	A soil sample.
EA200: Description	BH07_0.2_230111 - 11-Jan-2023 00:00	A soil sample.
EA200: Description	BH08_0.2_230112 - 12-Jan-2023 00:00	A soil sample.
EA200: Description	BH09_0.2_230112 - 12-Jan-2023 00:00	A soil sample.
EA200: Description	BH11_0.2_230111 - 11-Jan-2023 00:00	A soil sample.
EA200: Description	BH13_0.2_230111 - 11-Jan-2023 00:00	A soil sample.
EA200: Description	BH14_0.2_230111 - 11-Jan-2023 00:00	A soil sample.



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2,4,6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

Inter-Laboratory Testing

Analysis conducted by ALS Newcastle, NATA accreditation no. 825, site no. 1656 (Chemistry) 9854 (Biology).

(SOIL) EA200: AS 4964 - 2004 Identification of Asbestos in Soils

ANZ

FQM - Generic Chain of Custody Form

Q4AN(EV)-007-FM1

CONSULTANT: AECOM				ADDRESS: Sydney				SAMPLER: M Taylor				Destination Laboratory ALS							
PROJECT MANAGER (PM): Stephen Randall				SITE: Aquatic Drive DSI				MOBILE: 0438 588 749											
PROJECT NUMBER & TASK CODE 60694112				P.O. NO.:				EMAIL REPORT TO: matthew.taylor@aec stephen.randall@aecom.com											
RESULTS REQUIRED (Date): Standard TAT				QUOTE NO.:				ANALYSIS REQUIRED including SUITES (note - suite codes must be listed to attract suite prices)											
FOR LABORATORY USE ONLY COOLER SEAL (circle appropriate) Intact: Yes No N/A SAMPLE TEMPERATURE CHILLED: Yes No				COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:												Notes: e.g. Highly contaminated samples e.g. "High PAHs expected". Extra volume for QC or trace LORs etc.			
SAMPLE INFORMATION (note: S = Soil, W=Water)						CONTAINER INFORMATION													
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	N' jars	TRH	BTEXN	PAH	8 metals	OC/OPP			Asbestos (presence/absence)	Phenols	OC/OPP	HOLD		
	HA01_0.2_230113	S	13/01/23			2	X	X	X	X	X	X	X	X					
	HA01_0.4_230113	S	13/01/23			1	X	X	X	X	X		X	X					
	HA02_0.2_230113	S	13/01/23			2	X	X	X	X	X	X	X	X					
	BH03_0.2_230113	S	13/01/23			2	X	X	X	X	X	X	X	X					
	BH03_1.3_230113	S	13/01/23			1	X	X	X	X	X		X	X					
	BH04_0.3_230112	S	12/01/23			2	X	X	X	X	X	X	X	X					
	BH05_0.3_230112	S	12/01/23			2	X	X	X	X	X	X	X	X					
	BH06_0.2_230111	S	11/01/23			2	X	X	X	X	X	X	X	X					
	BH06_0.6_230111	S	11/01/23			1	X	X	X	X	X		X	X					
	BH07_0.2_230111	S	11/01/23			2	X	X	X	X	X	X	X	X					
	BH07_0.7_230111	S	11/01/23			1	X	X	X	X	X		X	X					
	BH08_0.2_230112	S	12/01/23			2	X	X	X	X	X	X	X	X					
	BH08_0.7_230112	S	12/01/23			1	X	X	X	X	X		X	X					
	BH09_0.2_230112	S	12/01/23			2	X	X	X	X	X	X	X	X					
	BH10_0.7_230112	S	12/01/23			1	X	X	X	X	X		X	X					
	BH11_0.2_230111	S	11/01/23			2	X	X	X	X	X	X	X	X					
	BH12_0.8_230111	S	11/01/23			1	X	X	X	X	X		X	X					
	BH13_0.2_230111	S	11/01/23			2	X	X	X	X	X	X	X	X					
	BH13_1.0_230111	S	11/01/23			1	X	X	X	X	X		X	X					
RELINQUISHED BY:						RECEIVED BY						RECEIVED BY				METHOD OF SHIPMENT			
Name: M Taylor			Date: 17/1/23			Name:			Date:			Name:		Date:		Con' Note No:			
Of: AECOM			Time:			Of:			Time:			Of:		Time:		Transport Co:			
Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.																			

Q4AN(EV)-007-FM1

COC Page 2 of 2

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: ES2301184	Page	: 1 of 15
Client	: AECOM AUSTRALIA PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR STEPHEN RANDALL	Telephone	: +61 2 8784 8555
Project	: 60694112	Date Samples Received	: 13-Jan-2023
Site	: Aquatic Drive DSI	Issue Date	: 20-Jan-2023
Sampler	: Matthew Taylor	No. of samples received	: 43
Order number	: ----	No. of samples analysed	: 29

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.
- Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

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



Regular Sample Surrogates

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP068S: Organochlorine Pesticide Surrogate	ES2301184-016	QC300_230111	Dibromo-DDE	21655-73-2	62.8 %	66.5-111 %	Recovery less than lower data quality objective
EP068S: Organochlorine Pesticide Surrogate	ES2301184-031	QC301_230113	Dibromo-DDE	21655-73-2	60.7 %	66.5-111 %	Recovery less than lower data quality objective
EP068S: Organochlorine Pesticide Surrogate	ES2301184-038	QC302_230113	Dibromo-DDE	21655-73-2	63.2 %	66.5-111 %	Recovery less than lower data quality objective
EP068T: Organophosphorus Pesticide Surrogate	ES2301184-016	QC300_230111	DEF	78-48-8	63.4 %	66.5-111 %	Recovery less than lower data quality objective
EP068T: Organophosphorus Pesticide Surrogate	ES2301184-031	QC301_230113	DEF	78-48-8	60.5 %	66.5-111 %	Recovery less than lower data quality objective
EP068T: Organophosphorus Pesticide Surrogate	ES2301184-038	QC302_230113	DEF	78-48-8	60.9 %	66.5-111 %	Recovery less than lower data quality objective

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	10	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	7	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	9	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	10	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	7	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	9	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	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation



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 (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055) BH06_0.2_230111, BH07_0.2_230111, BH11_0.2_230111, BH13_0.2_230111, BH14_0.2_230111, QC100	BH06_0.6_230111, BH07_0.7_230111, BH12_0.8_230111, BH13_1.0_230111, BH14_0.7_230111,	11-Jan-2023	----	----	----	18-Jan-2023	25-Jan-2023	✓
Soil Glass Jar - Unpreserved (EA055) BH04_0.3_230111, BH08_0.2_230112, BH09_0.2_230112,	BH05_0.3_230112, BH08_0.7_230112, BH10_0.7_230112	12-Jan-2023	----	----	----	18-Jan-2023	26-Jan-2023	✓
Soil Glass Jar - Unpreserved (EA055) HA01_0.2_230111, HA02_0.2_230111, BH03_1.3_230111,	HA01_0.4_230111, BH03_0.2_230111, QC101	13-Jan-2023	----	----	----	18-Jan-2023	27-Jan-2023	✓
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200) BH06_0.2_230111, BH11_0.2_230111, BH14_0.2_230111	BH07_0.2_230111, BH13_0.2_230111,	11-Jan-2023	----	----	----	18-Jan-2023	10-Jul-2023	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200) BH04_0.3_230111, BH08_0.2_230112,	BH05_0.3_230112, BH09_0.2_230112	12-Jan-2023	----	----	----	18-Jan-2023	11-Jul-2023	✓
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200) HA01_0.2_230111, BH03_0.2_230111	HA02_0.2_230111,	13-Jan-2023	----	----	----	18-Jan-2023	12-Jul-2023	✓
EG005(ED093)T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T) BH06_0.2_230111, BH07_0.2_230111, BH11_0.2_230111, BH13_0.2_230111, BH14_0.2_230111, QC100	BH06_0.6_230111, BH07_0.7_230111, BH12_0.8_230111, BH13_1.0_230111, BH14_0.7_230111,	11-Jan-2023	18-Jan-2023	10-Jul-2023	✓	20-Jan-2023	10-Jul-2023	✓
Soil Glass Jar - Unpreserved (EG005T) BH04_0.3_230111, BH08_0.2_230112, BH09_0.2_230112,	BH05_0.3_230112, BH08_0.7_230112, BH10_0.7_230112	12-Jan-2023	18-Jan-2023	11-Jul-2023	✓	20-Jan-2023	11-Jul-2023	✓
Soil Glass Jar - Unpreserved (EG005T) HA01_0.2_230111, HA02_0.2_230111, BH03_1.3_230111,	HA01_0.4_230111, BH03_0.2_230111, QC101	13-Jan-2023	18-Jan-2023	12-Jul-2023	✓	20-Jan-2023	12-Jul-2023	✓



Matrix: **SOIL**

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

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T) BH06_0.2_230111, BH07_0.2_230111, BH11_0.2_230111, BH13_0.2_230111, BH14_0.2_230111, QC100	BH06_0.6_230111, BH07_0.7_230111, BH12_0.8_230111, BH13_1.0_230111, BH14_0.7_230111,	11-Jan-2023	18-Jan-2023	08-Feb-2023	✓	20-Jan-2023	08-Feb-2023	✓
Soil Glass Jar - Unpreserved (EG035T) BH04_0.3_230111, BH08_0.2_230112, BH09_0.2_230112,	BH05_0.3_230112, BH08_0.7_230112, BH10_0.7_230112	12-Jan-2023	18-Jan-2023	09-Feb-2023	✓	20-Jan-2023	09-Feb-2023	✓
Soil Glass Jar - Unpreserved (EG035T) HA01_0.2_230111, HA02_0.2_230111, BH03_1.3_23011,	HA01_0.4_230111, BH03_0.2_230111, QC101	13-Jan-2023	18-Jan-2023	10-Feb-2023	✓	20-Jan-2023	10-Feb-2023	✓
EP068A: Organochlorine Pesticides (OC)								
Soil Glass Jar - Unpreserved (EP068) BH06_0.2_230111, BH07_0.2_230111,	BH06_0.6_230111, BH07_0.7_230111	11-Jan-2023	17-Jan-2023	25-Jan-2023	✓	20-Jan-2023	26-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP068) BH11_0.2_230111, BH13_0.2_230111, BH14_0.2_230111, QC100	BH12_0.8_230111, BH13_1.0_230111, BH14_0.7_230111,	11-Jan-2023	18-Jan-2023	25-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP068) BH04_0.3_230111, BH08_0.2_230112,	BH05_0.3_230112, BH08_0.7_230112	12-Jan-2023	17-Jan-2023	26-Jan-2023	✓	20-Jan-2023	26-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP068) BH09_0.2_230112,	BH10_0.7_230112	12-Jan-2023	18-Jan-2023	26-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP068) HA01_0.2_230111, HA02_0.2_230111, BH03_1.3_23011	HA01_0.4_230111, BH03_0.2_230111,	13-Jan-2023	17-Jan-2023	27-Jan-2023	✓	20-Jan-2023	26-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP068) QC101		13-Jan-2023	18-Jan-2023	27-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓



Matrix: **SOIL**

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

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP068B: Organophosphorus Pesticides (OP)								
Soil Glass Jar - Unpreserved (EP068) BH06_0.2_230111, BH07_0.2_230111,	BH06_0.6_230111, BH07_0.7_230111	11-Jan-2023	17-Jan-2023	25-Jan-2023	✓	20-Jan-2023	26-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP068) BH11_0.2_230111, BH13_0.2_230111, BH14_0.2_230111, QC100	BH12_0.8_230111, BH13_1.0_230111, BH14_0.7_230111,	11-Jan-2023	18-Jan-2023	25-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP068) BH04_0.3_230111, BH08_0.2_230112,	BH05_0.3_230112, BH08_0.7_230112	12-Jan-2023	17-Jan-2023	26-Jan-2023	✓	20-Jan-2023	26-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP068) BH09_0.2_230112,	BH10_0.7_230112	12-Jan-2023	18-Jan-2023	26-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP068) HA01_0.2_230111, HA02_0.2_230111, BH03_1.3_23011	HA01_0.4_230111, BH03_0.2_230111,	13-Jan-2023	17-Jan-2023	27-Jan-2023	✓	20-Jan-2023	26-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP068) QC101		13-Jan-2023	18-Jan-2023	27-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
EP075(SIM)A: Phenolic Compounds								
Soil Glass Jar - Unpreserved (EP075(SIM)) BH06_0.2_230111, BH07_0.2_230111,	BH06_0.6_230111, BH07_0.7_230111	11-Jan-2023	17-Jan-2023	25-Jan-2023	✓	20-Jan-2023	26-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) BH11_0.2_230111, BH13_0.2_230111, BH14_0.2_230111, QC100	BH12_0.8_230111, BH13_1.0_230111, BH14_0.7_230111,	11-Jan-2023	18-Jan-2023	25-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) BH04_0.3_230111, BH08_0.2_230112,	BH05_0.3_230112, BH08_0.7_230112	12-Jan-2023	17-Jan-2023	26-Jan-2023	✓	20-Jan-2023	26-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) BH09_0.2_230112,	BH10_0.7_230112	12-Jan-2023	18-Jan-2023	26-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) HA01_0.2_230111, HA02_0.2_230111, BH03_1.3_23011	HA01_0.4_230111, BH03_0.2_230111,	13-Jan-2023	17-Jan-2023	27-Jan-2023	✓	20-Jan-2023	26-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) QC101		13-Jan-2023	18-Jan-2023	27-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓



Matrix: **SOIL**

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

Method	Sample Date	Extraction / Preparation			Analysis			
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Soil Glass Jar - Unpreserved (EP075(SIM)) BH06_0.2_230111, BH07_0.2_230111,	BH06_0.6_230111, BH07_0.7_230111	11-Jan-2023	17-Jan-2023	25-Jan-2023	✓	20-Jan-2023	26-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) BH11_0.2_230111, BH13_0.2_230111, BH14_0.2_230111, QC100	BH12_0.8_230111, BH13_1.0_230111, BH14_0.7_230111,	11-Jan-2023	18-Jan-2023	25-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) BH04_0.3_230111, BH08_0.2_230112,	BH05_0.3_230112, BH08_0.7_230112	12-Jan-2023	17-Jan-2023	26-Jan-2023	✓	20-Jan-2023	26-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) BH09_0.2_230112,	BH10_0.7_230112	12-Jan-2023	18-Jan-2023	26-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) HA01_0.2_230111, HA02_0.2_230111, BH03_1.3_23011	HA01_0.4_230111, BH03_0.2_230111,	13-Jan-2023	17-Jan-2023	27-Jan-2023	✓	20-Jan-2023	26-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) QC101		13-Jan-2023	18-Jan-2023	27-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓



Matrix: **SOIL**

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

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons								
Soil Glass Jar - Unpreserved (EP080) TB - TRIP BLANK		09-Jan-2023	17-Jan-2023	23-Jan-2023	✓	19-Jan-2023	23-Jan-2023	✓
Soil Glass Jar - Unpreserved (EP080) BH06_0.2_230111, BH07_0.2_230111,		11-Jan-2023	17-Jan-2023	25-Jan-2023	✓	18-Jan-2023	25-Jan-2023	✓
Soil Glass Jar - Unpreserved (EP080) BH11_0.2_230111, BH13_0.2_230111, BH14_0.2_230111, QC100		11-Jan-2023	17-Jan-2023	25-Jan-2023	✓	19-Jan-2023	25-Jan-2023	✓
Soil Glass Jar - Unpreserved (EP071) BH06_0.2_230111, BH07_0.2_230111,		11-Jan-2023	17-Jan-2023	25-Jan-2023	✓	20-Jan-2023	26-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP071) BH11_0.2_230111, BH13_0.2_230111, BH14_0.2_230111, QC100		11-Jan-2023	18-Jan-2023	25-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP080) BH04_0.3_230111, BH08_0.2_230112,		12-Jan-2023	17-Jan-2023	26-Jan-2023	✓	18-Jan-2023	26-Jan-2023	✓
Soil Glass Jar - Unpreserved (EP080) BH09_0.2_230112,		12-Jan-2023	17-Jan-2023	26-Jan-2023	✓	19-Jan-2023	26-Jan-2023	✓
Soil Glass Jar - Unpreserved (EP071) BH04_0.3_230111, BH08_0.2_230112,		12-Jan-2023	17-Jan-2023	26-Jan-2023	✓	20-Jan-2023	26-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP071) BH09_0.2_230112,		12-Jan-2023	18-Jan-2023	26-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP080) HA01_0.2_230111, HA02_0.2_230111, BH03_1.3_23011		13-Jan-2023	17-Jan-2023	27-Jan-2023	✓	18-Jan-2023	27-Jan-2023	✓
Soil Glass Jar - Unpreserved (EP080) QC101		13-Jan-2023	17-Jan-2023	27-Jan-2023	✓	19-Jan-2023	27-Jan-2023	✓
Soil Glass Jar - Unpreserved (EP071) HA01_0.2_230111, HA02_0.2_230111, BH03_1.3_23011		13-Jan-2023	17-Jan-2023	27-Jan-2023	✓	20-Jan-2023	26-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP071) QC101		13-Jan-2023	18-Jan-2023	27-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓



Matrix: **SOIL**

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

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Soil Glass Jar - Unpreserved (EP080) TB - TRIP BLANK		09-Jan-2023	17-Jan-2023	23-Jan-2023	✓	19-Jan-2023	23-Jan-2023	✓
Soil Glass Jar - Unpreserved (EP080) BH06_0.2_230111, BH07_0.2_230111,		11-Jan-2023	17-Jan-2023	25-Jan-2023	✓	18-Jan-2023	25-Jan-2023	✓
Soil Glass Jar - Unpreserved (EP080) BH11_0.2_230111, BH13_0.2_230111, BH14_0.2_230111, QC100		11-Jan-2023	17-Jan-2023	25-Jan-2023	✓	19-Jan-2023	25-Jan-2023	✓
Soil Glass Jar - Unpreserved (EP071) BH06_0.2_230111, BH07_0.2_230111,		11-Jan-2023	17-Jan-2023	25-Jan-2023	✓	20-Jan-2023	26-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP071) BH11_0.2_230111, BH13_0.2_230111, BH14_0.2_230111, QC100		11-Jan-2023	18-Jan-2023	25-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP080) BH04_0.3_230111, BH08_0.2_230112,		12-Jan-2023	17-Jan-2023	26-Jan-2023	✓	18-Jan-2023	26-Jan-2023	✓
Soil Glass Jar - Unpreserved (EP080) BH09_0.2_230112,		12-Jan-2023	17-Jan-2023	26-Jan-2023	✓	19-Jan-2023	26-Jan-2023	✓
Soil Glass Jar - Unpreserved (EP071) BH04_0.3_230111, BH08_0.2_230112,		12-Jan-2023	17-Jan-2023	26-Jan-2023	✓	20-Jan-2023	26-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP071) BH09_0.2_230112,		12-Jan-2023	18-Jan-2023	26-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP080) HA01_0.2_230111, HA02_0.2_230111, BH03_1.3_23011		13-Jan-2023	17-Jan-2023	27-Jan-2023	✓	18-Jan-2023	27-Jan-2023	✓
Soil Glass Jar - Unpreserved (EP080) QC101		13-Jan-2023	17-Jan-2023	27-Jan-2023	✓	19-Jan-2023	27-Jan-2023	✓
Soil Glass Jar - Unpreserved (EP071) HA01_0.2_230111, HA02_0.2_230111, BH03_1.3_23011		13-Jan-2023	17-Jan-2023	27-Jan-2023	✓	20-Jan-2023	26-Feb-2023	✓
Soil Glass Jar - Unpreserved (EP071) QC101		13-Jan-2023	18-Jan-2023	27-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓



Matrix: **SOIL**

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

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) TB - TRIP BLANK	09-Jan-2023	17-Jan-2023	23-Jan-2023	✓	19-Jan-2023	23-Jan-2023	✓
Soil Glass Jar - Unpreserved (EP080) TS - TRIP SPIKE 20, TSC - TRIP SPIKE CONTROL 20	10-Jan-2023	17-Jan-2023	24-Jan-2023	✓	19-Jan-2023	24-Jan-2023	✓
Soil Glass Jar - Unpreserved (EP080) BH06_0.2_230111, BH07_0.2_230111,	11-Jan-2023	17-Jan-2023	25-Jan-2023	✓	18-Jan-2023	25-Jan-2023	✓
Soil Glass Jar - Unpreserved (EP080) BH11_0.2_230111, BH13_0.2_230111, BH14_0.2_230111, QC100	11-Jan-2023	17-Jan-2023	25-Jan-2023	✓	19-Jan-2023	25-Jan-2023	✓
Soil Glass Jar - Unpreserved (EP080) BH04_0.3_230111, BH08_0.2_230112,	12-Jan-2023	17-Jan-2023	26-Jan-2023	✓	18-Jan-2023	26-Jan-2023	✓
Soil Glass Jar - Unpreserved (EP080) BH09_0.2_230112,	12-Jan-2023	17-Jan-2023	26-Jan-2023	✓	19-Jan-2023	26-Jan-2023	✓
Soil Glass Jar - Unpreserved (EP080) HA01_0.2_230111, HA02_0.2_230111, BH03_1.3_23011	13-Jan-2023	17-Jan-2023	27-Jan-2023	✓	18-Jan-2023	27-Jan-2023	✓
Soil Glass Jar - Unpreserved (EP080) QC101	13-Jan-2023	17-Jan-2023	27-Jan-2023	✓	19-Jan-2023	27-Jan-2023	✓

Matrix: **WATER**

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

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) QC300_230111	11-Jan-2023	----	----	----	20-Jan-2023	10-Jul-2023	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) QC301_230113	12-Jan-2023	----	----	----	20-Jan-2023	11-Jul-2023	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) QC302_230113	13-Jan-2023	----	----	----	20-Jan-2023	12-Jul-2023	✓
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) QC300_230111	11-Jan-2023	----	----	----	20-Jan-2023	08-Feb-2023	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) QC301_230113	12-Jan-2023	----	----	----	20-Jan-2023	09-Feb-2023	✓
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) QC302_230113	13-Jan-2023	----	----	----	20-Jan-2023	10-Feb-2023	✓



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068) QC300_230111	11-Jan-2023	18-Jan-2023	18-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
Amber Glass Bottle - Unpreserved (EP068) QC301_230113	12-Jan-2023	18-Jan-2023	19-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
Amber Glass Bottle - Unpreserved (EP068) QC302_230113	13-Jan-2023	18-Jan-2023	20-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068) QC300_230111	11-Jan-2023	18-Jan-2023	18-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
Amber Glass Bottle - Unpreserved (EP068) QC301_230113	12-Jan-2023	18-Jan-2023	19-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
Amber Glass Bottle - Unpreserved (EP068) QC302_230113	13-Jan-2023	18-Jan-2023	20-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
EP075(SIM)A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075(SIM)) QC300_230111	11-Jan-2023	18-Jan-2023	18-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
Amber Glass Bottle - Unpreserved (EP075(SIM)) QC301_230113	12-Jan-2023	18-Jan-2023	19-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
Amber Glass Bottle - Unpreserved (EP075(SIM)) QC302_230113	13-Jan-2023	18-Jan-2023	20-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) QC300_230111	11-Jan-2023	18-Jan-2023	18-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
Amber Glass Bottle - Unpreserved (EP075(SIM)) QC301_230113	12-Jan-2023	18-Jan-2023	19-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
Amber Glass Bottle - Unpreserved (EP075(SIM)) QC302_230113	13-Jan-2023	18-Jan-2023	20-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) QC300_230111	11-Jan-2023	18-Jan-2023	18-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
Amber Glass Bottle - Unpreserved (EP071) QC301_230113	12-Jan-2023	18-Jan-2023	19-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
Amber Glass Bottle - Unpreserved (EP071) QC302_230113	13-Jan-2023	18-Jan-2023	20-Jan-2023	✓	20-Jan-2023	27-Feb-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) QC300_230111	11-Jan-2023	19-Jan-2023	25-Jan-2023	✓	19-Jan-2023	25-Jan-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) QC301_230113	12-Jan-2023	19-Jan-2023	26-Jan-2023	✓	19-Jan-2023	26-Jan-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) QC302_230113	13-Jan-2023	19-Jan-2023	27-Jan-2023	✓	19-Jan-2023	27-Jan-2023	✓



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		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) QC300_230111	11-Jan-2023	18-Jan-2023	18-Jan-2023	✔	20-Jan-2023	27-Feb-2023	✔
Amber Glass Bottle - Unpreserved (EP071) QC301_230113	12-Jan-2023	18-Jan-2023	19-Jan-2023	✔	20-Jan-2023	27-Feb-2023	✔
Amber Glass Bottle - Unpreserved (EP071) QC302_230113	13-Jan-2023	18-Jan-2023	20-Jan-2023	✔	20-Jan-2023	27-Feb-2023	✔
Amber VOC Vial - Sulfuric Acid (EP080) QC300_230111	11-Jan-2023	19-Jan-2023	25-Jan-2023	✔	19-Jan-2023	25-Jan-2023	✔
Amber VOC Vial - Sulfuric Acid (EP080) QC301_230113	12-Jan-2023	19-Jan-2023	26-Jan-2023	✔	19-Jan-2023	26-Jan-2023	✔
Amber VOC Vial - Sulfuric Acid (EP080) QC302_230113	13-Jan-2023	19-Jan-2023	27-Jan-2023	✔	19-Jan-2023	27-Jan-2023	✔
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080) QC300_230111	11-Jan-2023	19-Jan-2023	25-Jan-2023	✔	19-Jan-2023	25-Jan-2023	✔
Amber VOC Vial - Sulfuric Acid (EP080) QC301_230113	12-Jan-2023	19-Jan-2023	26-Jan-2023	✔	19-Jan-2023	26-Jan-2023	✔
Amber VOC Vial - Sulfuric Acid (EP080) QC302_230113	13-Jan-2023	19-Jan-2023	27-Jan-2023	✔	19-Jan-2023	27-Jan-2023	✔



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	4	26	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	4	23	17.39	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	4	23	17.39	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	26	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	4	26	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	4	23	17.39	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	26	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	23	8.70	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	26	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Dissolved Mercury by FIMS	EG035F	1	9	11.11	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	14	14.29	10.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	10	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard



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) - Continued							
Pesticides by GCMS	EP068	0	7	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	9	0.00	10.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	9	11.11	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	14	7.14	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	10	10.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	7	14.29	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	9	11.11	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	9	11.11	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	14	7.14	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	10	10.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	7	14.29	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	9	11.11	5.00	✔	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	9	11.11	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	14	7.14	5.00	✔	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	10	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	7	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	9	0.00	5.00	✖	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard



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	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Asbestos Identification in Soils	EA200	SOIL	AS 4964 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
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 Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl ₂) (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 SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. 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 Schedule B(3)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)



Analytical Methods	Method	Matrix	Method Descriptions
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 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 Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 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 Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 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 Schedule B(3)
Preparation Methods	Method	Matrix	Method Descriptions
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 Schedule B(3).
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.
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM 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 purging.



Environmental

QUALITY CONTROL REPORT

Work Order : ES2301184

Page : 1 of 25

Client : AECOM AUSTRALIA PTY LTD
Contact : MR STEPHEN RANDALL
Address : LEVEL 21 420 GEORGE STREET
SYDNEY NSW, AUSTRALIA 2000
Telephone : 02 8934 0000
Project : 60694112
Order number : ----
C-O-C number : ----
Sampler : Matthew Taylor
Site : Aquatic Drive DSI
Quote number : EN/004/21
No. of samples received : 43
No. of samples analysed : 29

Laboratory : Environmental Division Sydney
Contact : Sepan Mahamad
Address : 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone : +61 2 8784 8555
Date Samples Received : 13-Jan-2023
Date Analysis Commenced : 17-Jan-2023
Issue Date : 20-Jan-2023



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, unless the sampling was conducted by ALS. 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
Brendan Schrader	Laboratory Technician	Newcastle - Asbestos, Mayfield West, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the 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.

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	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 4821613)									
ES2300935-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	3	4	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	8	7	17.2	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	230	248	7.5	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	18	14	27.5	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	79	62	23.2	0% - 50%
ES2301184-008	BH03_0.8_230111	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	8	10	14.8	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	7	9	22.3	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	10	11	11.1	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.0	No Limit
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 4821614)									
ES2301184-019	BH07_1.7_230111	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	7	11	48.4	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	4	5	27.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	7	8	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	13	16	21.3	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	29	37	26.0	No Limit
ES2301184-029	BH12_0.8_230111	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	10	8	14.4	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 4821614) - continued									
ES2301184-029	BH12_0.8_230111	EG005T: Nickel	7440-02-0	2	mg/kg	2	2	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	5	5	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	14	12	16.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	9	8	12.6	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4821616)									
ES2301040-002	Anonymous	EA055: Moisture Content	----	0.1	%	18.7	18.7	0.0	0% - 50%
ES2301184-011	BH05_0.3_230112	EA055: Moisture Content	----	0.1	%	22.0	26.0	16.4	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4821617)									
ES2301184-021	BH08_0.7_230112	EA055: Moisture Content	----	0.1	%	12.1	10.4	15.1	0% - 50%
ES2301184-033	BH13_1.0_230111	EA055: Moisture Content	----	0.1	%	14.4	16.1	11.2	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4821612)									
ES2300935-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2301184-008	BH03_0.8_230111	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4821615)									
ES2301184-019	BH07_1.7_230111	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2301184-029	BH12_0.8_230111	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4818453)									
ES2301184-001	HA01_0.2_230111	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxyvchlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4818453) - continued									
ES2301184-011	BH05_0.3_230112	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4818457)									
ES2301184-022	BH09_0.2_230112	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4818457) - continued									
ES2301184-022	BH09_0.2_230112	EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2301184-033	BH13_1.0_230111	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 4818453)									
ES2301184-001	HA01_0.2_230111	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 4818453) - continued									
ES2301184-001	HA01_0.2_230111	EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2301184-011	BH05_0.3_230112	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068B: Organophosphorus Pesticides (OP) (QC Lot: 4818457)							
ES2301184-022	BH09_0.2_230112	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 4818457) - continued									
ES2301184-022	BH09_0.2_230112	EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2301184-033	BH13_1.0_230111	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP075(SIM)A: Phenolic Compounds (QC Lot: 4818455)							
ES2301184-001	HA01_0.2_230111	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
		ES2301184-011	BH05_0.3_230112	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5
EP075(SIM): 2-Chlorophenol	95-57-8			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2-Methylphenol	95-48-7			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2-Nitrophenol	88-75-5			0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM): 2.4-Dimethylphenol	105-67-9			0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP075(SIM)A: Phenolic Compounds (QC Lot: 4818455) - continued									
ES2301184-011	BH05_0.3_230112	EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 4818459)									
ES2301184-022	BH09_0.2_230112	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
ES2301184-033	BH13_1.0_230111	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4818455)									
ES2301184-001	HA01_0.2_230111	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report						
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4818455) - continued										
ES2301184-001	HA01_0.2_230111	EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
			205-82-3							
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
	EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
ES2301184-011	BH05_0.3_230112	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
			205-82-3							
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
			EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4818459)								
ES2301184-022	BH09_0.2_230112	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit	



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report							
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)		
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4818459) - continued											
ES2301184-022	BH09_0.2_230112	EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
ES2301184-033	BH13_1.0_230111	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit		
		EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4818254)									
		ES2301184-001	HA01_0.2_230111	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2301184-011	BH05_0.3_230112	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit		
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4818256)											
ES2301184-022	BH09_0.2_230112	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit		
ES2301184-033	BH13_1.0_230111	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit		



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4818454)									
ES2301184-001	HA01_0.2_230111	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2301184-011	BH05_0.3_230112	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4818458)									
ES2301184-022	BH09_0.2_230112	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2301184-033	BH13_1.0_230111	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4818254)									
ES2301184-001	HA01_0.2_230111	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2301184-011	BH05_0.3_230112	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4818256)									
ES2301184-022	BH09_0.2_230112	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2301184-033	BH13_1.0_230111	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4818454)									
ES2301184-001	HA01_0.2_230111	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2301184-011	BH05_0.3_230112	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4818458)									
ES2301184-022	BH09_0.2_230112	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2301184-033	BH13_1.0_230111	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080: BTEXN (QC Lot: 4818254)									
ES2301184-001	HA01_0.2_230111	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080: BTEXN (QC Lot: 4818254) - continued									
ES2301184-001	HA01_0.2_230111	EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES2301184-011	BH05_0.3_230112	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EP080: BTEXN (QC Lot: 4818256)									
ES2301184-022	BH09_0.2_230112	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES2301184-033	BH13_1.0_230111	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4823162)									
ES2301133-004	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.010	0.012	16.0	No Limit
ES2301223-002	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.005	0.003	42.1	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.006	0.006	0.0	No Limit



Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4823162) - continued									
ES2301223-002	Anonymous	EG020A-F: Zinc	7440-66-6	0.005	mg/L	0.008	0.008	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 4823160)									
ES2301099-002	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4821412)									
ES2301128-002	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2301304-005	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4821412)									
ES2301128-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2301304-005	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 4821412)									
ES2301128-002	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
ES2301304-005	Anonymous	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit



Method Blank (MB) and Laboratory Control Sample (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 Sample (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**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4821613)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	95.8	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	93.6	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	115	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	104	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	104	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	103	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	93.0	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4821614)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	95.2	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	93.4	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	114	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	104	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	103	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	103	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	91.8	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4821612)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	97.1	70.0	125
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4821615)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	108	70.0	125
EP068A: Organochlorine Pesticides (OC) (QCLot: 4818453)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	93.6	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	95.5	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	96.2	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	96.0	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	92.3	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	92.3	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	95.3	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	95.0	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	94.2	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.2	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	92.8	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	92.6	66.0	116
EP068: 4,4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	91.1	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	94.1	67.0	123



Sub-Matrix: **SOIL**

Method: Compound				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%)	
							Low	High
CAS Number	LOR	Unit	Result					
EP068A: Organochlorine Pesticides (OC) (QCLot: 4818453) - continued								
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	95.8	69.0	115
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.4	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	88.0	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	93.2	62.0	124
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	94.7	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	93.0	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	92.4	54.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 4818457)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	86.5	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	85.8	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	89.2	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	87.5	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	87.1	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	84.8	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	86.2	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	89.2	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	85.8	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	97.1	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	86.6	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	88.6	66.0	116
EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	91.2	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	85.7	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	89.0	69.0	115
EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	92.6	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	79.6	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	80.8	62.0	124
EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	79.9	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	83.3	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	88.0	54.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4818453)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	90.8	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	102	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	77.2	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	90.6	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	88.4	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	92.9	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	91.6	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	89.7	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	91.8	69.0	117



Sub-Matrix: **SOIL**

Method: Compound				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%)	
							Low	High
CAS Number	LOR	Unit	Result					
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4818453) - continued								
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	87.7	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	86.6	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	95.2	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	87.4	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	94.4	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	91.0	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	95.7	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	91.8	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	94.3	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	75.1	41.0	123
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4818457)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	78.6	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	81.5	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	76.8	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	85.9	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	103	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	91.5	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	76.3	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	99.0	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	92.5	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	95.8	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	79.5	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	105	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	92.0	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	88.7	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	82.2	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	93.4	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	105	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	102	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	75.5	41.0	123
EP075(SIM)A: Phenolic Compounds (QCLot: 4818455)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	6 mg/kg	87.3	71.0	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	6 mg/kg	88.2	72.0	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	6 mg/kg	89.9	71.0	123
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	12 mg/kg	94.2	67.0	127
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	6 mg/kg	73.6	54.0	114
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	6 mg/kg	92.9	68.0	126
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	6 mg/kg	82.4	66.0	120
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	6 mg/kg	87.8	70.0	120



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP075(SIM)A: Phenolic Compounds (QCLot: 4818455) - continued								
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	6 mg/kg	79.1	70.0	116
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	6 mg/kg	87.7	54.0	114
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	6 mg/kg	89.6	60.0	114
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	12 mg/kg	52.5	10.0	80.0
EP075(SIM)A: Phenolic Compounds (QCLot: 4818459)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	6 mg/kg	96.1	71.0	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	6 mg/kg	90.6	72.0	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	6 mg/kg	89.1	71.0	123
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	12 mg/kg	93.0	67.0	127
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	6 mg/kg	82.3	54.0	114
EP075(SIM): 2,4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	6 mg/kg	94.7	68.0	126
EP075(SIM): 2,4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	6 mg/kg	93.6	66.0	120
EP075(SIM): 2,6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	6 mg/kg	90.1	70.0	120
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	6 mg/kg	92.4	70.0	116
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	6 mg/kg	82.7	54.0	114
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	6 mg/kg	82.9	60.0	114
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	12 mg/kg	39.2	10.0	80.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4818455)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	92.1	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	94.6	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	95.6	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	97.7	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	95.8	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	90.5	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	96.1	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	97.1	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	86.4	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	92.6	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	6 mg/kg	84.0	68.0	116
	205-82-3							
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	96.8	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	83.9	70.0	126
EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	90.5	61.0	121
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	92.1	62.0	118
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	87.5	63.0	121
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4818459)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	98.8	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	93.0	72.0	124



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4818459) - continued								
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	94.2	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	93.7	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	96.8	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	96.2	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	90.9	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	88.8	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	89.2	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	91.3	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	6 mg/kg	87.5	68.0	116
	205-82-3							
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	91.6	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	93.3	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	70.7	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	70.8	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	70.2	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4818254)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	107	68.4	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4818256)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	102	68.4	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4818454)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	93.0	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	89.7	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	90.7	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4818458)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	111	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	105	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	107	71.0	129
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4818254)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	106	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4818256)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	98.6	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4818454)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	93.9	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	88.1	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	92.0	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4818458)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	108	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	103	74.0	138



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit		Result	Spike	Spike Recovery (%)	Acceptable Limits (%)
				Concentration		LCS	Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4818458) - continued								
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	107	63.0	131
EP080: BTEXN (QCLot: 4818254)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	107	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	107	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	108	65.0	117
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	107	66.0	118
	106-42-3							
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	104	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	96.9	63.0	119
EP080: BTEXN (QCLot: 4818256)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	108	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	113	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	108	65.0	117
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	113	66.0	118
	106-42-3							
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	112	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	114	63.0	119
Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
Method: Compound	CAS Number	LOR	Unit		Result	Spike	Spike Recovery (%)	Acceptable Limits (%)
				Concentration		LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4823162)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	98.1	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	96.3	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	93.6	85.0	111
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	94.7	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	96.6	83.0	111
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	96.9	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	96.8	81.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 4823160)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	93.4	83.0	105
EP068A: Organochlorine Pesticides (OC) (QCLot: 4818477)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	90.5	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	89.9	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	93.6	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	92.5	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	94.7	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	89.6	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	93.5	65.8	109



Sub-Matrix: **WATER**

Method: Compound				Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%)	
							Low	High
CAS Number	LOR	Unit						
EP068A: Organochlorine Pesticides (OC) (QCLot: 4818477) - continued								
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	96.5	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	99.8	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	98.5	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	98.1	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	94.1	65.2	113
EP068: 4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	100	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	99.7	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	99.6	67.3	114
EP068: 4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	99.9	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	88.5	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	78.8	65.2	112
EP068: 4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	83.6	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	81.6	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	74.0	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4818477)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	85.6	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	101	63.7	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	24.4	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	94.7	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	103	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	97.6	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	83.0	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	107	68.4	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	99.7	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	97.7	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	84.0	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	99.1	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	94.0	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	100	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	87.8	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	101	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	97.4	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	81.8	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	81.2	51.6	128
EP075(SIM)A: Phenolic Compounds (QCLot: 4818475)								
EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	5 µg/L	47.5	24.5	61.9
EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	5 µg/L	78.4	52.0	90.0
EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	5 µg/L	78.3	51.0	91.0
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	10 µg/L	64.7	44.0	88.0



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP075(SIM)A: Phenolic Compounds (QCLot: 4818475) - continued								
EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	5 µg/L	67.9	48.0	100
EP075(SIM): 2,4-Dimethylphenol	105-67-9	1	µg/L	<1.0	5 µg/L	73.7	49.0	99.0
EP075(SIM): 2,4-Dichlorophenol	120-83-2	1	µg/L	<1.0	5 µg/L	79.0	53.0	105
EP075(SIM): 2,6-Dichlorophenol	87-65-0	1	µg/L	<1.0	5 µg/L	80.2	57.0	105
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	5 µg/L	83.6	53.0	99.0
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	1	µg/L	<1.0	5 µg/L	86.3	50.0	106
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	1	µg/L	<1.0	5 µg/L	77.8	51.0	105
EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	10 µg/L	42.4	10.0	95.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4818475)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	76.1	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	97.4	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	91.1	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	90.9	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	95.1	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	73.7	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	88.8	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	89.4	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	85.6	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	102	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	1	µg/L	<1.0	5 µg/L	86.0	61.7	119
	205-82-3							
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	99.9	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	89.3	63.3	117
EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	98.0	59.9	118
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	90.8	61.2	117
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	81.7	59.1	118
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4818476)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	400 µg/L	81.0	53.7	97.0
EP071: C15 - C28 Fraction	----	100	µg/L	<100	600 µg/L	87.0	63.3	107
EP071: C29 - C36 Fraction	----	50	µg/L	<50	400 µg/L	95.1	58.3	120
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4821412)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	109	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4818476)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	500 µg/L	76.6	53.9	95.5
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	700 µg/L	94.1	57.8	110
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	300 µg/L	89.8	50.5	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4821412)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	116	75.0	127



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP080: BTEXN (QCLot: 4821412)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	92.8	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	110	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	112	70.0	120
EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	10 µg/L	112	69.0	121
	106-42-3							
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	113	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	106	70.0	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: **SOIL**

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4821613)							
ES2300935-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	95.1	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	96.2	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	98.5	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	104	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	94.8	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	95.4	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	90.0	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4821614)							
ES2301184-019	BH07_1.7_230111	EG005T: Arsenic	7440-38-2	50 mg/kg	104	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	106	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	113	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	105	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	106	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	108	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	110	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4821612)							
ES2300935-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	101	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4821615)							
ES2301184-019	BH07_1.7_230111	EG035T: Mercury	7439-97-6	5 mg/kg	106	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 4818453)							
ES2301184-001	HA01_0.2_230111	EP068: gamma-BHC	58-89-9	0.5 mg/kg	95.6	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	86.5	70.0	130

Page : 23 of 25
 Work Order : ES2301184
 Client : AECOM AUSTRALIA PTY LTD
 Project : 60694112



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 4818453) - continued							
ES2301184-001	HA01_0.2_230111	EP068: Aldrin	309-00-2	0.5 mg/kg	91.4	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	94.8	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	84.4	70.0	130
		EP068: 4.4'-DDT	50-29-3	2 mg/kg	87.6	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 4818457)							
ES2301184-022	BH09_0.2_230112	EP068: gamma-BHC	58-89-9	0.5 mg/kg	101	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	101	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	102	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	112	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	105	70.0	130
		EP068: 4.4'-DDT	50-29-3	2 mg/kg	96.2	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4818453)							
ES2301184-001	HA01_0.2_230111	EP068: Diazinon	333-41-5	0.5 mg/kg	82.0	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	83.7	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	84.0	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	87.9	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	77.6	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4818457)							
ES2301184-022	BH09_0.2_230112	EP068: Diazinon	333-41-5	0.5 mg/kg	88.5	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	107	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	105	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	102	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	75.9	70.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 4818455)							
ES2301184-001	HA01_0.2_230111	EP075(SIM): Phenol	108-95-2	10 mg/kg	87.4	70.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	87.9	70.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	78.1	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	79.8	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	70.8	20.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 4818459)							
ES2301184-022	BH09_0.2_230112	EP075(SIM): Phenol	108-95-2	10 mg/kg	92.8	70.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	82.2	70.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	78.1	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	94.2	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	48.0	20.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4818455)							
ES2301184-001	HA01_0.2_230111	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	94.9	70.0	130



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4818455) - continued							
ES2301184-001	HA01_0.2_230111	EP075(SIM): Pyrene	129-00-0	10 mg/kg	97.0	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4818459)							
ES2301184-022	BH09_0.2_230112	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	94.8	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	96.6	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4818254)							
ES2301184-001	HA01_0.2_230111	EP080: C6 - C9 Fraction	----	32.5 mg/kg	104	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4818256)							
ES2301184-022	BH09_0.2_230112	EP080: C6 - C9 Fraction	----	32.5 mg/kg	117	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4818454)							
ES2301184-001	HA01_0.2_230111	EP071: C10 - C14 Fraction	----	480 mg/kg	112	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	116	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	124	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4818458)							
ES2301184-022	BH09_0.2_230112	EP071: C10 - C14 Fraction	----	480 mg/kg	112	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	107	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	113	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4818254)							
ES2301184-001	HA01_0.2_230111	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	102	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4818256)							
ES2301184-022	BH09_0.2_230112	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	113	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4818454)							
ES2301184-001	HA01_0.2_230111	EP071: >C10 - C16 Fraction	----	860 mg/kg	114	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	115	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	131	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4818458)							
ES2301184-022	BH09_0.2_230112	EP071: >C10 - C16 Fraction	----	860 mg/kg	112	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	104	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	117	52.0	132
EP080: BTEXN (QCLot: 4818254)							
ES2301184-001	HA01_0.2_230111	EP080: Benzene	71-43-2	2.5 mg/kg	117	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	97.0	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	100	70.0	130
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	97.9	70.0	130
			106-42-3				
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	96.9	70.0	130
	EP080: Naphthalene	91-20-3	2.5 mg/kg	83.7	70.0	130	



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080: BTEXN (QCLot: 4818256)							
ES2301184-022	BH09_0.2_230112	EP080: Benzene	71-43-2	2.5 mg/kg	122	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	106	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	106	70.0	130
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	104	70.0	130
			106-42-3				
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	102	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	85.2	70.0	130
Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4823162)							
ES2301133-005	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	85.9	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	85.6	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	83.5	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	84.8	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	87.3	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	88.7	70.0	130
		EG020A-F: Zinc	7440-66-6	1 mg/L	85.5	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4823160)							
ES2301099-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	81.3	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4821412)							
ES2301128-002	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	97.0	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4821412)							
ES2301128-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	100	70.0	130
EP080: BTEXN (QCLot: 4821412)							
ES2301128-002	Anonymous	EP080: Benzene	71-43-2	25 µg/L	89.6	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	97.8	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	105	70.0	130
		EP080: meta- & para-Xylene	108-38-3	25 µg/L	105	70.0	130
			106-42-3				
		EP080: ortho-Xylene	95-47-6	25 µg/L	104	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	107	70.0	130

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Sample Receipt Advice

Company name: AECOM Aust Pty Ltd Sydney
Contact name: Stephen Randall
Project name: Not provided
Project ID: 60694112
Turnaround time: 5 Day
Date/Time received: Jan 18, 2023 12:00 AM
Eurofins reference: 956722

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- N/A Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Hannah Mawbey on phone : or by email: HannahMawbey@eurofins.com

Results will be delivered electronically via email to Stephen Randall - Stephen.Randall@aecom.com.

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

AECOM Aust Pty Ltd Sydney
Level 21, 420 George St
Sydney
NSW 2000



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition
Arrangement for the mutual recognition of the
equivalence of testing, medical testing, calibration,
inspection, proficiency testing scheme providers and
reference materials producers reports and certificates.

Attention: Stephen Randall

Report 956722-S

Project name

Project ID 60694112

Received Date Jan 18, 2023

Client Sample ID			QC200	QC201
Sample Matrix			Soil	Soil
Eurofins Sample No.			S23-Ja0023382	S23-Ja0023383
Date Sampled			Jan 11, 2023	Jan 13, 2023
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons				
TRH C6-C9	20	mg/kg	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100
BTEX				
Benzene	0.1	mg/kg	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	115	72
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5

Client Sample ID			QC200	QC201
Sample Matrix			Soil	Soil
Eurofins Sample No.			S23-Ja0023382	S23-Ja0023383
Date Sampled			Jan 11, 2023	Jan 13, 2023
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	94	95
p-Terphenyl-d14 (surr.)	1	%	89	114
Organochlorine Pesticides				
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05
α-HCH	0.05	mg/kg	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05
β-HCH	0.05	mg/kg	< 0.05	< 0.05
δ-HCH	0.05	mg/kg	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05
γ-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	115	114
Tetrachloro-m-xylene (surr.)	1	%	92	94
Organophosphorus Pesticides				
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2

Client Sample ID			QC200	QC201
Sample Matrix			Soil	Soil
Eurofins Sample No.			S23-Ja0023382	S23-Ja0023383
Date Sampled			Jan 11, 2023	Jan 13, 2023
Test/Reference	LOR	Unit		
Organophosphorus Pesticides				
Dimethoate	0.2	mg/kg	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	82	82
Phenols (Halogenated)				
2-Chlorophenol	0.5	mg/kg	< 0.5	< 0.5
2,4-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5
2,4,5-Trichlorophenol	1	mg/kg	< 1	< 1
2,4,6-Trichlorophenol	1	mg/kg	< 1	< 1
2,6-Dichlorophenol	0.5	mg/kg	< 0.5	< 0.5
4-Chloro-3-methylphenol	1	mg/kg	< 1	< 1
Pentachlorophenol	1	mg/kg	< 1	< 1
Tetrachlorophenols - Total	10	mg/kg	< 10	< 10
Total Halogenated Phenol*	1	mg/kg	< 1	< 1
Phenols (non-Halogenated)				
2-Cyclohexyl-4,6-dinitrophenol	20	mg/kg	< 20	< 20
2-Methyl-4,6-dinitrophenol	5	mg/kg	< 5	< 5
2-Nitrophenol	1	mg/kg	< 1	< 1
2,4-Dimethylphenol	0.5	mg/kg	< 0.5	< 0.5
2,4-Dinitrophenol	5	mg/kg	< 5	< 5
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	< 0.2
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	< 0.4
Total cresols*	0.5	mg/kg	< 0.5	< 0.5
4-Nitrophenol	5	mg/kg	< 5	< 5
Dinoseb	20	mg/kg	< 20	< 20
Phenol	0.5	mg/kg	< 0.5	< 0.5
Phenol-d6 (surr.)	1	%	86	86
Total Non-Halogenated Phenol*	20	mg/kg	< 20	< 20

Client Sample ID			QC200	QC201
Sample Matrix			Soil	Soil
Eurofins Sample No.			S23-Ja0023382	S23-Ja0023383
Date Sampled			Jan 11, 2023	Jan 13, 2023
Test/Reference	LOR	Unit		
Heavy Metals				
Arsenic	2	mg/kg	2.7	3.0
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	7.1	11
Copper	5	mg/kg	< 5	8.6
Lead	5	mg/kg	14	15
Mercury	0.1	mg/kg	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5
Zinc	5	mg/kg	6.4	13
% Moisture	1	%	11	19

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Jan 25, 2023	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Jan 25, 2023	14 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Jan 25, 2023	14 Days
BTEX - Method: LTM-ORG-2010 BTEX and Volatile TRH	Sydney	Jan 25, 2023	14 Days
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Jan 25, 2023	14 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Jan 25, 2023	28 Days
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	Jan 25, 2023	14 Days
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS	Sydney	Jan 25, 2023	14 Days
Phenols (Halogenated) - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Jan 25, 2023	14 Days
Phenols (non-Halogenated) - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Jan 25, 2023	14 Days
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Jan 19, 2023	14 Days



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Company Name: AECOM Aust Pty Ltd Sydney
Address: Level 21, 420 George St
Sydney
NSW 2000

Project Name:
Project ID: 60694112

Order No.:
Report #: 956722
Phone: 02 8934 0000
Fax: 02 8934 0001

Received: Jan 18, 2023 12:00 AM
Due: Jan 25, 2023
Priority: 5 Day
Contact Name: Stephen Randall

Eurofins Analytical Services Manager : Hannah Mawbey

Sample Detail						Phenols (Speciated)	Suite B14: OCP/OPP	Moisture Set	Eurofins Suite B7
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	QC200	Jan 11, 2023		Soil	S23-Ja0023382	X	X	X	X
2	QC201	Jan 13, 2023		Soil	S23-Ja0023383	X	X	X	X
Test Counts						2	2	2	2

Internal Quality Control Review and Glossary

General

- Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
- All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
- All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
- Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
- Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
- SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
- Samples were analysed on an 'as received' basis.
- Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
- This report replaces any interim results previously issued.

Holding Times

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

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

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

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

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	µg/L: micrograms per litre
ppm: parts per million	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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

Results <10 times the LOR: No Limit

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

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

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

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

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4,4'-DDD	mg/kg	< 0.05			0.05	Pass	
4,4'-DDE	mg/kg	< 0.05			0.05	Pass	
4,4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
2,4,5-Trichlorophenol	mg/kg	< 1			1	Pass	
2,4,6-Trichlorophenol	mg/kg	< 1			1	Pass	
2,6-Dichlorophenol	mg/kg	< 0.5			0.5	Pass	
4-Chloro-3-methylphenol	mg/kg	< 1			1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pentachlorophenol	mg/kg	< 1			1	Pass	
Tetrachlorophenols - Total	mg/kg	< 10			10	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	mg/kg	< 20			20	Pass	
2-Methyl-4,6-dinitrophenol	mg/kg	< 5			5	Pass	
2-Nitrophenol	mg/kg	< 1			1	Pass	
2,4-Dimethylphenol	mg/kg	< 0.5			0.5	Pass	
2,4-Dinitrophenol	mg/kg	< 5			5	Pass	
2-Methylphenol (o-Cresol)	mg/kg	< 0.2			0.2	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/kg	< 0.4			0.4	Pass	
4-Nitrophenol	mg/kg	< 5			5	Pass	
Dinoseb	mg/kg	< 20			20	Pass	
Phenol	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	115			70-130	Pass	
TRH C10-C14	%	78			70-130	Pass	
TRH C6-C10	%	90			70-130	Pass	
TRH >C10-C16	%	76			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	96			70-130	Pass	
Toluene	%	95			70-130	Pass	
Ethylbenzene	%	101			70-130	Pass	
m&p-Xylenes	%	110			70-130	Pass	
o-Xylene	%	109			70-130	Pass	
Xylenes - Total*	%	109			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	121			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	87			70-130	Pass	
Acenaphthylene	%	83			70-130	Pass	
Anthracene	%	89			70-130	Pass	
Benz(a)anthracene	%	73			70-130	Pass	
Benzo(a)pyrene	%	100			70-130	Pass	
Benzo(b&j)fluoranthene	%	86			70-130	Pass	
Benzo(g,h,i)perylene	%	96			70-130	Pass	
Benzo(k)fluoranthene	%	90			70-130	Pass	
Chrysene	%	85			70-130	Pass	
Dibenz(a,h)anthracene	%	83			70-130	Pass	
Fluoranthene	%	87			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Fluorene	%	90			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	89			70-130	Pass	
Naphthalene	%	84			70-130	Pass	
Phenanthrene	%	71			70-130	Pass	
Pyrene	%	91			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	85			70-130	Pass	
4.4'-DDD	%	82			70-130	Pass	
4.4'-DDE	%	88			70-130	Pass	
4.4'-DDT	%	98			70-130	Pass	
a-HCH	%	76			70-130	Pass	
Aldrin	%	86			70-130	Pass	
b-HCH	%	72			70-130	Pass	
d-HCH	%	77			70-130	Pass	
Dieldrin	%	79			70-130	Pass	
Endosulfan I	%	84			70-130	Pass	
Endosulfan II	%	81			70-130	Pass	
Endosulfan sulphate	%	84			70-130	Pass	
Endrin	%	88			70-130	Pass	
Endrin aldehyde	%	105			70-130	Pass	
Endrin ketone	%	81			70-130	Pass	
g-HCH (Lindane)	%	78			70-130	Pass	
Heptachlor	%	81			70-130	Pass	
Heptachlor epoxide	%	85			70-130	Pass	
Hexachlorobenzene	%	82			70-130	Pass	
Methoxychlor	%	94			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	109			70-130	Pass	
Dimethoate	%	72			70-130	Pass	
Ethion	%	101			70-130	Pass	
Fenitrothion	%	92			70-130	Pass	
Methyl parathion	%	98			70-130	Pass	
Mevinphos	%	92			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	78			25-140	Pass	
2.4-Dichlorophenol	%	76			25-140	Pass	
2.4.5-Trichlorophenol	%	86			25-140	Pass	
2.4.6-Trichlorophenol	%	76			25-140	Pass	
2.6-Dichlorophenol	%	78			25-140	Pass	
4-Chloro-3-methylphenol	%	75			25-140	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	96			25-140	Pass	
2-Methyl-4.6-dinitrophenol	%	86			25-140	Pass	
2-Nitrophenol	%	70			25-140	Pass	
2.4-Dimethylphenol	%	79			25-140	Pass	
2.4-Dinitrophenol	%	101			25-140	Pass	
2-Methylphenol (o-Cresol)	%	78			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	94			25-140	Pass	
4-Nitrophenol	%	105			25-140	Pass	
Dinoseb	%	89			25-140	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Phenol			%	81			25-140	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	116			80-120	Pass	
Cadmium			%	110			80-120	Pass	
Chromium			%	112			80-120	Pass	
Copper			%	107			80-120	Pass	
Lead			%	107			80-120	Pass	
Mercury			%	112			80-120	Pass	
Nickel			%	108			80-120	Pass	
Zinc			%	112			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S23-Ja0022591	NCP	%	111			70-130	Pass	
TRH C10-C14	N23-Ja0023499	NCP	%	124			70-130	Pass	
TRH C6-C10	S23-Ja0022591	NCP	%	105			70-130	Pass	
TRH >C10-C16	N23-Ja0023499	NCP	%	120			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S23-Ja0022591	NCP	%	123			70-130	Pass	
Toluene	S23-Ja0022591	NCP	%	119			70-130	Pass	
Ethylbenzene	S23-Ja0022591	NCP	%	118			70-130	Pass	
m&p-Xylenes	S23-Ja0022591	NCP	%	110			70-130	Pass	
o-Xylene	S23-Ja0022591	NCP	%	110			70-130	Pass	
Xylenes - Total*	S23-Ja0022591	NCP	%	110			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S23-Ja0022591	NCP	%	85			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Benz(a)anthracene	S23-Ja0022156	NCP	%	86			70-130	Pass	
Phenanthrene	S23-Ja0022156	NCP	%	84			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S23-Ja0033061	NCP	%	114			75-125	Pass	
Cadmium	S23-Ja0033061	NCP	%	110			75-125	Pass	
Chromium	S23-Ja0033061	NCP	%	108			75-125	Pass	
Copper	S23-Ja0033061	NCP	%	103			75-125	Pass	
Lead	S23-Ja0033061	NCP	%	104			75-125	Pass	
Mercury	S23-Ja0033061	NCP	%	106			75-125	Pass	
Nickel	S23-Ja0033061	NCP	%	106			75-125	Pass	
Zinc	S23-Ja0033061	NCP	%	108			75-125	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S23-Ja0023383	CP	%	78			70-130	Pass	
Acenaphthylene	S23-Ja0023383	CP	%	78			70-130	Pass	
Anthracene	S23-Ja0023383	CP	%	75			70-130	Pass	
Benzo(a)pyrene	S23-Ja0023383	CP	%	85			70-130	Pass	
Benzo(b&j)fluoranthene	S23-Ja0023383	CP	%	71			70-130	Pass	
Benzo(g,h,i)perylene	S23-Ja0023383	CP	%	82			70-130	Pass	
Benzo(k)fluoranthene	S23-Ja0023383	CP	%	81			70-130	Pass	
Chrysene	S23-Ja0023383	CP	%	79			70-130	Pass	
Dibenz(a,h)anthracene	S23-Ja0023383	CP	%	75			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Fluoranthene	S23-Ja0023383	CP	%	77			70-130	Pass	
Fluorene	S23-Ja0023383	CP	%	78			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S23-Ja0023383	CP	%	75			70-130	Pass	
Naphthalene	S23-Ja0023383	CP	%	80			70-130	Pass	
Pyrene	S23-Ja0023383	CP	%	79			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S23-Ja0023383	CP	%	84			70-130	Pass	
4,4'-DDD	S23-Ja0023383	CP	%	78			70-130	Pass	
4,4'-DDE	S23-Ja0023383	CP	%	88			70-130	Pass	
4,4'-DDT	S23-Ja0023383	CP	%	101			70-130	Pass	
a-HCH	S23-Ja0023383	CP	%	74			70-130	Pass	
Aldrin	S23-Ja0023383	CP	%	84			70-130	Pass	
d-HCH	S23-Ja0023383	CP	%	75			70-130	Pass	
Dieldrin	S23-Ja0023383	CP	%	80			70-130	Pass	
Endosulfan I	S23-Ja0023383	CP	%	85			70-130	Pass	
Endosulfan II	S23-Ja0023383	CP	%	76			70-130	Pass	
Endosulfan sulphate	S23-Ja0023383	CP	%	90			70-130	Pass	
Endrin	S23-Ja0023383	CP	%	97			70-130	Pass	
Endrin aldehyde	S23-Ja0023383	CP	%	99			70-130	Pass	
Endrin ketone	S23-Ja0023383	CP	%	88			70-130	Pass	
g-HCH (Lindane)	S23-Ja0023383	CP	%	80			70-130	Pass	
Heptachlor	S23-Ja0023383	CP	%	80			70-130	Pass	
Heptachlor epoxide	S23-Ja0023383	CP	%	85			70-130	Pass	
Hexachlorobenzene	S23-Ja0023383	CP	%	82			70-130	Pass	
Methoxychlor	S23-Ja0023383	CP	%	91			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S23-Ja0023383	CP	%	100			70-130	Pass	
Dimethoate	S23-Ja0023383	CP	%	71			70-130	Pass	
Ethion	S23-Ja0023383	CP	%	80			70-130	Pass	
Fenitrothion	S23-Ja0023383	CP	%	73			70-130	Pass	
Methyl parathion	S23-Ja0023383	CP	%	78			70-130	Pass	
Mevinphos	S23-Ja0023383	CP	%	54			70-130	Fail	Q08
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2,4-Dichlorophenol	S23-Ja0023383	CP	%	75			30-130	Pass	
2,4,5-Trichlorophenol	S23-Ja0023383	CP	%	72			30-130	Pass	
2,4,6-Trichlorophenol	S23-Ja0023383	CP	%	72			30-130	Pass	
2,6-Dichlorophenol	S23-Ja0023383	CP	%	80			30-130	Pass	
4-Chloro-3-methylphenol	S23-Ja0023383	CP	%	80			30-130	Pass	
Pentachlorophenol	S23-Ja0023383	CP	%	71			30-130	Pass	
Tetrachlorophenols - Total	S23-Ja0023383	CP	%	79			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4,6-dinitrophenol	S23-Ja0023383	CP	%	96			30-130	Pass	
2-Methyl-4,6-dinitrophenol	S23-Ja0023383	CP	%	80			30-130	Pass	
2-Nitrophenol	S23-Ja0023383	CP	%	79			30-130	Pass	
2,4-Dimethylphenol	S23-Ja0023383	CP	%	83			30-130	Pass	
2,4-Dinitrophenol	S23-Ja0023383	CP	%	82			70-130	Pass	
2-Methylphenol (o-Cresol)	S23-Ja0023383	CP	%	82			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	S23-Ja0023383	CP	%	95			30-130	Pass	
Dinoseb	S23-Ja0023383	CP	%	82			30-130	Pass	
Phenol	S23-Ja0023383	CP	%	72			30-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S23-Ja0022590	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S23-Ja0022613	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S23-Ja0022613	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S23-Ja0022613	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C6-C10	S23-Ja0022590	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S23-Ja0022613	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S23-Ja0022613	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S23-Ja0022613	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S23-Ja0022590	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S23-Ja0022590	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S23-Ja0022590	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S23-Ja0022590	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S23-Ja0022590	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S23-Ja0022590	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S23-Ja0022590	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	N23-Ja0025908	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	N23-Ja0025908	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	N23-Ja0025908	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	N23-Ja0025908	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	N23-Ja0025908	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	N23-Ja0025908	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g,h,i)perylene	N23-Ja0025908	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	N23-Ja0025908	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	N23-Ja0025908	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a,h)anthracene	N23-Ja0025908	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	N23-Ja0025908	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	N23-Ja0025908	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	N23-Ja0025908	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	N23-Ja0025908	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	N23-Ja0025908	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	N23-Ja0025908	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S23-Ja0016480	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4,4'-DDD	S23-Ja0016480	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDE	S23-Ja0016480	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4,4'-DDT	S23-Ja0016480	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S23-Ja0016480	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S23-Ja0016480	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S23-Ja0016480	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S23-Ja0016480	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S23-Ja0016480	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S23-Ja0016480	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S23-Ja0016480	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S23-Ja0016480	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S23-Ja0016480	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Endrin aldehyde	S23-Ja0016480	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S23-Ja0016480	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-HCH (Lindane)	S23-Ja0016480	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S23-Ja0016480	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S23-Ja0016480	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S23-Ja0016480	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S23-Ja0016480	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	S23-Ja0016480	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Bolstar	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorfenvinphos	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos-methyl	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Coumaphos	S23-Ja0030906	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Demeton-S	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Demeton-O	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Diazinon	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dichlorvos	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dimethoate	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Disulfoton	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
EPN	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethion	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethoprop	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethyl parathion	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenitrothion	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fensulfothion	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenthion	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Malathion	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Merphos	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methyl parathion	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Mevinphos	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Monocrotophos	S23-Ja0030906	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Naled	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Omethoate	S23-Ja0030906	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Phorate	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pirimiphos-methyl	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pyrazophos	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ronnel	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Terbufos	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tetrachlorvinphos	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tokuthion	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Trichloronate	S23-Ja0030906	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S23-Ja0034551	NCP	mg/kg	15	14	6.6	30%	Pass
Cadmium	S23-Ja0034551	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S23-Ja0034551	NCP	mg/kg	54	50	8.2	30%	Pass
Copper	S23-Ja0034551	NCP	mg/kg	21	23	9.3	30%	Pass
Lead	S23-Ja0034551	NCP	mg/kg	28	24	12	30%	Pass
Mercury	S23-Ja0034551	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S23-Ja0034551	NCP	mg/kg	17	18	1.2	30%	Pass
Zinc	S23-Ja0034551	NCP	mg/kg	51	51	<1	30%	Pass

Duplicate									
				Result 1	Result 2	RPD			
% Moisture	N23-Ja0023495	NCP	%	9.3	11	17	30%	Pass	

Comments
Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.

Authorised by:

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Mickael Ros	Senior Analyst-Metal
Roopesh Rangarajan	Senior Analyst-Volatile
Roopesh Rangarajan	Senior Analyst-Organic



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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Penrose,
Auckland 1061
Tel: +64 9 526 45 51
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Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Company Name: AECOM Aust Pty Ltd Sydney
Address: Level 21, 420 George St
Sydney
NSW 2000

Project Name:
Project ID: 60694112

Order No.:
Report #: 956722
Phone: 02 8934 0000
Fax: 02 8934 0001

Received: Jan 18, 2023 12:00 AM
Due: Jan 25, 2023
Priority: 5 Day
Contact Name: Stephen Randall

Eurofins Analytical Services Manager : Hannah Mawbey

Sample Detail						Phenols (Speciated)	Suite B14: OCP/OPP	Moisture Set	Eurofins Suite B7
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X
External Laboratory									
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID				
1	QC200	Jan 11, 2023		Soil	S23-Ja0023382	X	X	X	X
2	QC201	Jan 13, 2023		Soil	S23-Ja0023383	X	X	X	X
Test Counts						2	2	2	2

CONSULTANT: AECOM		ADDRESS: Sydney		SAMPLER: M Taylor		Destination Laboratory	
PROJECT MANAGER (PM): Stephen Randall		SITE: Aquatic Drive DSI		MOBILE: 0438 588 749		ALS	
PROJECT NUMBER & TASK CODE: 60694112		P.O. NO.:		EMAIL REPORT TO: m.taylor@aec.com.au			
RESULTS REQUIRED (Date): Standard TAT		QUOTE NO.:		ANALYSIS REQUIRED INCLUDING SUITES (note - suite codes must be listed to attract suite prices)			
FOR LABORATORY USE ONLY		COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL		TRH		BTXN	
COOLER SEAL (once appropriate)				PAH		8 metals	
Initial: Yes No N/A				OC/OPP		Phenols	
SAMPLE TEMPERATURE: 4.7°C No							
CHILLED: Yes No							
SAMPLE INFORMATION (note: S = Soil, W = Water)		CONTAINER INFORMATION		HOLD		Note: e.g. highly contaminated samples e.g. "High PAHs expected". Extra volume for OC or trace LOBs etc.	
ALS ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	N° jars	
1	MMW01_230119	W	19/01/23			4	X X X X X X X
2	MMW02_230119	W	19/01/23			4	X X X X X X X
3	OC102 OC102	W	19/01/23			4	X X X X X X X
4	OC202 OC202	W	19/01/23			4	X X X X X X X
5	OC303_230119	W	19/01/23			4	X X X X X X X
6	TS	W	19/01/23			1	X X X X X X X
Environmental Division Sydney Work Order Reference ES2301798 Barcode: [Barcode] Telephone: +61 2 4678 8655							
RELINQUISHED BY:		RECEIVED BY:		RECEIVED BY:		METHOD OF SHIPMENT	
Name: M Taylor	Date: 19/1/23	Name: M Taylor	Date: 19/1/23	Name: Jacky	Date: 19/01/23	Conf Note No:	
Of: AECOM	Time: 13:30	Of: AECOM	Time: 12:30	Of: AECOM	Time: 12:45	Transport Co:	
Water Containe Codes: P = Unpreserved Plastic; N = Nitrile Preserved Plastic; OFC = Nitrile Preserved OFC; SH = Sodium Hydroxide Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP = Air-tight Unpreserved Plastic; V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Air-tight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Specimen bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag.							

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : ES2301798

Client : AECOM AUSTRALIA PTY LTD Contact : MR STEPHEN RANDALL Address : LEVEL 21 420 GEORGE STREET SYDNEY NSW, AUSTRALIA 2000 E-mail : Stephen.Randall@aecom.com Telephone : 02 8934 0000 Facsimile : 02 8934 0001 Project : 60694112 Order number : ---- C-O-C number : ---- Site : Aquatic Drive DSI Sampler : Matthew Taylor	Laboratory : Environmental Division Sydney Contact : Sepan Mahamad Address : 277-289 Woodpark Road Smithfield NSW Australia 2164 E-mail : Sepan.Mahamad@ALSGlobal.com Telephone : +61 2 8784 8555 Facsimile : +61-2-8784 8500 Page : 1 of 2 Quote number : ES2021AECOMAU0044 (EN/004/21) QC Level : NEPM 2013 B3 & ALS QC Standard
---	---

Dates

Date Samples Received : 19-Jan-2023 12:30	Issue Date : 19-Jan-2023
Client Requested Due : 27-Jan-2023	Scheduled Reporting Date : 27-Jan-2023
Date	

Delivery Details

Mode of Delivery : Client Drop Off	Security Seal : Not Available
No. of coolers/boxes : 1	Temperature : 4.7°C - Ice present
Receipt Detail :	No. of samples received / analysed : 6 / 6

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Sample 'QC202' has been forwarded to Eurofins for analysis.**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.



Sample Container(s)/Preservation Non-Compliances

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

- No sample container / preservation non-compliance exists.

Summary of Sample(s) and Requested Analysis

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

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

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - EP080 BTEXN	WATER - W-12 OC/OP Pesticides	WATER - W-18 TRH(C6 - C9)BTEXN	WATER - W-27 TRH/BTEXN/PAH/Phenols/8 Metals
ES2301798-001	19-Jan-2023 00:00	MW01_230119		✓		✓
ES2301798-002	19-Jan-2023 00:00	MW02_230119		✓		✓
ES2301798-003	19-Jan-2023 00:00	QC102		✓		✓
ES2301798-004	19-Jan-2023 00:00	QC303_230119		✓		✓
ES2301798-005	18-Jan-2023 00:00	TB			✓	
ES2301798-006	18-Jan-2023 00:00	TS	✓			

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)

Email

AP_CustomerService.ANZ@aecom.com

- Chain of Custody (CoC) (COC)

Email

AP_CustomerService.ANZ@aecom.com

Matthew Taylor

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS_V5_AECOM_SAMPLE (EQUIS_V5_AECOM_SAMPLE)
- EDI Format - ESDAT (ESDAT)

Email

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STEPHEN RANDALL

- *AU Certificate of Analysis - NATA (COA)
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)
- Chain of Custody (CoC) (COC)
- Chromatogram (CHROM)
- EDI Format - ENMRG (ENMRG)
- EDI Format - EQUIS_V5_AECOM_SAMPLE (EQUIS_V5_AECOM_SAMPLE)
- EDI Format - ESDAT (ESDAT)
- Purchase Order Request Letter (PO_Request)

Email

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Environmental

CERTIFICATE OF ANALYSIS

Work Order : **ES2301798**
Client : **AECOM AUSTRALIA PTY LTD**
Contact : **MR STEPHEN RANDALL**
Address : **LEVEL 21 420 GEORGE STREET**
SYDNEY NSW, AUSTRALIA 2000
Telephone : **02 8934 0000**
Project : **60694112**
Order number : **----**
C-O-C number : **----**
Sampler : **Matthew Taylor**
Site : **Aquatic Drive DSI**
Quote number : **EN/004/21**
No. of samples received : **6**
No. of samples analysed : **6**

Page : **1 of 8**
Laboratory : **Environmental Division Sydney**
Contact : **Sepan Mahamad**
Address : **277-289 Woodpark Road Smithfield NSW Australia 2164**
Telephone : **+61 2 8784 8555**
Date Samples Received : **19-Jan-2023 12:30**
Date Analysis Commenced : **23-Jan-2023**
Issue Date : **27-Jan-2023 17:38**



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, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Edwandy Fadjjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the 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 Contract 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.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) 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.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP080: Sample TRIP SPIKE contains volatile compounds spiked into the sample containers prior to dispatch from the laboratory. BTEXN compounds spiked at 20 ug/L.



Analytical Results

Sub-Matrix: WATER
 (Matrix: WATER)

Sample ID

				MW01_230119	MW02_230119	QC102	QC303_230119	TB
Sampling date / time				19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	18-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	ES2301798-001	ES2301798-002	ES2301798-003	ES2301798-004	ES2301798-005
				Result	Result	Result	Result	Result
EG020F: Dissolved Metals by ICP-MS								
Arsenic	7440-38-2	0.001	mg/L	0.001	<0.001	<0.001	<0.001	----
Cadmium	7440-43-9	0.0001	mg/L	0.0001	<0.0001	0.0001	<0.0001	----
Chromium	7440-47-3	0.001	mg/L	0.004	<0.001	<0.001	<0.001	----
Copper	7440-50-8	0.001	mg/L	0.003	0.001	0.002	<0.001	----
Lead	7439-92-1	0.001	mg/L	0.003	<0.001	<0.001	<0.001	----
Nickel	7440-02-0	0.001	mg/L	0.006	0.004	0.004	<0.001	----
Zinc	7440-66-6	0.005	mg/L	0.036	0.020	0.019	<0.005	----
EG035F: Dissolved Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
4,4'-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
4,4'-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
4,4'-DDT	50-29-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	----
Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Methoxychlor	72-43-5	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	----
^ Total Chlordane (sum)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----



Analytical Results

Sub-Matrix: WATER
 (Matrix: WATER)

Sample ID

				MW01_230119	MW02_230119	QC102	QC303_230119	TB
Sampling date / time				19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	18-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	ES2301798-001	ES2301798-002	ES2301798-003	ES2301798-004	ES2301798-005
				Result	Result	Result	Result	Result

EP068A: Organochlorine Pesticides (OC) - Continued

EP068B: Organophosphorus Pesticides (OP)

Dichlorvos	62-73-7	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Monocrotophos	6923-22-4	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	----
Dimethoate	60-51-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Diazinon	333-41-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Parathion-methyl	298-00-0	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	----
Malathion	121-75-5	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Fenthion	55-38-9	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Parathion	56-38-2	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Fenamiphos	22224-92-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Prothiofos	34643-46-4	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Ethion	563-12-2	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Carbophenothion	786-19-6	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----
Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----

EP075(SIM)A: Phenolic Compounds

Phenol	108-95-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
2-Chlorophenol	95-57-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
2-Methylphenol	95-48-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
3- & 4-Methylphenol	1319-77-3	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	----
2-Nitrophenol	88-75-5	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
2,4-Dimethylphenol	105-67-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
2,4-Dichlorophenol	120-83-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
2,6-Dichlorophenol	87-65-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
4-Chloro-3-methylphenol	59-50-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
2,4,6-Trichlorophenol	88-06-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
2,4,5-Trichlorophenol	95-95-4	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----
Pentachlorophenol	87-86-5	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	----

EP075(SIM)B: Polynuclear Aromatic Hydrocarbons

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW01_230119	MW02_230119	QC102	QC303_230119	TB
Sampling date / time				19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	18-Jan-2023 00:00	
Compound	CAS Number	LOR	Unit	ES2301798-001	ES2301798-002	ES2301798-003	ES2301798-004	ES2301798-005	
				Result	Result	Result	Result	Result	
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Pyrene	129-00-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Chrysene	218-01-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	----	
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Dibenz(a,h)anthracene	53-70-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
Benzo(g,h,i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	----	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<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									



Analytical Results

Sub-Matrix: WATER
 (Matrix: WATER)

Sample ID

				MW01_230119	MW02_230119	QC102	QC303_230119	TB
Sampling date / time				19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	19-Jan-2023 00:00	18-Jan-2023 00:00
Compound	CAS Number	LOR	Unit	ES2301798-001	ES2301798-002	ES2301798-003	ES2301798-004	ES2301798-005
				Result	Result	Result	Result	Result
EP080: BTEXN - Continued								
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	----	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
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.5	%	61.2	73.5	63.0	65.4	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.5	%	62.6	70.3	61.3	61.2	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	1.0	%	25.0	32.2	18.7	26.7	----
2-Chlorophenol-D4	93951-73-6	1.0	%	50.0	61.9	37.4	51.2	----
2,4,6-Tribromophenol	118-79-6	1.0	%	61.1	77.0	43.1	59.1	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	1.0	%	62.5	71.5	43.4	58.3	----
Anthracene-d10	1719-06-8	1.0	%	67.0	82.3	48.6	65.0	----
4-Terphenyl-d14	1718-51-0	1.0	%	66.1	80.6	47.4	63.9	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	2	%	115	117	110	89.4	108
Toluene-D8	2037-26-5	2	%	123	124	116	94.9	114
4-Bromofluorobenzene	460-00-4	2	%	120	125	115	93.1	115



Analytical Results

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

Sample ID

				TS	----	----	----	----
Sampling date / time				18-Jan-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2301798-006	-----	-----	-----	-----
Result				----	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	15	----	----	----	----
Toluene	108-88-3	2	µg/L	15	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L	14	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	14	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L	16	----	----	----	----
^ Total Xylenes	----	2	µg/L	30	----	----	----	----
^ Sum of BTEX	----	1	µg/L	74	----	----	----	----
Naphthalene	91-20-3	5	µg/L	19	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	2	%	106	----	----	----	----
Toluene-D8	2037-26-5	2	%	113	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%	113	----	----	----	----



Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2,4,6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128



Environmental

QUALITY CONTROL REPORT

Work Order : **ES2301798**

Page : 1 of 7

Client : **AECOM AUSTRALIA PTY LTD**
Contact : **MR STEPHEN RANDALL**
Address : **LEVEL 21 420 GEORGE STREET**
SYDNEY NSW, AUSTRALIA 2000
Telephone : **02 8934 0000**
Project : **60694112**
Order number : **----**
C-O-C number : **----**
Sampler : **Matthew Taylor**
Site : **Aquatic Drive DSI**
Quote number : **EN/004/21**
No. of samples received : **6**
No. of samples analysed : **6**

Laboratory : **Environmental Division Sydney**
Contact : **Sepan Mahamad**
Address : **277-289 Woodpark Road Smithfield NSW Australia 2164**
Telephone : **+61 2 8784 8555**
Date Samples Received : **19-Jan-2023**
Date Analysis Commenced : **23-Jan-2023**
Issue Date : **27-Jan-2023**



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, unless the sampling was conducted by ALS. 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
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the 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.

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**

Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 4828757)									
ES2301882-006	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
ES2302025-004	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	0.002	0.003	0.0	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.006	0.005	0.0	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 4828758)									
ES2301798-002	MW02_230119	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2301882-009	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4828501)									
ES2301798-001	MW01_230119	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2302035-005	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4828501)									
ES2301798-001	MW01_230119	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2302035-005	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit

Page : 3 of 7
 Work Order : ES2301798
 Client : AECOM AUSTRALIA PTY LTD
 Project : 60694112



Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080: BTEXN (QC Lot: 4828501)									
ES2301798-001	MW01_230119	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
ES2302035-005	Anonymous	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
		EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.0	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit



Method Blank (MB) and Laboratory Control Sample (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 Sample (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**

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result		LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4828757)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	85.1	85.0	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	88.7	84.0	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	87.6	85.0	111
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	87.0	81.0	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	89.1	83.0	111
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	83.7	82.0	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	83.9	81.0	117
EG035F: Dissolved Mercury by FIMS (QCLot: 4828758)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	92.1	83.0	105
EP068A: Organochlorine Pesticides (OC) (QCLot: 4826195)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	84.7	64.9	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	85.3	58.3	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	88.5	69.0	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	87.6	70.0	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	93.9	68.9	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	85.3	65.2	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	87.4	65.8	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	88.4	67.1	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	85.2	64.1	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	90.1	66.7	112
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	93.5	63.2	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	89.3	65.2	113
EP068: 4,4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	85.0	66.0	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	91.6	65.2	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	93.5	67.3	114
EP068: 4,4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	89.0	72.0	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	92.0	66.9	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	106	65.2	112
EP068: 4,4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	90.8	65.2	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	92.0	63.8	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	92.9	61.1	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4826195)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	102	65.6	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	78.4	63.7	113



Sub-Matrix: **WATER**

Method: Compound				Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%)	
							Low	High
CAS Number	LOR	Unit						
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4826195) - continued								
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	24.2	19.7	48.0
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	103	69.5	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	83.3	71.1	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	89.6	77.0	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	86.1	70.0	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	100	68.4	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	89.1	68.6	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	80.3	75.0	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	84.8	67.0	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	88.6	69.0	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	93.2	71.8	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	93.3	67.5	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	82.2	64.1	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	88.2	67.8	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	87.5	74.0	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	96.7	66.2	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	91.0	51.6	128
EP075(SIM)A: Phenolic Compounds (QCLot: 4826193)								
EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	5 µg/L	30.4	24.5	61.9
EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	5 µg/L	53.4	52.0	90.0
EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	5 µg/L	53.0	51.0	91.0
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	10 µg/L	48.9	44.0	88.0
EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	5 µg/L	75.0	48.0	100
EP075(SIM): 2,4-Dimethylphenol	105-67-9	1	µg/L	<1.0	5 µg/L	63.9	49.0	99.0
EP075(SIM): 2,4-Dichlorophenol	120-83-2	1	µg/L	<1.0	5 µg/L	74.3	53.0	105
EP075(SIM): 2,6-Dichlorophenol	87-65-0	1	µg/L	<1.0	5 µg/L	74.4	57.0	105
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	5 µg/L	71.3	53.0	99.0
EP075(SIM): 2,4,6-Trichlorophenol	88-06-2	1	µg/L	<1.0	5 µg/L	59.8	50.0	106
EP075(SIM): 2,4,5-Trichlorophenol	95-95-4	1	µg/L	<1.0	5 µg/L	61.8	51.0	105
EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	10 µg/L	72.8	10.0	95.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4826193)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	76.9	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	64.0	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	63.5	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	66.1	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	81.8	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	78.8	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	86.2	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	86.6	63.1	118

Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: <u>Compound</u>	CAS Number	Concentration	MS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4828757)							



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 4828757) - continued							
ES2301798-002	MW02_230119	EG020A-F: Arsenic	7440-38-2	1 mg/L	93.8	70.0	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	97.4	70.0	130
		EG020A-F: Chromium	7440-47-3	1 mg/L	95.1	70.0	130
		EG020A-F: Copper	7440-50-8	1 mg/L	96.6	70.0	130
		EG020A-F: Lead	7439-92-1	1 mg/L	102	70.0	130
		EG020A-F: Nickel	7440-02-0	1 mg/L	92.5	70.0	130
		EG020A-F: Zinc	7440-66-6	2 mg/L	83.6	70.0	130
EG035F: Dissolved Mercury by FIMS (QCLot: 4828758)							
ES2301781-001	Anonymous	EG035F: Mercury	7439-97-6	0.01 mg/L	81.4	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4828501)							
ES2301798-001	MW01_230119	EP080: C6 - C9 Fraction	----	325 µg/L	90.9	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4828501)							
ES2301798-001	MW01_230119	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	88.8	70.0	130
EP080: BTEXN (QCLot: 4828501)							
ES2301798-001	MW01_230119	EP080: Benzene	71-43-2	25 µg/L	100	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	105	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	105	70.0	130
		EP080: meta- & para-Xylene	108-38-3	25 µg/L	106	70.0	130
			106-42-3				
		EP080: ortho-Xylene	95-47-6	25 µg/L	107	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	87.9	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: ES2301798	Page	: 1 of 6
Client	: AECOM AUSTRALIA PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR STEPHEN RANDALL	Telephone	: +61 2 8784 8555
Project	: 60694112	Date Samples Received	: 19-Jan-2023
Site	: Aquatic Drive DSI	Issue Date	: 27-Jan-2023
Sampler	: Matthew Taylor	No. of samples received	: 6
Order number	: ----	No. of samples analysed	: 6

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.
- Surrogate recovery outliers exist for all regular sample matrices - please see following pages for full details.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

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



Regular Sample Surrogates

Sub-Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP068S: Organochlorine Pesticide Surrogate	ES2301798-001	MW01_230119	Dibromo-DDE	21655-73-2	61.2 %	66.5-111 %	Recovery less than lower data quality objective
EP068S: Organochlorine Pesticide Surrogate	ES2301798-003	QC102	Dibromo-DDE	21655-73-2	63.0 %	66.5-111 %	Recovery less than lower data quality objective
EP068S: Organochlorine Pesticide Surrogate	ES2301798-004	QC303_230119	Dibromo-DDE	21655-73-2	65.4 %	66.5-111 %	Recovery less than lower data quality objective
EP068T: Organophosphorus Pesticide Surrogate	ES2301798-001	MW01_230119	DEF	78-48-8	62.6 %	66.5-111 %	Recovery less than lower data quality objective
EP068T: Organophosphorus Pesticide Surrogate	ES2301798-003	QC102	DEF	78-48-8	61.3 %	66.5-111 %	Recovery less than lower data quality objective
EP068T: Organophosphorus Pesticide Surrogate	ES2301798-004	QC303_230119	DEF	78-48-8	61.2 %	66.5-111 %	Recovery less than lower data quality objective

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	13	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	5	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	12	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	13	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	5	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	12	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		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) MW01_230119, QC102,	MW02_230119, QC303_230119	19-Jan-2023	----	----	----	23-Jan-2023	18-Jul-2023	✓
EG035F: Dissolved Mercury by FIMS								
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) MW01_230119, QC102,	MW02_230119, QC303_230119	19-Jan-2023	----	----	----	27-Jan-2023	16-Feb-2023	✓
EP068A: Organochlorine Pesticides (OC)								
Amber Glass Bottle - Unpreserved (EP068) MW01_230119, QC102,	MW02_230119, QC303_230119	19-Jan-2023	23-Jan-2023	26-Jan-2023	✓	27-Jan-2023	04-Mar-2023	✓
EP068B: Organophosphorus Pesticides (OP)								
Amber Glass Bottle - Unpreserved (EP068) MW01_230119, QC102,	MW02_230119, QC303_230119	19-Jan-2023	23-Jan-2023	26-Jan-2023	✓	27-Jan-2023	04-Mar-2023	✓
EP075(SIM)A: Phenolic Compounds								
Amber Glass Bottle - Unpreserved (EP075(SIM)) MW01_230119, QC102,	MW02_230119, QC303_230119	19-Jan-2023	23-Jan-2023	26-Jan-2023	✓	27-Jan-2023	04-Mar-2023	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP075(SIM)) MW01_230119, QC102,	MW02_230119, QC303_230119	19-Jan-2023	23-Jan-2023	26-Jan-2023	✓	27-Jan-2023	04-Mar-2023	✓
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071) MW01_230119, QC102,	MW02_230119, QC303_230119	19-Jan-2023	23-Jan-2023	26-Jan-2023	✓	27-Jan-2023	04-Mar-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) TB		18-Jan-2023	24-Jan-2023	01-Feb-2023	✓	24-Jan-2023	01-Feb-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) MW01_230119, QC102,	MW02_230119, QC303_230119	19-Jan-2023	24-Jan-2023	02-Feb-2023	✓	24-Jan-2023	02-Feb-2023	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Amber Glass Bottle - Unpreserved (EP071) MW01_230119, QC102,	MW02_230119, QC303_230119	19-Jan-2023	23-Jan-2023	26-Jan-2023	✓	27-Jan-2023	04-Mar-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) TB		18-Jan-2023	24-Jan-2023	01-Feb-2023	✓	24-Jan-2023	01-Feb-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080) MW01_230119, QC102,	MW02_230119, QC303_230119	19-Jan-2023	24-Jan-2023	02-Feb-2023	✓	24-Jan-2023	02-Feb-2023	✓

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method		Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080)								
TB,	TS	18-Jan-2023	24-Jan-2023	01-Feb-2023	✓	24-Jan-2023	01-Feb-2023	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
MW01_230119,	MW02_230119,	19-Jan-2023	24-Jan-2023	02-Feb-2023	✓	24-Jan-2023	02-Feb-2023	✓
QC102,	QC303_230119							



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)							
Dissolved Mercury by FIMS	EG035F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	13	0.00	10.00	✗	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	5	0.00	10.00	✗	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	12	0.00	10.00	✗	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	5	20.00	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	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	5	20.00	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	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Dissolved Mercury by FIMS	EG035F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	13	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	5	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	12	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard



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
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270 Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015 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 Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270 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 Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 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 Schedule B(3)
Preparation Methods	Method	Matrix	Method Descriptions
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM 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 purging.

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Sample Receipt Advice

Company name: AECOM Aust Pty Ltd Sydney
Contact name: Stephen Randall
Project name: AQUATIC DRIVE DSI
Project ID: 60694112
Turnaround time: 5 Day
Date/Time received: Jan 20, 2023 9:00 AM
Eurofins reference: 957400

Sample Information

- ✓ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ✓ Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 2.3 degrees Celsius.
- ✓ All samples have been received as described on the above COC.
- ✓ COC has been completed correctly.
- ✓ Attempt to chill was evident.
- ✓ Appropriately preserved sample containers have been used.
- ✓ All samples were received in good condition.
- ✓ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ✓ Appropriate sample containers have been used.
- ✓ Sample containers for volatile analysis received with zero headspace.
- ✗ Split sample sent to requested external lab.
- ✗ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

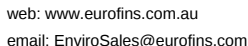
Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Hannah Mawbey on phone : or by email: HannahMawbey@eurofins.com

Results will be delivered electronically via email to Stephen Randall - Stephen.Randall@aecom.com.

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



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43 Detroit Drive
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Christchurch 7675
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Received: Jan 20, 2023 9:00 AM
Due: Jan 30, 2023
Priority: 5 Day
Contact Name: Stephen Randall

Eurofins Analytical Services Manager : Hannah Mawbey

Sample Detail						Phenols (Speciated)	Suite B14: OCP/OPP	Eurofins Suite B7 (filtered metals)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	QC202	Jan 19, 2023		Water	S23-Ja0029327	X	X	X
Test Counts						1	1	1

AECOM Aust Pty Ltd Sydney
Level 21, 420 George St
Sydney
NSW 2000



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition
Arrangement for the mutual recognition of the
equivalence of testing, medical testing, calibration,
inspection, proficiency testing scheme providers and
reference materials producers reports and certificates.

Attention: Stephen Randall

Report 957400-W
Project name AQUATIC DRIVE DSI
Project ID 60694112
Received Date Jan 20, 2023

Client Sample ID			QC202
Sample Matrix			Water
Eurofins Sample No.			S23-Ja0029327
Date Sampled			Jan 19, 2023
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	0.05
TRH C15-C28	0.1	mg/L	0.2
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	0.25
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1) ^{N04}	0.02	mg/L	< 0.02
TRH >C10-C16	0.05	mg/L	0.06
TRH >C10-C16 less Naphthalene (F2) ^{N01}	0.05	mg/L	0.06
TRH >C16-C34	0.1	mg/L	0.2
TRH >C34-C40	0.1	mg/L	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	0.26
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total*	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	82
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene ^{N02}	0.01	mg/L	< 0.01
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Anthracene	0.001	mg/L	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Chrysene	0.001	mg/L	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001

Client Sample ID			QC202
Sample Matrix			Water
Eurofins Sample No.			S23-Ja0029327
Date Sampled			Jan 19, 2023
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001
Total PAH*	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	79
p-Terphenyl-d14 (surr.)	1	%	Q09INT
Organochlorine Pesticides			
Chlordanes - Total	0.002	mg/L	< 0.002
4,4'-DDD	0.0002	mg/L	< 0.0002
4,4'-DDE	0.0002	mg/L	< 0.0002
4,4'-DDT	0.0002	mg/L	< 0.0002
α-HCH	0.0002	mg/L	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002
β-HCH	0.0002	mg/L	< 0.0002
δ-HCH	0.0002	mg/L	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002
Endrin	0.0002	mg/L	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002
γ-HCH (Lindane)	0.0002	mg/L	< 0.0002
Heptachlor	0.0002	mg/L	< 0.0002
Heptachlor epoxide	0.0002	mg/L	< 0.0002
Hexachlorobenzene	0.0002	mg/L	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002
Toxaphene	0.005	mg/L	< 0.005
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002
Dibutylchloroendate (surr.)	1	%	Q09INT
Tetrachloro-m-xylene (surr.)	1	%	Q09INT
Organophosphorus Pesticides			
Azinphos-methyl	0.002	mg/L	< 0.002
Bolstar	0.002	mg/L	< 0.002
Chlorfenvinphos	0.02	mg/L	< 0.02
Chlorpyrifos	0.002	mg/L	< 0.002
Chlorpyrifos-methyl	0.002	mg/L	< 0.002
Coumaphos	0.02	mg/L	< 0.02
Demeton-S	0.002	mg/L	< 0.002
Demeton-O	0.002	mg/L	< 0.002
Diazinon	0.002	mg/L	< 0.002
Dichlorvos	0.002	mg/L	< 0.002
Dimethoate	0.002	mg/L	< 0.002
Disulfoton	0.002	mg/L	< 0.002
EPN	0.002	mg/L	< 0.002

Client Sample ID			QC202
Sample Matrix			Water
Eurofins Sample No.			S23-Ja0029327
Date Sampled			Jan 19, 2023
Test/Reference	LOR	Unit	
Organophosphorus Pesticides			
Ethion	0.002	mg/L	< 0.002
Ethoprop	0.002	mg/L	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002
Fenitrothion	0.002	mg/L	< 0.002
Fensulfothion	0.002	mg/L	< 0.002
Fenthion	0.002	mg/L	< 0.002
Malathion	0.002	mg/L	< 0.002
Merphos	0.002	mg/L	< 0.002
Methyl parathion	0.002	mg/L	< 0.002
Mevinphos	0.002	mg/L	< 0.002
Monocrotophos	0.002	mg/L	< 0.002
Naled	0.002	mg/L	< 0.002
Omethoate	0.02	mg/L	< 0.02
Phorate	0.002	mg/L	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02
Pyrazophos	0.002	mg/L	< 0.002
Ronnel	0.002	mg/L	< 0.002
Terbufos	0.002	mg/L	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002
Tokuthion	0.002	mg/L	< 0.002
Trichloronate	0.002	mg/L	< 0.002
Triphenylphosphate (surr.)	1	%	Q09INT
Phenols (Halogenated)			
2-Chlorophenol	0.003	mg/L	< 0.003
2,4-Dichlorophenol	0.003	mg/L	< 0.003
2,4,5-Trichlorophenol	0.01	mg/L	< 0.01
2,4,6-Trichlorophenol	0.01	mg/L	< 0.01
2,6-Dichlorophenol	0.003	mg/L	< 0.003
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01
Pentachlorophenol	0.01	mg/L	< 0.01
Tetrachlorophenols - Total	0.03	mg/L	< 0.03
Total Halogenated Phenol*	0.01	mg/L	< 0.01
Phenols (non-Halogenated)			
2-Cyclohexyl-4,6-dinitrophenol	0.1	mg/L	< 0.1
2-Methyl-4,6-dinitrophenol	0.03	mg/L	< 0.03
2-Nitrophenol	0.01	mg/L	< 0.01
2,4-Dimethylphenol	0.003	mg/L	< 0.003
2,4-Dinitrophenol	0.03	mg/L	< 0.03
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006
Total cresols*	0.01	mg/L	< 0.01
4-Nitrophenol	0.03	mg/L	< 0.03
Dinoseb	0.1	mg/L	< 0.1
Phenol	0.003	mg/L	< 0.003
Phenol-d6 (surr.)	1	%	126
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1

Client Sample ID			QC202
Sample Matrix			Water
Eurofins Sample No.			S23-Ja0029327
Date Sampled			Jan 19, 2023
Test/Reference	LOR	Unit	
Heavy Metals			
Arsenic (filtered)	0.001	mg/L	0.002
Cadmium (filtered)	0.0002	mg/L	< 0.0002
Chromium (filtered)	0.001	mg/L	0.005
Copper (filtered)	0.001	mg/L	0.005
Lead (filtered)	0.001	mg/L	0.003
Mercury (filtered)	0.0001	mg/L	< 0.0001
Nickel (filtered)	0.001	mg/L	0.006
Zinc (filtered)	0.005	mg/L	0.040

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

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

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Jan 23, 2023	7 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Jan 23, 2023	7 Days
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Jan 23, 2023	7 Days
BTEX - Method: LTM-ORG-2010 BTEX and Volatile TRH	Sydney	Jan 23, 2023	14 Days
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Jan 23, 2023	7 Days
Metals M8 filtered - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Jan 23, 2023	28 Days
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	Jan 23, 2023	7 Days
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS	Sydney	Jan 23, 2023	7 Days
Phenols (Halogenated) - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Jan 23, 2023	7 Days
Phenols (non-Halogenated) - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Jan 23, 2023	7 Days



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Company Name: AECOM Aust Pty Ltd Sydney
Address: Level 21, 420 George St
Sydney
NSW 2000

Project Name: AQUATIC DRIVE DSI
Project ID: 60694112

Order No.:
Report #: 957400
Phone: 02 8934 0000
Fax: 02 8934 0001

Received: Jan 20, 2023 9:00 AM
Due: Jan 30, 2023
Priority: 5 Day
Contact Name: Stephen Randall

Eurofins Analytical Services Manager : Hannah Mawbey

Sample Detail						Phenols (Speciated)	Suite B14: OCP/OPP	Eurofins Suite B7 (filtered metals)
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
External Laboratory								
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID			
1	QC202	Jan 19, 2023		Water	S23-Ja0029327	X	X	X
Test Counts						1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	µg/L: micrograms per litre
ppm: parts per million	ppb: parts per billion	%: Percentage
org/100 mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100 mL: Most Probable Number of organisms per 100 millilitres
CFU: Colony forming unit		

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (<i>bis</i> -tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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

Results <10 times the LOR: No Limit

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

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

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total*	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.002			0.002	Pass	
4,4'-DDD	mg/L	< 0.0002			0.0002	Pass	
4,4'-DDE	mg/L	< 0.0002			0.0002	Pass	
4,4'-DDT	mg/L	< 0.0002			0.0002	Pass	
a-HCH	mg/L	< 0.0002			0.0002	Pass	
Aldrin	mg/L	< 0.0002			0.0002	Pass	
b-HCH	mg/L	< 0.0002			0.0002	Pass	
d-HCH	mg/L	< 0.0002			0.0002	Pass	
Dieldrin	mg/L	< 0.0002			0.0002	Pass	
Endosulfan I	mg/L	< 0.0002			0.0002	Pass	
Endosulfan II	mg/L	< 0.0002			0.0002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/L	< 0.0002			0.0002	Pass	
Endrin	mg/L	< 0.0002			0.0002	Pass	
Endrin aldehyde	mg/L	< 0.0002			0.0002	Pass	
Endrin ketone	mg/L	< 0.0002			0.0002	Pass	
g-HCH (Lindane)	mg/L	< 0.0002			0.0002	Pass	
Heptachlor	mg/L	< 0.0002			0.0002	Pass	
Heptachlor epoxide	mg/L	< 0.0002			0.0002	Pass	
Hexachlorobenzene	mg/L	< 0.0002			0.0002	Pass	
Methoxychlor	mg/L	< 0.0002			0.0002	Pass	
Toxaphene	mg/L	< 0.005			0.005	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/L	< 0.002			0.002	Pass	
Bolstar	mg/L	< 0.002			0.002	Pass	
Chlorfenvinphos	mg/L	< 0.02			0.02	Pass	
Chlorpyrifos	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos-methyl	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.02			0.02	Pass	
Demeton-S	mg/L	< 0.002			0.002	Pass	
Demeton-O	mg/L	< 0.002			0.002	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Dimethoate	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
EPN	mg/L	< 0.002			0.002	Pass	
Ethion	mg/L	< 0.002			0.002	Pass	
Ethoprop	mg/L	< 0.002			0.002	Pass	
Ethyl parathion	mg/L	< 0.002			0.002	Pass	
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Malathion	mg/L	< 0.002			0.002	Pass	
Merphos	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Monocrotophos	mg/L	< 0.002			0.002	Pass	
Naled	mg/L	< 0.002			0.002	Pass	
Omethoate	mg/L	< 0.02			0.02	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	
Pirimiphos-methyl	mg/L	< 0.02			0.02	Pass	
Pyrazophos	mg/L	< 0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Terbufos	mg/L	< 0.002			0.002	Pass	
Tetrachlorvinphos	mg/L	< 0.002			0.002	Pass	
Tokuthion	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
Method Blank							
Phenols (Halogenated)							
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	
2,4-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2,4,5-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2,4,6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2,6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Tetrachlorophenols - Total	mg/L	< 0.03			0.03	Pass	
Method Blank							
Phenols (non-Halogenated)							
2-Cyclohexyl-4,6-dinitrophenol	mg/L	< 0.1			0.1	Pass	
2-Methyl-4,6-dinitrophenol	mg/L	< 0.03			0.03	Pass	
2-Nitrophenol	mg/L	< 0.01			0.01	Pass	
2,4-Dimethylphenol	mg/L	< 0.003			0.003	Pass	
2,4-Dinitrophenol	mg/L	< 0.03			0.03	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
4-Nitrophenol	mg/L	< 0.03			0.03	Pass	
Dinoseb	mg/L	< 0.1			0.1	Pass	
Total Non-Halogenated Phenol*	mg/L	< 0			0.1	Pass	
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	85			70-130	Pass	
TRH C10-C14	%	76			70-130	Pass	
TRH C6-C10	%	89			70-130	Pass	
TRH >C10-C16	%	71			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	100			70-130	Pass	
Toluene	%	102			70-130	Pass	
Ethylbenzene	%	100			70-130	Pass	
m&p-Xylenes	%	112			70-130	Pass	
o-Xylene	%	102			70-130	Pass	
Xylenes - Total*	%	109			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	93			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	75			70-130	Pass	
Acenaphthylene	%	75			70-130	Pass	
Anthracene	%	92			70-130	Pass	
Benz(a)anthracene	%	72			70-130	Pass	
Benzo(a)pyrene	%	75			70-130	Pass	
Benzo(b&j)fluoranthene	%	76			70-130	Pass	
Benzo(g,h,i)perylene	%	74			70-130	Pass	
Benzo(k)fluoranthene	%	74			70-130	Pass	
Chrysene	%	73			70-130	Pass	
Dibenz(a,h)anthracene	%	74			70-130	Pass	
Fluoranthene	%	87			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Fluorene	%	81			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	75			70-130	Pass	
Naphthalene	%	117			70-130	Pass	
Phenanthrene	%	82			70-130	Pass	
Pyrene	%	89			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	86			70-130	Pass	
4.4'-DDD	%	93			70-130	Pass	
4.4'-DDE	%	83			70-130	Pass	
4.4'-DDT	%	102			70-130	Pass	
a-HCH	%	87			70-130	Pass	
Aldrin	%	97			70-130	Pass	
b-HCH	%	95			70-130	Pass	
d-HCH	%	93			70-130	Pass	
Dieldrin	%	96			70-130	Pass	
Endosulfan I	%	99			70-130	Pass	
Endosulfan II	%	104			70-130	Pass	
Endosulfan sulphate	%	88			70-130	Pass	
Endrin	%	91			70-130	Pass	
Endrin aldehyde	%	92			70-130	Pass	
Endrin ketone	%	91			70-130	Pass	
g-HCH (Lindane)	%	91			70-130	Pass	
Heptachlor	%	91			70-130	Pass	
Heptachlor epoxide	%	92			70-130	Pass	
Hexachlorobenzene	%	78			70-130	Pass	
Methoxychlor	%	105			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	84			70-130	Pass	
Dimethoate	%	87			70-130	Pass	
Ethion	%	104			70-130	Pass	
Fenitrothion	%	114			70-130	Pass	
Methyl parathion	%	119			70-130	Pass	
Mevinphos	%	101			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	52			25-140	Pass	
2.4-Dichlorophenol	%	62			25-140	Pass	
2.4.5-Trichlorophenol	%	71			25-140	Pass	
2.4.6-Trichlorophenol	%	57			25-140	Pass	
2.6-Dichlorophenol	%	60			25-140	Pass	
4-Chloro-3-methylphenol	%	74			25-140	Pass	
Pentachlorophenol	%	103			25-140	Pass	
Tetrachlorophenols - Total	%	99			25-140	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	104			25-140	Pass	
2-Methyl-4.6-dinitrophenol	%	106			25-140	Pass	
2-Nitrophenol	%	69			25-140	Pass	
2.4-Dimethylphenol	%	57			25-140	Pass	
2.4-Dinitrophenol	%	103			25-140	Pass	
2-Methylphenol (o-Cresol)	%	53			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	52			25-140	Pass	

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
4-Nitrophenol				%	59			25-140	Pass	
Dinoseb				%	101			25-140	Pass	
Phenol				%	37			25-140	Pass	
LCS - % Recovery										
Heavy Metals										
Arsenic (filtered)				%	96			80-120	Pass	
Cadmium (filtered)				%	92			80-120	Pass	
Chromium (filtered)				%	101			80-120	Pass	
Copper (filtered)				%	99			80-120	Pass	
Lead (filtered)				%	99			80-120	Pass	
Mercury (filtered)				%	103			80-120	Pass	
Nickel (filtered)				%	100			80-120	Pass	
Zinc (filtered)				%	100			80-120	Pass	
Test	Lab Sample ID	QA Source		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
Total Recoverable Hydrocarbons					Result 1					
TRH C10-C14	S23-Ja0031107	NCP	%	95				70-130	Pass	
TRH >C10-C16	S23-Ja0031107	NCP	%	88				70-130	Pass	
Spike - % Recovery										
Polycyclic Aromatic Hydrocarbons					Result 1					
Acenaphthene	S23-Ja0029474	NCP	%	78				70-130	Pass	
Acenaphthylene	S23-Ja0029474	NCP	%	80				70-130	Pass	
Anthracene	S23-Ja0029474	NCP	%	83				70-130	Pass	
Fluoranthene	S23-Ja0029474	NCP	%	74				70-130	Pass	
Fluorene	S23-Ja0029474	NCP	%	78				70-130	Pass	
Phenanthrene	S23-Ja0029474	NCP	%	75				70-130	Pass	
Pyrene	S23-Ja0029474	NCP	%	74				70-130	Pass	
Spike - % Recovery										
Organochlorine Pesticides					Result 1					
Chlordanes - Total	S23-Ja0029474	NCP	%	79				70-130	Pass	
4,4'-DDD	S23-Ja0029474	NCP	%	89				70-130	Pass	
4,4'-DDE	S23-Ja0029474	NCP	%	77				70-130	Pass	
4,4'-DDT	S23-Ja0029474	NCP	%	91				70-130	Pass	
a-HCH	S23-Ja0029474	NCP	%	86				70-130	Pass	
Aldrin	S23-Ja0029474	NCP	%	86				70-130	Pass	
b-HCH	S23-Ja0029474	NCP	%	91				70-130	Pass	
d-HCH	S23-Ja0029474	NCP	%	88				70-130	Pass	
Dieldrin	S23-Ja0029474	NCP	%	89				70-130	Pass	
Endosulfan I	S23-Ja0029474	NCP	%	87				70-130	Pass	
Endosulfan II	S23-Ja0029474	NCP	%	94				70-130	Pass	
Endosulfan sulphate	S23-Ja0029474	NCP	%	72				70-130	Pass	
Endrin	S23-Ja0029474	NCP	%	82				70-130	Pass	
Endrin ketone	S23-Ja0029474	NCP	%	78				70-130	Pass	
g-HCH (Lindane)	S23-Ja0029474	NCP	%	88				70-130	Pass	
Heptachlor	S23-Ja0029474	NCP	%	89				70-130	Pass	
Heptachlor epoxide	S23-Ja0029474	NCP	%	88				70-130	Pass	
Hexachlorobenzene	S23-Ja0029474	NCP	%	75				70-130	Pass	
Methoxychlor	S23-Ja0029474	NCP	%	103				70-130	Pass	
Spike - % Recovery										
Organophosphorus Pesticides					Result 1					
Diazinon	S23-Ja0029474	NCP	%	70				70-130	Pass	
Dimethoate	S23-Ja0029474	NCP	%	84				70-130	Pass	
Ethion	S23-Ja0029474	NCP	%	108				70-130	Pass	
Fenitrothion	S23-Ja0029474	NCP	%	115				70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Methyl parathion	S23-Ja0029474	NCP	%	123			70-130	Pass	
Mevinphos	S23-Ja0029474	NCP	%	96			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	S23-Ja0028065	NCP	%	98			75-125	Pass	
Cadmium (filtered)	S23-Ja0028065	NCP	%	99			75-125	Pass	
Chromium (filtered)	S23-Ja0028065	NCP	%	96			75-125	Pass	
Copper (filtered)	S23-Ja0028065	NCP	%	94			75-125	Pass	
Lead (filtered)	S23-Ja0028065	NCP	%	97			75-125	Pass	
Mercury (filtered)	S23-Ja0028065	NCP	%	92			75-125	Pass	
Nickel (filtered)	S23-Ja0028065	NCP	%	91			75-125	Pass	
Zinc (filtered)	S23-Ja0028065	NCP	%	98			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S23-Ja0028012	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S23-Ja0029327	CP	mg/L	0.05	0.08	53	30%	Fail	Q15
TRH C15-C28	S23-Ja0029327	CP	mg/L	0.2	0.2	9.3	30%	Pass	
TRH C29-C36	S23-Ja0029327	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C6-C10	S23-Ja0028012	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	S23-Ja0029327	CP	mg/L	0.06	0.08	37	30%	Fail	Q15
TRH >C16-C34	S23-Ja0029327	CP	mg/L	0.2	0.2	32	30%	Fail	Q15
TRH >C34-C40	S23-Ja0029327	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S23-Ja0028012	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S23-Ja0028012	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S23-Ja0028012	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S23-Ja0028012	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S23-Ja0028012	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	S23-Ja0028012	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S23-Ja0028012	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S23-Ja0029327	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S23-Ja0029327	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S23-Ja0029327	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S23-Ja0029327	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S23-Ja0029327	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S23-Ja0029327	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g,h,i)perylene	S23-Ja0029327	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S23-Ja0029327	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S23-Ja0029327	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a,h)anthracene	S23-Ja0029327	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S23-Ja0029327	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S23-Ja0029327	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	S23-Ja0029327	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S23-Ja0029327	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S23-Ja0029327	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S23-Ja0029327	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
4,4'-DDD	S23-Ja0029327	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
4,4'-DDE	S23-Ja0029327	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
4,4'-DDT	S23-Ja0029327	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Aldrin	S23-Ja0029327	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
b-HCH	S23-Ja0029327	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
d-HCH	S23-Ja0029327	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Dieldrin	S23-Ja0029327	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Endosulfan I	S23-Ja0029327	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Endosulfan II	S23-Ja0029327	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Endosulfan sulphate	S23-Ja0029327	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Endrin	S23-Ja0029327	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Endrin aldehyde	S23-Ja0029327	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Endrin ketone	S23-Ja0029327	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Heptachlor	S23-Ja0029327	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Heptachlor epoxide	S23-Ja0029327	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Hexachlorobenzene	S23-Ja0029327	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Methoxychlor	S23-Ja0029327	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Toxaphene	S23-Ja0029327	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Bolstar	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Chlorfenvinphos	S23-Ja0029327	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Chlorpyrifos	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Chlorpyrifos-methyl	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Coumaphos	S23-Ja0029327	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Demeton-S	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Demeton-O	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Diazinon	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Dichlorvos	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Dimethoate	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Disulfoton	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
EPN	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Ethion	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Ethoprop	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Ethyl parathion	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Fenitrothion	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Fensulfthion	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Fenthion	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Malathion	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Merphos	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Methyl parathion	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Mevinphos	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Monocrotophos	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Naled	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Omethoate	S23-Ja0029327	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Phorate	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Pirimiphos-methyl	S23-Ja0029327	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Pyrazophos	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Ronnel	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Terbufos	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Tetrachlorvinphos	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Tokuthion	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Trichloronate	S23-Ja0029327	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass

Duplicate								
Phenols (Halogenated)				Result 1	Result 2	RPD		
2-Chlorophenol	S23-Ja0029327	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass
2,4-Dichlorophenol	S23-Ja0029327	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass
2,4,5-Trichlorophenol	S23-Ja0029327	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass
2,4,6-Trichlorophenol	S23-Ja0029327	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass
2,6-Dichlorophenol	S23-Ja0029327	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass
4-Chloro-3-methylphenol	S23-Ja0029327	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass
Pentachlorophenol	S23-Ja0029327	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass
Tetrachlorophenols - Total	S23-Ja0029327	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass
Duplicate								
Phenols (non-Halogenated)				Result 1	Result 2	RPD		
2-Cyclohexyl-4,6-dinitrophenol	S23-Ja0029327	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass
2-Methyl-4,6-dinitrophenol	S23-Ja0029327	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass
2-Nitrophenol	S23-Ja0029327	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass
2,4-Dimethylphenol	S23-Ja0029327	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass
2,4-Dinitrophenol	S23-Ja0029327	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass
2-Methylphenol (o-Cresol)	S23-Ja0029327	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass
3&4-Methylphenol (m&p-Cresol)	S23-Ja0029327	CP	mg/L	< 0.006	< 0.006	<1	30%	Pass
4-Nitrophenol	S23-Ja0029327	CP	mg/L	< 0.03	< 0.03	<1	30%	Pass
Dinoseb	S23-Ja0029327	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass
Phenol	S23-Ja0029327	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic (filtered)	S23-Ja0026967	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cadmium (filtered)	S23-Ja0026967	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium (filtered)	S23-Ja0026967	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	S23-Ja0026967	NCP	mg/L	0.009	0.008	3.3	30%	Pass
Lead (filtered)	S23-Ja0026967	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Mercury (filtered)	S23-Ja0026967	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel (filtered)	S23-Ja0026967	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Zinc (filtered)	S23-Ja0026967	NCP	mg/L	0.009	0.008	15	30%	Pass

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q09	The Surrogate recovery is outside of the recommended acceptance criteria due to matrix interference. Acceptance criteria were met for all other QC
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Hannah Mawbey	Analytical Services Manager
Mickael Ros	Senior Analyst-Metal
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Volatile



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

Eurofins shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

**SAMPLE RECEIPT NOTIFICATION (SRN)****Work Order : ES2302296**

Client : **AECOM AUSTRALIA PTY LTD**
Contact : **MR STEPHEN RANDALL**
Address : **LEVEL 21 420 GEORGE STREET
SYDNEY NSW, AUSTRALIA 2000**

E-mail : **Stephen.Randall@aecom.com**
Telephone : **02 8934 0000**
Facsimile : **02 8934 0001**

Project : **60694112**
Order number : **----**
C-O-C number : **----**
Site : **AQUATIC DRIVE DSI**
Sampler : **MATTHEW TAYLOR**

Laboratory : **Environmental Division Sydney**
Contact : **Sepan Mahamad**
Address : **277-289 Woodpark Road Smithfield
NSW Australia 2164**

E-mail : **Sepan.Mahamad@ALSGlobal.com**
Telephone : **+61 2 8784 8555**
Facsimile : **+61-2-8784 8500**

Page : **1 of 2**
Quote number : **ES2021AECOMAU0044 (EN/004/21)**
QC Level : **NEPM 2013 B3 & ALS QC Standard**

Dates

Date Samples Received : **24-Jan-2023 11:15**
Client Requested Due : **01-Feb-2023**
Date

Issue Date : **24-Jan-2023**
Scheduled Reporting Date : **01-Feb-2023**

Delivery Details

Mode of Delivery : **Undefined**
No. of coolers/boxes : **3**
Receipt Detail :

Security Seal : **Not Available**
Temperature : **4.1°C - Ice present**
No. of samples received / analysed : **1 / 1**

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **This is rebatch of ES2301184**
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.



Sample Container(s)/Preservation Non-Compliances

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

- No sample container / preservation non-compliance exists.

Summary of Sample(s) and Requested Analysis

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

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

Matrix: SOIL

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EG005C Leachable Metals by ICPAES	SOIL - EN33a-G TCLP Leachate - Glass Leaching Vessel
ES2302296-001	13-Jan-2023 00:00	HA01_0.2_23011	✓	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.

Requested Deliverables

ACCOUNTS PAYABLE

- A4 - AU Tax Invoice (INV)	Email	AP_CustomerService.ANZ@aecom.com
- Chain of Custody (CoC) (COC)	Email	AP_CustomerService.ANZ@aecom.com

Matthew Taylor

- *AU Certificate of Analysis - NATA (COA)	Email	Matthew.Taylor@aecom.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	Matthew.Taylor@aecom.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	Matthew.Taylor@aecom.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	Matthew.Taylor@aecom.com
- Chain of Custody (CoC) (COC)	Email	Matthew.Taylor@aecom.com
- EDI Format - ENMRG (ENMRG)	Email	Matthew.Taylor@aecom.com
- EDI Format - EQUIS_V5_AECOM_SAMPLE (EQUIS_V5_AECOM_SAMPLE)	Email	Matthew.Taylor@aecom.com
- EDI Format - ESDAT (ESDAT)	Email	Matthew.Taylor@aecom.com

STEPHEN RANDALL

- *AU Certificate of Analysis - NATA (COA)	Email	Stephen.Randall@aecom.com
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	Stephen.Randall@aecom.com
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	Stephen.Randall@aecom.com
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	Stephen.Randall@aecom.com
- Chain of Custody (CoC) (COC)	Email	Stephen.Randall@aecom.com
- EDI Format - ENMRG (ENMRG)	Email	Stephen.Randall@aecom.com
- EDI Format - EQUIS_V5_AECOM_SAMPLE (EQUIS_V5_AECOM_SAMPLE)	Email	Stephen.Randall@aecom.com
- EDI Format - ESDAT (ESDAT)	Email	Stephen.Randall@aecom.com
- Purchase Order Request Letter (PO_Request)	Email	Stephen.Randall@aecom.com



Environmental

CERTIFICATE OF ANALYSIS

Work Order : **ES2302296**
Client : **AECOM AUSTRALIA PTY LTD**
Contact : **MR STEPHEN RANDALL**
Address : **LEVEL 21 420 GEORGE STREET**
SYDNEY NSW, AUSTRALIA 2000
Telephone : **02 8934 0000**
Project : **60694112**
Order number : **----**
C-O-C number : **----**
Sampler : **MATTHEW TAYLOR**
Site : **AQUATIC DRIVE DSI**
Quote number : **EN/004/21**
No. of samples received : **1**
No. of samples analysed : **1**

Page : **1 of 4**
Laboratory : **Environmental Division Sydney**
Contact : **Sepan Mahamad**
Address : **277-289 Woodpark Road Smithfield NSW Australia 2164**
Telephone : **+61 2 8784 8555**
Date Samples Received : **24-Jan-2023 11:15**
Date Analysis Commenced : **30-Jan-2023**
Issue Date : **01-Feb-2023 12:12**



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, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

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

Wisam Marassa

Inorganics Coordinator

Sydney Inorganics, Smithfield, NSW



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the 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 Contract 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.



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	HA01_0.2_23011	----	----	----	----
				Sampling date / time	13-Jan-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2302296-001	-----	-----	-----	-----
				Result		----	----	----	----
EN33: TCLP Leach - Inorganics/Non-Volatile Organics (Glass Vessel)									
Initial pH	----	0.1	pH Unit		7.0	----	----	----	----
After HCl pH	----	0.1	pH Unit		1.6	----	----	----	----
Extraction Fluid Number	----	1	-		1	----	----	----	----
Final pH	----	0.1	pH Unit		5.0	----	----	----	----



Analytical Results

Sub-Matrix: TCLP LEACHATE (Matrix: WATER)				Sample ID	HA01_0.2_23011	----	----	----	----
				Sampling date / time	13-Jan-2023 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2302296-001	-----	-----	-----	-----	-----
					Result	----	----	----	----
EG005(ED093)C: Leachable Metals by ICPAES									
Nickel	7440-02-0	0.1	mg/L	<0.1	----	----	----	----	----



Environmental

QUALITY CONTROL REPORT

Work Order	: ES2302296	Page	: 1 of 3
Client	: AECOM AUSTRALIA PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR STEPHEN RANDALL	Contact	: Sepan Mahamad
Address	: LEVEL 21 420 GEORGE STREET SYDNEY NSW, AUSTRALIA 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: 02 8934 0000	Telephone	: +61 2 8784 8555
Project	: 60694112	Date Samples Received	: 24-Jan-2023
Order number	: ----	Date Analysis Commenced	: 30-Jan-2023
C-O-C number	: ----	Issue Date	: 01-Feb-2023
Sampler	: MATTHEW TAYLOR		
Site	: AQUATIC DRIVE DSI		
Quote number	: EN/004/21		
No. of samples received	: 1		
No. of samples analysed	: 1		



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, unless the sampling was conducted by ALS. 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
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW



General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the 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.

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	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)C: Leachable Metals by ICPAES (QC Lot: 4843256)									
ES2302237-001	Anonymous	EG005C: Nickel	7440-02-0	0.1	mg/L	<0.1	<0.1	0.0	No Limit
ES2302623-003	Anonymous	EG005C: Nickel	7440-02-0	0.1	mg/L	<0.1	<0.1	0.0	No Limit



Method Blank (MB) and Laboratory Control Sample (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 Sample (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 Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EN33: TCLP Leach - Inorganics/Non-Volatile Organics (Glass Vessel) (QCLot: 4840936)								
EN33a-G: Initial pH	----	0.1	pH Unit	1.0	----	----	----	----
EN33a-G: After HCl pH	----	0.1	pH Unit	7.0	----	----	----	----
EN33a-G: Final pH	----	0.1	pH Unit	1.0	----	----	----	----

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Acceptable Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EG005(ED093)C: Leachable Metals by ICPAES (QCLot: 4843256)								
EG005C: Nickel	7440-02-0	0.1	mg/L	<0.1	0.1 mg/L	102	83.0	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: WATER				Matrix Spike (MS) Report			
				Spike Concentration	SpikeRecovery(%) MS	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number			Low	High
EG005(ED093)C: Leachable Metals by ICPAES (QCLot: 4843256)							
ES2302237-002	Anonymous	EG005C: Nickel	7440-02-0	1 mg/L	92.6	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: ES2302296	Page	: 1 of 4
Client	: AECOM AUSTRALIA PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR STEPHEN RANDALL	Telephone	: +61 2 8784 8555
Project	: 60694112	Date Samples Received	: 24-Jan-2023
Site	: AQUATIC DRIVE DSI	Issue Date	: 01-Feb-2023
Sampler	: MATTHEW TAYLOR	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1

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

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- **NO** Quality Control Sample Frequency Outliers exist.



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	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EN33: TCLP Leach - Inorganics/Non-Volatile Organics (Glass Vessel)							
Non-Volatile Leach: 180 day HT (e.g. PFAS, metals ex.Hg) (EN33a-G) HA01 0.2 23011	13-Jan-2023	30-Jan-2023	12-Jul-2023	✔	----	----	----

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG005(ED093)C: Leachable Metals by ICPAES							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG005C) HA01_0.2_23011	30-Jan-2023	31-Jan-2023	29-Jul-2023	✔	01-Feb-2023	29-Jul-2023	✔



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	
Method Blanks (MB)							
TCLP for Non & Semivolatile Analytes - Glass Leaching Vessel	EN33a-G	1	11	9.09	9.09	✔	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 Duplicates (DUP)							
Leachable Metals by ICPAES	EG005C	2	20	10.00	10.00	✔	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Leachable Metals by ICPAES	EG005C	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Leachable Metals by ICPAES	EG005C	1	20	5.00	5.00	✔	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Leachable Metals by ICPAES	EG005C	1	20	5.00	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
Leachable Metals by ICPAES	EG005C	SOIL	In house: referenced to APHA 3120; USEPA SW 846 - 6010: The ICPAES technique ionises leachate sample atoms emitting a characteristic spectrum. This spectrum is then compared against matrix matched standards for quantification. This method is compliant with NEPM Schedule B(3).

Preparation Methods	Method	Matrix	Method Descriptions
Digestion for Total Recoverable Metals in TCLP Leachate	EN25C	SOIL	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
TCLP for Non & Semivolatile Analytes - Glass Leaching Vessel	EN33a-G	SOIL	In house QWI-EN/33 referenced to USEPA SW846-1311: The TCLP procedure is designed to determine the mobility of both organic and inorganic analytes present in wastes. The standard TCLP leach is for non-volatile and Semivolatile test parameters.