Appendix D – Environmental Baseline Assessment Report

Bulk Liquid Storage Facility

Contamination Baseline Assessment Report

Quantem

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Document control record

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1 Introduction

1.1 Commission

Quantem Bulk Liquid Storage and Handling (Quantem) is seeking to develop a bulk liquid storage and handling facility at the Port of Bunbury in Bunbury, Western Australia.

Quantem currently store bulk liquids within the Fremantle Port; however, the planned closure of the Fremantle Port has resulted in Quantem's plan to re-locate their operations to the Port of Bunbury.

A commission was made for an Environmental Baseline Assessment (EBA), as Quantem is required to complete an EBA as part of the lease agreement with the Southern Ports Authority (SPA). In addition, it is in Quantem's interest to complete an EBA prior to a lease agreement and site development to ensure that Quantem is not held liable for existing contamination at the site. It is noted that the proposed site is classified by the Department of Water and Environmental Regulation (DWER) as "Contaminated – remediation required".

This report provides background to the Project, describes the subject land and its context, explains the proposed development activities, provides a sampling methodology, testing results and their implications on relevant planning and environmental considerations. The investigations presented herein were carried out as per the Sampling and Analysis Quality Plan (SAQP) (Aurecon 2022), which will be provided separately.

1.2 Project Appreciation and Objectives

The proposed development site is located at Lot 963 Estuary Drive and Lot 2 Old Coast Road, Vittoria, Western Australia within the Port of Bunbury **(Figure 1-1**) and is managed by the SPA.

Figure 1-1 Proposed Quantem Terminal Site

The EBA is needed to fulfil the lease agreement with the SPA and to establish a contamination baseline prior to site development to ensure that Quantem is not held liable for existing contamination at the site.

1.3 Scope of Works

The EBA scope of work was carried out as follows:

- Desktop study, including review of:
  - Records and published information relevant to the environmental setting and site history;
  - Aerial photographs (current and historic);
  - Publicly available data; and
  - Historic investigation reports, as available.
- Detailed site inspection, including surrounding areas, if accessible, and collection of site photographs;
- Interviews with site representatives, if made available;
- Evaluation of the data collected;
- Identification of any uncertainties (data gaps) or limitations of the investigation;
- Advancing nine boreholes for soil sample collection and converting two of the boreholes into groundwater monitoring wells to carry out one groundwater monitoring event (GME);
- Deliver samples to the nominated laboratories for analyses; and
- Developing an EBA report summarising all the reviewed information and the laboratory results.

1.4 Standards and guidelines

The following guidelines have been relied upon and applied in the completion of this assessment. It is important to note that other guidelines may have been used to supplement those listed below where additional specialist information was required. Furthermore, these guidelines were used to design the sampling methodology only as no health risk assessments were carried out as the objective of this investigation was to provide an environmental baseline.

- National Environment Protection Council (NEPC) 'National Environment Protection (Assessment of Site Contamination) Measure 1999' (amended May 2013; ASC NEPM).
- PFAS National Environment Management Plan (PFAS NEMP) V2.0 2020.
- Assessment and Management of Contaminated sites, Contaminated Sites Guidelines (DWER, 2014);
- Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2018;
- AS/NZS 5667.1: 1998 Water quality – Sampling Part 1: Guidance on the design of sampling programs, sampling techniques and the preservation and handling of samples;
- AS/NZS 5667.10: 1998 Water quality – Sampling Part 10: Guidance on sampling of waste waters; and
- AS/NZS 5667.11:1998 Water Quality – Guidance on Sampling Part 11: Guidance on sampling of groundwaters.

1.5 Limitations

The outcome of this report is limited to information supplied for the activities associated with the scope of works only. It is intended that this assessment provides a description of potentially identified contamination and recommendations on how to address and manage associated issues at the site.

Aurecon notes that this report has been prepared for the use of Quantem only and is based on information provided by the client, other publicly available information sources and the results of the laboratory analysis carried out on the collected soils and groundwater samples. Aurecon takes no responsibility and disclaims all liability whatsoever for any loss or damage that Quantem may suffer because of using or relying on any such information or recommendations contained in this report, except to the extent Aurecon expressly indicates in this report that it has verified the information to its satisfaction. This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should further information become available regarding the conditions at the leased areas, including previously unknown likely sources of contamination, Aurecon reserves the right to review the report in the context of the additional information.

The findings, observations and conclusions expressed by Aurecon are not, and should not be considered as an opinion concerning the commercial feasibility of the property or asset. The report may contain various remarks about and observations on legal documents and arrangements such as contracts, supply arrangements, leases, licences, permits and authorities. A consulting engineer can make remarks and observations about the technical aspects and implications of those documents and general remarks and observations of a non-legal nature about the context of those documents. However, as a consulting engineer Aurecon is not qualified, cannot express and should not be taken as in any way expressing any opinion or conclusion about the legal status, validity, enforceability, effect, completeness or effectiveness of those arrangements or whether what is provided for is effectively provided for. They are matters for legal advice.

2 Site Information and Environmental Setting

The following sections present a summary of site information and environmental setting for the site based on review of historic, where available, and publicly available information.

2.1 Site details

Details of the site are summarised in **Table 2-1**.

Table 2-1 Site Details

Identifier	Description	
Site Name	Quantem Bunbury Terminal	
Site Location	Port of Bunbury Lot 963 Estuary Drive, Vittoria, WA 6230 Site is located within the railway loop to the north of the North Side of the Inner Harbour.	
Site Coordinates	376439.89 m E 6312567.34 m S	
Site Area	Approximately 3.9 hectares.	
Site Features	Site is vacant and covered in grass and some trees and bushes.	
Zoning	The site is reserved 'Port Installations' in the Greater Bunbury Region Scheme (GBRS).	
Site Land Use	Site is currently vacant. Proposed future use as a bulk storage facility.	
Surrounding Land Use	**North**	Leschenault Drive with railway line and vacant land beyond.
	East	Leschenault Drive with the outlet into Vittoria Bay beyond.
	South	Railway line with the North Side of the Inner Harbour beyond.
	West	Alcoa storage silos
	Land Use	Port of Bunbury operations

2.2 Site inspection

The site inspection was undertaken on 28 July 2022 by an Aurecon environmental scientist. Observations from the site inspection are summarised below and site photographs are provided in Appendix A:

- The site is fenced with gate to the site located off Leschenault Drive. The site fence appeared to be in good condition. The gate was unlocked during the site visit.
- The site covered in grass and sporadic bushes with a treeline running along the southern site boundary.
- No built infrastructure present on site.
- The site appeared to be approximately 1.5m – 2.0m higher in elevation compared to Leschenault Drive.
- No visual or olfactory evidence of contamination was identified during the walk over inspection.

2.3 Environment

2.3.1 Climate

A review of the Bureau of Meteorology (BoM) climate data was undertaken, and information was obtained from the nearest monitoring station, being the Bunbury station (009965) located approximately 5 km from the site. The Bunbury station provides climate statistics from 1995 to 2022.

Climate averages of this meteorological station (BoM, 2022) are summarised in **Table 2-2**.

Table 2-2 Climate Detail Summary

Item	Value
Mean maximum annual temperature (°C)	23.2
Mean minimum annual temperature (°C)	11.1
Mean annual rainfall (millimetres)	728.6
Mean days per annum with rainfall ≥ 1 mm	27

2.3.2 Topography

The elevation within the site ranges between approximately 2 and 4 m relative level (RL). The lowest points are in the eastern portion while the highest are situated in the north-western portion of the site. The topography of the site generally slopes east.

A topographical map for the site is provided in Appendix B.

2.3.3 Geology

The Bunbury Burekup sheet of the 1:50,000 scale Environmental Geology series maps indicates the wider area is underlain by Pleistence to Holocene age lagoonal deposits comprising mud, silt and shell beds. The development area is also shown to be partially underlain by fill. Review of historical aerial imagery indicates the area was filled around the late 1960s and early 1970, which raised the overall elevation. The fill is likely to have been comprised of dredge spoil sourced from the dredging of the Bunbury Port.

The dredge spoil was also used to infill the Preston River conduit, which was re-directed prior to the development of the area. Historical aerial photography shows the main channel of the Preston River conduit to run through the wider area (Figure 2.1).

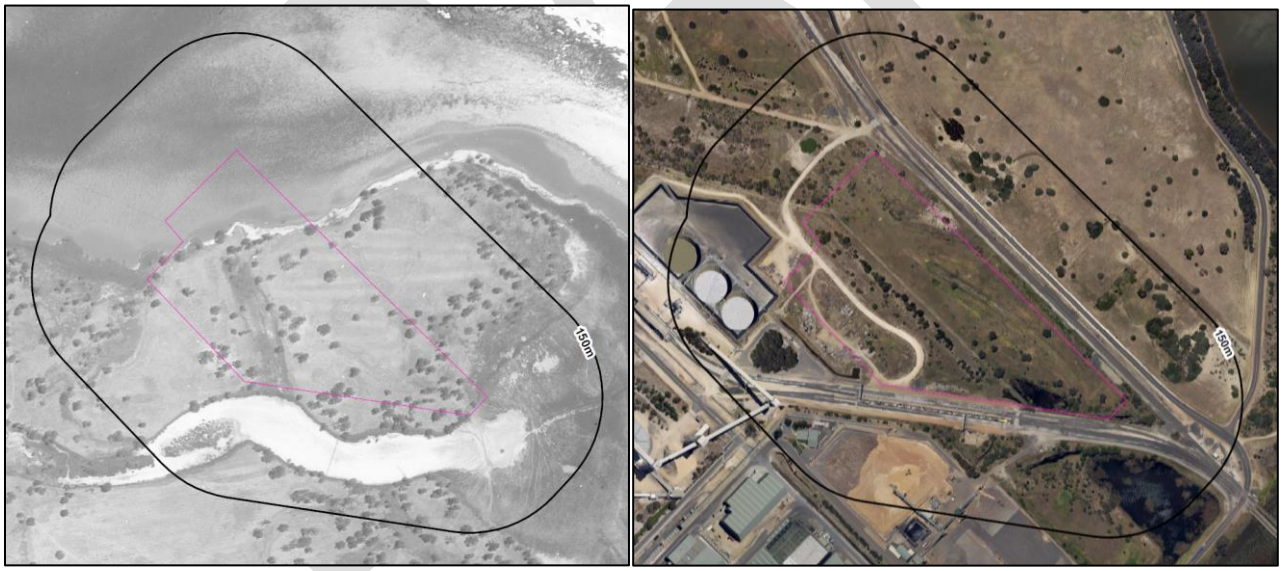


Figure 2-1 Aerial photographs of the Site from 1941 (L) and 2017 (R) showing the position of the Preston River

These surficial deposits are underlain by:

- Pleistocene CALCILUTITE and CALCARENITE of the Tamala Limestone;
- Pleistocene sandy CLAY of the Guilford Formation;
- Cretaceous SANDSTONE of the Leederville Formation on the eastern side of the Site; and
- Cretaceous BASALT flows of the Bunbury Basalt on the western side of the Site.

2.3.1 Acid sulfate soils

A search was performed using the Australian Soil Resource Information System (https://www.asris.csiro.au/). This indicated that the site is located within an area of low probability of ASS risk.

The soil landscape land quality - Subsurface Acidification Risk Map (DPIRD-011) by the Department of Primary Industries and Regional Development (DPIRD) indicates that <3% of map unit has a high subsurface acidification risk or is presently acid. This risk matches that suggested by ASRIS (Figure 2-1).

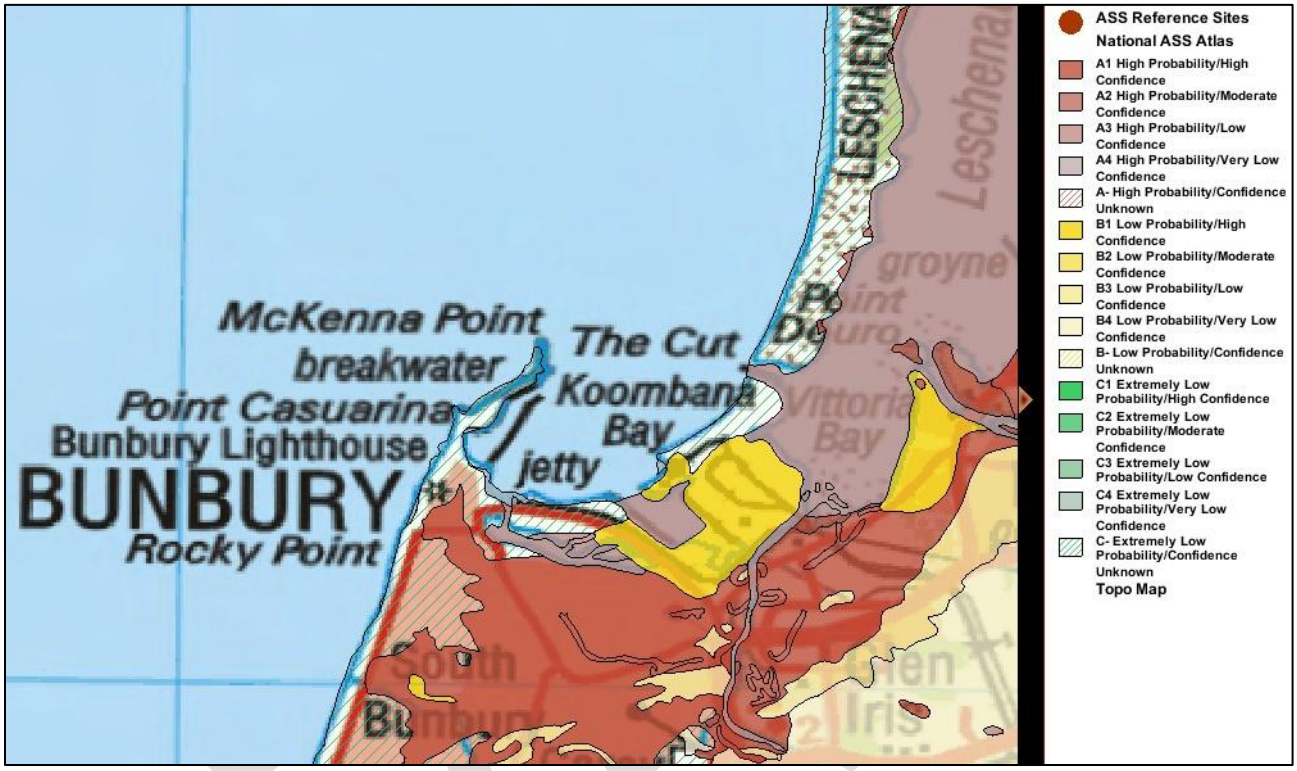


Figure 2-2 ASS Risk Map

2.3.2 Hydrology

There are no surface water bodies on site, however an overflow stormwater retention basin is located to the southeast of the site. Overall surface water flow is likely to the east, towards the stormwater retention basin.

There are some offsite surface water bodies in close proximity of the site:

- Koombana Bay Beach and the Indian Ocean approximately 1.2Km to the northwest
- The Inner Harbour approximately 700m to the south-west.
- Vittoria Bay, which is part of the wider Leschenault Estuary, approximately 450m to the northeast.

2.3.3 Hydrogeology

The Quaternary Safety Bay Sand/Tamala limestone formation of the Perth Basin forms an unconfined aquifer beneath the site providing fresh water supplies. The Bunbury Basalt acts as an aquiclude and is underlain by the Yarragadee Formation, which is the most important and extensive aquifer in the area. It consists of as much as 500 m of coarse sands from which large water supplies can be drawn. The salinity is generally 300 mg/L to 500 mg/L, except where salt-water intrusion has occurred in the Old Harbour area of Bunbury

Review of the Golder geotechnical report indicates the water table is present at depths of between 0 m Australian Height Datum (AHD) and 1 m AHD (between 3.13 and 3.42 metres below ground level [m bgl]). Groundwater flows in a north-westerly direction towards the Indian Ocean. Groundwater is likely to be hydraulically connected and influenced by tidal fluctuations along the coast.

A total of 218 registered groundwater bores are located within a 2 km radius of the site boundary. A majority of the registered groundwater bores are used for monitoring purposes; however, 45 wells are designated for household use. The closest and furthest domestic bores are located approximately 1,245m and 1,989m from site, respectively. At these distances, any potential off site contamination migration is unlikely to pose a threat to the domestic bore users. Registered groundwater bore locations are provided in Appendix C.

3 Site History

This section summarises all available information at the time of writing this report. All information was sourced from Lotsearch, which is a service that provides industry standard reporting designed to support environmental consultants undertaking contaminated land assessments. They have access to over 600 separate datasets to provide comprehensive reports about a site and its potential contamination sources and receptors. The Lotsearch report is provided in Appendix D.

3.1 Historical aerial photography review

Aerial photographs from 1941, 1966, 1975, 1984, 1996, 2001, 2010, 2015, 2017 and 2022 were reviewed, with relevant information summarised in **Table 3-1**. The aerial photographs are provided in Appendix E.

Table 3-1 Historical Aerial Review

Year	Review summary
1941	Photograph captured prior to land reclamation. Northern corner of the site is underwater, and the Preston River flows along the site's southern boundary. Site is vacant and covered in grass and sporadic shrubbery.
1966	No changes to land use or reclamation status observed.
1975	Reclamation of the wider area has been completed. Leschenault Drive and the railway lines to the north-east of the site have been established. Site is vacant and appears devoid of any vegetation.
1984	Railway line to the southwest of the site and two storage silos (currently used by Alcoa) have been established. Site remains vacant and mostly devoid of vegetation.
1996	Current dirt track leading from the Leschenault Drive gate and into the site has been established.
2001	Site remains vacant and devoid of any built infrastructure. Site is covered in grass and sporadic shrubbery.
2010	No changes to land use observed.
2015	No changes to land use observed.
2017	No changes to land use observed.
2022	A treeline is observed running across the length of the site along the south-western border.

3.2 Historical Investigations

The historical environmental reports that were made available for review are listed and summarised below:

- 360 Environmental 2008. 'Preliminary Site Investigation – Bunbury Port Inner Harbour, Proposed Berth 14'. Dated June 2008. (360 Environmental, 2008).
- Parsons Brinckerhoff 2012. 'Preliminary Site Investigation Report – Bunbury Port Berth 14, Leschenault Drive, Vittoria, Western Australia'. Dated 17 August 2012. (Parsons Brinckerhoff, 2012).
- Golder 2017. 'Contamination and Acid Sulfate Soil Investigation, Alcoa Bunbury Port'. Dated June 2017 (Golder, 2017)
- Golder 2017, 'Geotechnical report, Alcoa Bauxite Export – Bunbury Port'. Dated March 2017 (Golder, 2017)
- 360 Environmental 2017. 'Preliminary Site Investigation – Alcoa Long Term Lease Area Portion of Lot 963 Estuary Drive, Vittoria, Bunbury, Western Australia'. Dated September 2017 (360 Environmental, 2017)

Summaries of the two most relevant reports are presented below, which were the most up-to-date investigations available at the time of writing.

3.2.1 Contamination and Acid Sulfate Soil Investigation, Alcoa Bunbury Port (Golder, 2017)

Golder Pty Ltd was engaged by Alcoa of Australia to conduct a contamination and acid sulfate soil investigation, at Alcoa Bunbury port (the site). This investigation aimed to characterise contamination status at the site to establish baseline conditions and be able to identify any potential residual environmental liabilities prior to the lease agreement. This study involved the collection of soil and groundwater samples for analysis of a range of contaminants of potential concern (COPC), including total recoverable hydrocarbons (TRH), total petroleum hydrocarbons (TPH), polycyclic aromatic hydrocarbons (PAH), organochlorine and organophosphate pesticides (OC/OP), phenols, metals and benzene, toluene, ethylbenzene, xylene and naphthalene (BTEXN).

The main findings from this investigation are summarised below:

- Concentrations of all COPC were reported below both laboratory limits of reporting (LOR) and the relevant HIL, ESL and EIL guidelines for all soil samples.
- MW03 reported detections of all TRH fractions, apart from C_{34} - C_{40}, above laboratory LOR.
- Xylene levels at MW03 exceeded laboratory LOR.
- Potentially acidic sulfate soils were present below the water table and are generally encountered in natural material.
- As ASS was present at shallow depths an Acid Sulfate Soil Management Plan (ASSMP) was recommended if material was being excavated from below the groundwater table.

3.2.2 Preliminary Site Investigation – Alcoa Long Term Lease Area Portion of Lot 963 Estuary Drive, Vittoria, Bunbury, Western Australia (360 Environmental, 2017)

360 Environmental Pty Ltd was engaged by Alcoa of Australia to prepare a preliminary site investigation (PSI), inclusive of an Environment, Health, and Safety Assessment, for a long-term lease at the site. Alcoa were proposing to lease the site as a bauxite stockpile and handling area. This investigation aimed to characterise contamination status at the site to establish baseline conditions, to be able to identify any potential residual environmental liabilities prior to the lease agreement.

Key objectives of this investigation are summarised below:

- Define areas of potential contamination (AOPCs);
- Define the sites environmental setting to identify environmental values and sensitive environmental receptors to support an understanding of potential transport pathways for COPCs;
- Identify the relationships between potential sources of contamination and COPCs, human health and environmental receptors, and exposure routes such that exposure pathways can be identified and categorised as part of the preliminary conceptual site model (CSM); and
- Provide an indication of the contamination status of the site, including any residual health and safety risks, and provide recommendations for construction/maintenance work moving forward.

The above objectives were achieved through site assessment works completed in accordance with the site characterisation approach identified in the DWER *Assessment and Management of Contaminated Sites,* Contaminated Sites Guidelines, 2014 (AMCS). The following conclusions/recommendations were made as part of this investigation:

- Seven onsite AOPCs and four offsite APOCs were identified;
- Historical samples indicated impacts to groundwater onsite and offsite, as well as the potential presence of ASS; and
- A soil, groundwater, and surface water sampling program at the identified AOPCs was recommended.

3.3 Environmental incidents and spills register

A spills and environmental incident register does not exist for the site.

3.4 Chemical inventory and storage

No chemical inventory for the site or access to Chemwatch was made available as part of this investigation. Previous reports state that no chemicals are stored within the site boundary; however, trains containing alumina and caustic are running along the site boundary regularly, while caustic soda is stored in storage tanks directly to the south of the site.

3.5 Dangerous goods storage

No dangerous goods storage was identified on site during a site walkover, and none was identified through a review of historical reports.

3.6 Hazardous materials register

A hazardous materials register was not available to Aurecon at the time of reporting, and none were identified during a site walkover. Historically, wooden rail sleepers have been noted at site with the potential to contain asbestos particles, heavy metals, and pesticides; however, these have since been removed. A review of aerial photographs revealed no historical development of the site except for railroads around the perimeter, so a hazardous materials register is not expected to exist.

3.7 Waste disposal records

No information was made available regarding the excavated dredged material used as fill throughout the site.

3.8 Underground and aboveground storage tanks

A review of available information did not reveal any underground storage tanks (USTs) or above ground storage tanks (ASTs) present on-site.

3.9 Environmental registers, licences, and authorities

3.9.1 Department of Water and Environmental Regulation Contaminated Sites Database

The DWER Contaminated Sites Database stores lots of land that have been used or are used to develop notifiable activities (i.e., likely to cause contamination). The database only incorporates land that has previously been reported to DWER. A review of DWER's database revealed that Lot 963 on Plan 220558 (the site) is classified as '*Contaminated – remediation required*'. This classification is due to previous groundwater investigations that have indicated the presence of caustic soda, TPH and PAH beneath the site. This land is restricted to commercial/industrial use with minimal soil access and should not be developed for a more sensitive use such as recreational open space, residential use, or childcare centres. The abstraction of groundwater is not permitted at this site due to the nature and extent of groundwater contamination.

3.9.2 Flammable and combustible liquids licences

Historical reports were analysed to determine which liquids licenses have previously been held for the site and none were found to exist.

4 Data gap review

An evaluation of the information provided by Quantem, and publicly accessible sources was undertaken to develop this EBA. As part of this review, a data gap analysis was undertaken. The data gaps identified are provided below:

- Limited intrusive sampling has been conducted on the fill material present at site. Golder (2017) sampled one location relevant to this investigation and reported all concentrations to be below laboratory LOR and adopted guidelines. This fill material is believed to be excavated dredge spoil; however, the full status of contamination and ASS is unknown. Future investigations should incorporate sampling of this material.
- The lateral extent of the groundwater plume identified by 360 Environmental (2017) is unknown, groundwater monitoring at the site is recommended to delineate this extent.
- Re-assessment of potential risks to human health receptors should be conducted following the collection of additional environmental data.

An integrity assessment was completed to assess the accuracy of desktop information reviewed within the scope of this investigation. The integrity assessment is conducted by reviewing the environmental setting of the site, the historical reports, and the observations made during the site inspection to identify any information discrepancies between reviewed information sources.

No potential data discrepancies were observed during this investigation.

5 Data quality objective and indicators

5.1 Data quality objectives

Data quality objectives (DQOs) are qualitative and quantitative statements derived from the outputs of the first six steps of the seven steps DQO process that:

- Clarify the study objective;
- Define the most appropriate type of data to collect;
- Determine the most appropriate conditions from which to collect data; and
- Specify tolerable limits on decision errors, which will be used as the basis for establishing the quantity and quality of data needed to support the decision.

The DQO process (AS4482.1-2005) follows a systematic approach for defining the criteria that a data collection design should satisfy, including the number of samples and when, where and how to collect these samples. DQOs are employed to develop a scientific and resource-effective data collection design to assure decision makers that the type, quantity and quality of environmental data are appropriate for the intended application. In addition, decision makers will guard against committing sources to data collection efforts that do not support defensible decisions.

The DQOs have been developed to define the type and quality of data required to achieve the aim and objectives stated in Section 1.2. The DQOs were selected with reference to relevant guidelines published by the Australian and New Zealand Guidelines for Fresh and Marine Water Quality 2018 and ASC NEPM, which define minimum data requirements and quality control procedures.

The DQOs have been prepared in line with the DQO process outlined in the ASC NEPM (Schedule B2).

These matters are addressed in the seven-step DQO approach presented in

Process	Response
Step 1: State the Problem	To establish an environmental baseline for contamination within the footprint of the proposed Quantem bulk liquid storage terminal.
Step 2: Identify the Decision	No decision is being made as this investigation was carried out to establish a contamination baseline.
Step 3: Identify the Inputs to the Decision	• Objectives and scope of works of this investigation. • Site history and previous environmental investigations. • Relevant background data obtained during previous investigations. • Field methods, such as sampling, sample storage and preservation, laboratory methods, quality control (QC) and quality assurance (QA). • Media to be sampled. • Field data and laboratory analysis.
Step 4: Define the Boundaries of the Study	The EBA comprises soil and groundwater sampling locations within the footprint of the proposed Quantem bulk liquid storage terminal. The vertical spatial boundary will generally extend to within the shallow unconfined groundwater aquifers, at a depth of up to 5.0 m bgl.

Process	Response
Step 5: Develop a Decision Rule	No screening criteria were adopted as this is a baseline assessment. The analytical results will be tabulated and COPCs presented as whether being present or not.
Step 6: Specify Tolerable Limits on Decision Errors	Samples are to be analysed by a National Association of Testing Authorities (NATA) Accredited Laboratory within approved sample holding times. Acceptance limits on field and laboratory data collected for this investigation will be in accordance with ASC NEPM.
Step 7: Optimise the Design for Obtaining Data	Refer to SAQP

5.2 Data quality indicators

The data quality indicators (DQIs) for the assessment are presented in **Table 5-1 Data Quality indicators**.

Table 5-1 Data Quality indicators

DQI	Field	Laboratory	Acceptability limits
Completeness	• Site soils identified to be potentially impacted by contamination pose a potential risk to health, safety and the environment and may require remediation to render the site suitable for any future site use. • Appropriate sampling procedures to be used • Experienced field team to undertake the investigation • Correct documentation to be completed	• All required samples analysed • Appropriate methods • Appropriate limits of reporting (LORs) • Sample documentation correct • Sample holding times in compliance	ASC NEPM
Comparability	• Correct sample procedures used at each location • Experienced field team • Same type (medium, volume and sampling technique) of samples collected	• Same analytical methods used • Appropriate LORs • Samples submitted to the same NATA accredited laboratory • Analytical data is presented in the same unit	ASC NEPM
Representativeness	• Appropriate media sampled • All media identified	• All required samples analysed	ASC NEPM
Precision	• Correct sample procedures used at each location • Collection of appropriate quality assurance (QA)/ quality control (QC) samples	• Analysis of: • Duplicate samples (1 per 20 samples collected) • Laboratory duplicate samples	Relative percent deviation (RPD) of 30-50%
Accuracy	• Sampling procedures appropriate and complied with • Collection of appropriate QA/QC samples	• Analysis of: • Method blanks • Laboratory surrogate spikes • Laboratory control samples • Reference material	Non-detect for contaminants of concern 70-130%

5.3 SAQP Variations

One variation from the SAQP was made due to unexpected site conditions. Access to pre-exiting groundwater well B-015B via vehicle was restricted due to soft, wet ground as well as risk to field staff from lightning. As such, groundwater samples from the well were collected via bailer to minimise exposure.

6 Investigation

The following sections provide an investigation methodology, site observations and descriptions of the sediment cores. Deviations from the Aurecon SQAP and whether these may have impacted DQOs and DQIs are also discussed.

6.1 Soil Sample Collection

Soil samples were collected as follows:

- A total of nine boreholes were advanced across the site.
- Seven boreholes (EMW1, EMW2, EBH01 – EB04 and EBH07) were advanced using a Geoprobe Model 7822DT percussion hammer drill rig. This drilling method provided undisturbed samples for logging of soil profiles and collection of samples for laboratory analysis.
- Two boreholes (EBH05 and EBH06) were advanced using a hand auger due to access issues.
- A 50 mm diameter polycarbonate core tubing was used to collect soil cores from the mechanically drilled boreholes. The tubing was cut open to enable collection of discrete samples from various depths.
- Soil from the hand augered boreholes were laid out on plastic sheeting, soil profiles logged and discrete samples from various depths collected.
- All soil samples were collected with freshly gloved hands, using nitrile gloves, to minimise the potential for cross contamination.
- Samples were collected in laboratory provided glass and/or Teflon-free jars under COC protocols and placed in chilled eskies for delivery to the laboratory for analysis.
- Boreholes EMW1 and EMW2 were advanced to 5 m bgl and converted to groundwater monitoring wells. The wells were screened from 2 m to 5 m bgl.
- Boreholes EBH01 – EBH07 were advanced to a maximum depth of 3 m bgl; they were only used to collect soil samples and were subsequently backfilled.

6.2 Groundwater Sample Collection

Groundwater samples were collected as follows:

- Wells EMW1 and EMW2 were gauged to confirm standing water levels. Pre-existing well B-015B was not gauged due to access issues and weather conditions.
- At wells EMW1 and EMW2, a water meter with flow cell was used to measure the groundwater's physical parameters whilst undergoing low-flow pumping (approximate flowrate of 250ml/minute). A peristaltic pump will be used to pump out the groundwater. The groundwater's physical parameters were not measured at B-015B as heavy rains caused muddy conditions restricting vehicular access and development of lighting posed a risk to field staff. As such, groundwater samples from well B-015B were collected via bailer to minimise field staff exposure to risky weather conditions.
- Groundwater samples will be collected into bottles provided by the laboratory once the physical parameters stabilise to ensure representative samples of the aquifer are analysed.
- The sample bottles will be labelled, and chain of custody (CoC) documentation will be filled out.
- All groundwater samples will be collected with freshly gloved hands to minimise the potential for cross contamination.

6.3 Laboratory Analysis

Primary and duplicate samples were submitted to a NATA-accredited laboratory (ALS) for analysis of the following COPCs. Analytical densities for soil and groundwater samples are provided in **Table 6-1** and **Table 6-2**, respectively.

Table 6-1 Primary Soil Samples and Analysis

Sample ID	Sample Depth (mbgl)	Sample ID	Sample Depth (mbgl)	Analyses
BH01_0-0.5	0 – 0.5	BH06_2.5-3.0	2.5 – 3.0	• Full WA Waste Classification Suite • Full PFAS 28 Analytes • Asbestos
BH01_2.5-3.0	2.5 – 3.0	BH07_0.5-1.0	0.5 – 1.0	
BH02_0-0.5	0 – 0.5	BH07_2.5-3.0	2.5 – 3.0	
BH02_2.5-3.0	2.5 – 3.0	MW1_0-0.5	0 – 0.5	
BH03_0.5-1.0	0.5 – 1.0	MW1_3-3.5	3.0 – 3.5	
BH03_2.0-2.5	2.0 – 2.5	MW1_4.0-4.5	4.0 – 4.5	
BH04_0-0.5	0 – 0.5	MW2_0-0.5	0 – 0.5	
BH04_2.5-3.0	2.5 – 3.0	MW2_3-3.5	3.0 – 3.5	
BH05_0-0.5	0 – 0.5	MW2_4.5-5.0	4.0 – 4.5	
BH06_0.5-1.0	0.5 – 1.0	-	-	

Table 6-2 Primary Groundwater Samples and Analysis

Sample ID	Analysis Suites	
	Waste Classification	PFAS
EMW1	Full WA Waste Classification Suite	Full 28 analytes
EMW2		
BH02_0-0.5		

The analytes included within the Full WA Waste Classification Suite are:

- TPH and TRH
- BTEXN;
- PAH;
- Metals and metalloids;
- Phenolic compounds;
- Halogenated benzenes; and
- Herbicides and OC/OP.

7 Data validation

7.1 Field data quality review

7.1.1 Chain of custody

Samples were transported to the laboratory under a Chain of Custody (CoC) protocol. Information on the CoC included the sampler, sample identifier, sample matrix, collection date, analyses to be performed, sample preservation method, sample release date and sample received date. Laboratory documents including COCs are provided in Appendix G.

7.1.2 Sample Splitting Techniques

Duplicate and triplicate samples were collected by taking representative samples of the same matrix. Primary, duplicate and triplicate samples were collected concurrently to minimise heterogeneity. Furthermore, samples were not mixed or homogenised during collection or splitting sampling in the field. Although care was taken to collect, divide and submit samples as representative of the primary sample as possible. There is an inherent level of heterogeneity, especially in solid matrices, that cannot be avoided.

7.1.3 Statement of duplicate frequency

Table 7-7-1 provides details of duplicate samples collected during the investigation.

Table 7-7-1 Field Duplicate Identification

Primary sample	Date collected	Matrix	Intra-laboratory duplicates	Inter-laboratory triplicates
BH02_0-0.5	28/08/2022	Soil	QC101	QC201
BH06_0-0.5	29/08/2022	Soil	-	QC202
MW2	16/08/2022	Water	QC102	QC203

Table 7-7-2 provides quantities of duplicate samples collected during the investigation.

Table 7-7-2 Field Duplicate Ratio

Media	Total Primary Samples	Total intra-laboratory duplicates	Total inter-laboratory duplicates	Ratio
Soil	19	1	2	1:19
Water	3	1	1	1:3

Field intra- and inter-laboratory duplicate/triplicate sampling ratios both meet the adopted QA/QC sampling requirements as specified in AS 4482.1-2005, which requires a ratio of 1:20. The only exception to this ratio is the PFAS duplicate requirements as the PFAS NEMP stipulates the need of a 1:10 ratio. As such, an additional duplicate and triplicate sample was collected to be tested for PFAS only.

7.2 Laboratory data quality review

7.2.1 Accreditation and analytical methods used

The primary laboratory used was ALS while the secondary laboratory was Eurofins. ALS and Eurofins' NATA-accreditation numbers are 825 and 1261, respectively.

7.2.2 Holding times

No holding times exceeded their specified ranges. The samples were delivered to the designated laboratories within 24 hours of collection.

7.2.3 Relative percent difference

Data validation of duplicate samples was undertaken by calculation of the relative percent difference (RPD) from the mean. RPDs for the samples are calculated using the formula:

RPD % = [(Result no. 1 – Result no. 2)/mean result] x 100

RPD data are used to determine the precision/reproducibility of results. The precision of laboratory analytical results is deemed to be suitable if RPD values fall within the recommended range of 30% RPD where one or both values were greater than 10 x LOR or 50% RPD where one or both values less than 10 x LOR.

RPDs for the analysed COPCs were within the recommended range of 30% RPD where one or both values were greater than 10 x LOR. As such, the analytical data are considered robust and are appropriate to be used in such an assessment.

7.3 Analytical data validation summary

The analytical data were assessed against the DQIs. The following comments can be viewed as an overall summary of the quality of the analytical component for this project:

- Sample integrity and container requirements were documented as acceptable for all samples.
- Holding time compliances were documented as acceptable for all samples.
- Laboratory duplicate RPD (% RPD) results indicated that sample precision was acceptable for analytes.
- Laboratory QA/QC method blanks were reported to have analytical concentrations below the laboratory detection limits and thus found to be acceptable.

Based on the RPD's and the QA/QC report, the analytical results are considered representative of the concentration of the parameters within the soil and groundwater. It is therefore likely that the QA procedures implemented were acceptable in minimising cross contamination during sampling and transportation to the analytical laboratory. The quality of the analytical component of this project is considered acceptable.

8 Results

8.1 Observations

Observations made during the soil sample collection are summarised below in **Table 8-1** and photographs presented in **Appendix F**:

Table 8-1 Soil Observations

Borehole ID	Soil Description	Water table
EMW01	0m – 0.15mbgl TOPSOIL: silty SAND, fine to medium grained with some organics. Non-plastic. 0.15m – 1.0mbgl FILL: SAND with minor clay and trace shells. Fine to medium grained, non-plastic. 1.0m – 3.0mbgl FILL: SAND, fine grained and poorly sorted. 3.0m – 4.0mbgl FILL: SAND, fine to medium grained and poorly sorted. 4.0m – 5.0mbgl NATURAL: SAND, medium to coarse grained with some crushed shells.	3 m bgl
EMW02	0m – 0.1mbgl TOPSOIL: silty SAND, fine to medium grained with trace organics. Low plasticity. 0.1m – 0.7mbgl FILL: silty SAND, fine to medium grained with trace gravels (limestone) and organics. Low plasticity. 0.7m – 1.0mbgl Fill: SAND, fine to medium grained, poorly sorted. 1.0m – 3.0mbgl FILL: Silty, clayey SAND, fine to medium grained. Low plasticity. 3.0m – 3.8mbgl FILL: SAND, fine to medium grained and poorly sorted. 3.8m – 5.0mbgl NATURAL: Silty SAND, medium to medium grained. Low plasticity. Some crushed shells at 4.5mbgl. Sulfurous odours at 4.5m to 5.0mbgl.	3 m bgl
EBH01	0m – 0.2mbgl TOPSOIL: SAND with trace gravels. Fine to medium grained sand. Medium, rounded gravels. 0.2m – 3.0mbgl FILL: SAND, medium to coarse grained, poorly sorted.	3mbgl
EBH02	0m – 0.2mbgl TOPSOIL: SAND with trace gravels. Fine to medium grained sand. Medium, rounded gravels. 0.2m – 3.0mbgl FILL: SAND, medium to coarse grained, poorly sorted.	3mbgl
EBH03	0m – 1.0mbgl FILL: SAND with trace silt. Fine to medium grained sand. Non-plastic. 1.0m – 3.0mbgl FILL: SAND with some crushed shells. Medium to coarse grained sand.	3mbgl

Borehole ID	Soil Description	Water table
EBH04	0m – 0.2mbgl TOPSOIL: SAND with trace gravels. Fine to medium grained sand. Medium, rounded gravels. 0.2m – 3.0mbgl FILL: SAND, medium to coarse grained, poorly sorted.	3mbgl
EBH05	0m – 0.2mbgl TOPSOIL: Silty SAND with some organics. Fine to medium grained sand. Low plasticity. 0.2m – 0.7mbgl FILL: Silty SAND with trace limestone gavels and crushed shells. Fine to medium grained sand. Non-plastic. Refusal at 0.7mbgl.	No GW
EBH06	0m – 0.2mbgl TOPSOIL: Silty SAND with some organics. Fine to medium grained sand. Low plasticity. 0.2m – 2.0mbgl FILL: Silty SAND with trace limestone gavels and crushed shells. Fine to medium grained sand. Non-plastic. 2.0m – 3.0mbgl FILL: SAND with minor silt. Medium to coarse sand. Non-plastic. Moist.	No GW
EBH07	0m – 0.2mbgl TOPSOIL: Silty SAND with some organics. Fine to medium grained sand. Low plasticity. 0.2m – 2.0mbgl FILL: Silty SAND with trace limestone gavels and crushed shells. Fine to medium grained sand. Non-plastic. 2.0m – 3.0mbgl FILL: SAND with minor silt. Medium to coarse grained sand. Non-plastic. Moist.	No GW

Observations made during the groundwater sample collection are summarised below on Table 8-2:

Table 8-2 Groundwater Observations

Well ID	Groundwater Description	SWL (mbgl)
EMW01	Groundwater was colourless, no suspended particles and did not have an odour.	2.44
EMW02	Groundwater was colourless, no suspended particles and did not have an odour.	2.35
B-015B	Groundwater was colourless, no suspended particles and did not have an odour.	Not measured*

**B0-15B was not measured due to access issues and thunderstorms. Groundwater samples were collected via bailer.*

8.2 Analytical Results

This section discusses the analytical results from the soil and groundwater sample testing carried out by the laboratory.

8.2.1 Soil Analytical Results

The analysed COPCs did not exceed the laboratory LORs with the exception of the following:

- Metals and metalloids
    - Aluminium (Al), arsenic (As), barium (Ba), Cobalt (Co), copper (Cu), lead (Pb), manganese (Mn), molybdenum (Mo), nickel (Ni), vanadium (V) and zinc (Zn).

- PFAS
    - Sum of PFAS, PFOS and sum of PFHx and PHOS.
- Inorganics
    - Fluoride.

The laboratory results are tabulated in Tables G1 to G7 and presented in **Appendix G**. All analytical soil results are provided in **Appendix H**. Sample location plan is provided in **Appendix I**.

8.2.2 Groundwater Analytical Results

The analysed COPCs did not exceed the laboratory's LOR with the exception of the following:

- Metals and metalloids
    - Al, As, Ba, boron (B), chromium III (CrIII), Cu, Pb, Mo and Ni.
- Inorganics
    - Fluoride.

The laboratory results are tabulated in Tables G8 to G14 and presented in **Appendix G**. All analytical soil results are provided in **Appendix H**. Sample location plan is provided in **Appendix I**.

9 Conclusions

The analytical data collected during this investigation, indicates presence of some metals and metalloids, PFAS and fluoride in soils. The groundwater has a similar contamination profile except PFAS was not detected within the groundwater samples.

There are no published background concentrations for metals and metalloids or fluoride. As such, it is difficult to confirm whether these identified COPCs were introduced into site soils and groundwater by the historic surrounding industrial activities and/or land reclamation or whether they are naturally occurring. Furthermore, the groundwater results represent a snapshot of aquifer conditions at the time of the investigation. As such, comments on the effect of seasonal variation on the groundwater cannot be made.

The site can be considered relatively clean considering it being located within an industrialised area, however the actual site is yet to be developed which would explain the lack of any extensive contamination.

9.1 EBA utility

The findings of this EBA can be utilised as follows:

- The soil analytical results could be used to inform off-site disposal options of surplus spoil generated by the earthworks associated with the proposed development. The results could be provided to the nominated landfill operators to assess whether the contaminant loading of the spoil meets their acceptance criteria. It should be noted that a finalised cut/fill plan was not available during the authoring of this EBA, therefore the sampling density may not be sufficient. The number of samples required to confirm waste classification as per the DWER Landfill Waste Classification and Waste Definitions 1996 guidance are provided in **Table 9-1**:

  Table 9-1 Waste Disposal Sampling Densities

Volume (m^3)	Number of Samples
100 to 200	4
200 to 500	6
500 to 1,000	8
1,000 to 2,000	11
2,000 to 3,000	15
3,000 to 4,000	18
4,000 to 5,000	20
5,000 to 10,000	24
>10,000	24 plus 4 for each additional 10,000m^3

  A total of 19 soil samples were collected and analysed for this EBA. This number of samples would classify a spoil volume ranging from 3,000 to 4,000m^3. Any volume of spoil greater than this would likely require further testing.

- The analytical findings can be adopted to serve as a pre-operations environmental baseline to measure against once the site becomes operational to confirm whether operations are having an impact on soil and groundwater.
- The analytical findings could also be used as remediation criteria to be targeted once operations cease and the site is decommissioned.

Appendix A
Site Photographs

aurecon	Site Inspection Photographic Log
Client Name Quantem	**Project** P521420 PSI Quantem Bulk Liquid Storage Facility

Photo No. 1	**Date** 28/09/22
Description Looking NE towards the Railway line and site fence beyond	

Photo No. 2	**Date** 29/09/22
Description Site overview – Looking NW showing a vacant site covered in grass and sporadic vegetation.	

aurecon	Site Inspection Photographic Log
Client Name Quantem	**Project** P521420 PSI Quantem Bulk Liquid Storage Facility

Photo No. 3	**Date** 28/09/22

Description

NW site boundary showing difference in elevation

Appendix B
Topographic Map

aurecon

Legend

- Contours (2m)
- Approximate Site Location

Notes: Nearmap Imagery, Esri Community Maps Contributors, Geoscape, Esri, HERE, Garmin, Foursquare, METI/ NASA, USGS, Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community, Esri, HERE, Garmin, FAO, NOAA, USGS, Esri, USGS

Date: 31/08/2022 Version: 1

Author: PVC

C:\Users\nicola.webb\Aurecon Group\521420 - Quantem Bunbury Terminal ID Stage - 8. GIS Figures\Spatial Workspace\Working\P521420_Quantem_20220808\

A4 scale: 1:2,500

0 37.5 75 Metres

Job No: P521420

Coordinate System: GDA 1994 MGA Zone 50

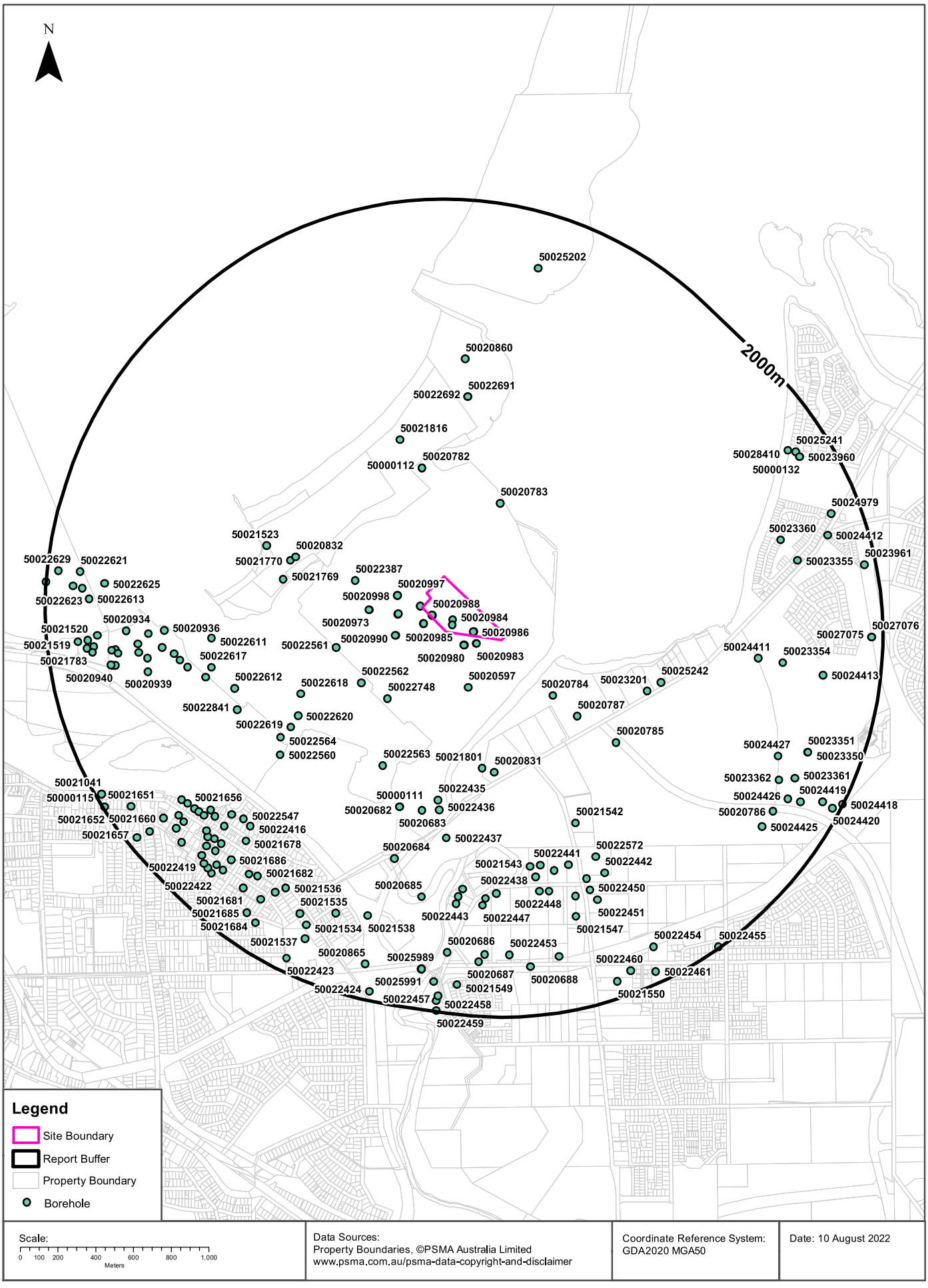
Quantem Bunbury Terminal

Elevation (Contours 2m) - Sheet 1 of 1

Appendix C
Registered Boreholes

Groundwater Boreholes

Lot 963 Estuary Drive, Vittoria, WA 6230



Appendix D
Lotsearch Documentation

LOTSEARCH

LOTSEARCH ENVIRO PROFESSIONAL

Address: Lot 963 Estuary Drive, Vittoria, WA 6230

Date: 10 Aug 2022 13:01:59

Reference: LS035243 EP

Dataset Listing

Datasets contained within this report, detailing their source and data currency:

Dataset Name	Custodian	Supply Date	Currency Date	Update Frequency	Dataset Buffer (m)	No. Features Onsite	No. Features within 100m	No. Features within Buffer
Contaminated Sites Database	WA Department of Water and Environmental Regulation (DWER)	19/07/2022	18/07/2022	Monthly	1000	1	1	6
Site Management Plans	WA Department of Water and Environmental Regulation (DWER)	20/05/2022	20/05/2022	Quarterly				
National Waste Management Facilities Database	Geoscience Australia	26/05/2022	07/03/2017	Annually	1000	0	0	0
National Liquid Fuel Facilities	Geoscience Australia	23/06/2022	15/03/2012	Annually	1000	0	0	0
Defence PFAS Investigation & Management Program - Investigation Sites	Department of Defence	01/08/2022	01/08/2022	Monthly	2000	0	0	0
Defence PFAS Investigation & Management Program - Management Sites	Department of Defence	01/08/2022	01/08/2022	Monthly	2000	0	0	0
Airservices Australia National PFAS Management Program	Airservices Australia	01/08/2022	01/08/2022	Monthly	2000	0	0	0
Defence 3 Year Regional Contamination Investigation Program	Department of Defence	06/06/2022	06/06/2022	Quarterly	2000	0	0	0
Licences and Works Approvals	WA Department of Water and Environmental Regulation (DWER)	07/06/2022	07/06/2022	Monthly	1000	0	2	2
Mines and Mineral Deposits (MINEDEX)	WA Department of Mines and Petroleum	01/08/2022	01/08/2022	Monthly	1000	0	0	12
Inventory of Abandoned Mine Sites Database	WA Department of Mines and Petroleum	28/01/2022	04/11/2019	Annually	1000	0	0	0
Petroleum Wells	WA Department of Mines and Petroleum	23/06/2022	02/02/2022	Quarterly	1000	0	0	0
National Groundwater Information System (NGIS) Boreholes	Bureau of Meteorology	24/01/2022	24/01/2022	Annually	2000	6	16	218
1:500 000 State Interpreted Bedrock Geology	WA Department of Mines and Petroleum	07/11/2017	30/06/2016	As required	1000	1	1	1
1:500 000 State Linear Structures	WA Department of Mines and Petroleum	07/11/2017	30/06/2016	As required	1000	0	0	0
1:500 000 State Cenozoic Geology	WA Department of Mines and Petroleum	07/11/2017	30/06/2016	As required	1000	0	0	1
Atlas of Australian Soils	ABARES	19/05/2017	17/02/2011	As required	1000	1	1	2
Atlas of Australian Acid Sulfate Soils	CSIRO	19/01/2017	21/02/2013	As required	1000	1	1	3
Commonwealth Heritage List	Australian Government Department of Agriculture, Water and the Environment	03/06/2022	13/04/2022	Annually	1000	0	0	0
National Heritage List	Australian Government Department of Agriculture, Water and the Environment	03/06/2022	13/04/2022	Annually	1000	0	0	0
WA State Heritage Register	WA State Heritage Office	28/09/2021	28/09/2021	Monthly	1000	0	0	0
Bush Fire Prone Areas	WA Department of Fire and Emergency Services	25/11/2019	28/09/2019	Annually	1000	0	0	10
Groundwater Dependent Ecosystems Atlas	Bureau of Meteorology	14/08/2017	15/05/2017	Annually	1000	0	0	25
Ramsar Wetlands of Australia	Australian Government Department of Agriculture, Water and the Environment	28/03/2022	19/03/2020	Annually	1000	0	0	0

Aerial Imagery 2022

Lot 963 Estuary Drive, Vittoria, WA 6230

Contaminated Land

Lot 963 Estuary Drive, Vittoria, WA 6230

Legend

Site Boundary	**DWER Contaminated Sites**
Report Buffer	Contaminated - remediation required
Property Boundary	Contaminated - restricted use
	Remediated for restricted use

Scale:	Data Sources:	Coordinate Reference System:	Date:
0 100 200 400 600 Meters	Property Boundaries, ©PSMA Australia Limited www.psma.com.au/psma-data-copyright-and-disclaimer	GDA2020 MGA50	10 August 2022

Contaminated Land

Lot 963 Estuary Drive, Vittoria, WA 6230

DWER Contaminated Sites Database

Sites in the DWER Contaminated Sites Database within the dataset buffer:

Site ID	Classification	Lot on Plan / Diagram	Certificate of Title	Database Status	Location Confidence	Distance	Direction
14559	Contaminated - remediation required	LOT 963 ON PLAN 220558	LR3115/894	Current Contaminated Sites Database	As Supplied	0m	Onsite
14558	Contaminated - remediation required	LOT 963 ON PLAN 220558	LR3115/894	Current Contaminated Sites Database	As Supplied	281m	South East
17729	Remediated for restricted use	LOT 2 ON PLAN 23101	2140/831	Current Contaminated Sites Database	As Supplied	410m	North
9173	Contaminated - remediation required	LOT 1 ON PLAN 23101	2140/830	Current Contaminated Sites Database	As Supplied	508m	North West
14560	Contaminated - remediation required	LOT 2 ON PLAN 23101	2140/831	Current Contaminated Sites Database	As Supplied	709m	West
42005	Contaminated - remediation required	LOT 428 ON PLAN 30984	LR3007/556	Current Contaminated Sites Database	As Supplied	805m	North West

Contaminated Sites Database Data Source: WA Department of Water and Environmental Regulation

Waste Management and Liquid Fuel Facilities

Lot 963 Estuary Drive, Vittoria, WA 6230

National Waste Management Site Database

Sites on the National Waste Management Site Database within the dataset buffer:

Site ID	Name	Address	Suburb	Owner	Class	Landfill Status	Reproc Status	Transfer Status	Revised Date	Comments	Loc Conf	Dist	Dir'n
N/A	No records in buffer												

National Liquid Fuel Facilities

National Liquid Fuel Facilties within the dataset buffer:

Map Id	Owner	Name	Address	Suburb	Class	Operational Status	Operator	Revision Date	Loc Conf	Dist (m)	Dir
N/A	No records in buffer										

PFAS Investigation Sites

Lot 963 Estuary Drive, Vittoria, WA 6230

Defence PFAS Investigation and Management Program Investigation Sites

Sites being investigated by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

Defence PFAS Investigation & Management Program Data Custodian: Department of Defence, Australian Government

Defence PFAS Investigation and Management Program Management Sites

Sites being managed by the Department of Defence for PFAS contamination within the dataset buffer:

Map ID	Base Name	Address	Loc Conf	Dist	Dir
N/A	No records in buffer				

Defence PFAS Investigation & Management Program Data Custodian: Department of Defence, Australian Government

Airservices Australia National PFAS Management Program

Sites being investigated or managed by Airservices Australia for PFAS contamination within the dataset buffer:

Map ID	Site Name	Impacts	Loc Conf	Distance	Direction
N/A	No records in buffer				

Airservices Australia National PFAS Management Program Data Custodian: Airservices Australia

Defence Sites

Lot 963 Estuary Drive, Vittoria, WA 6230

Defence 3 Year Regional Contamination Investigation Program

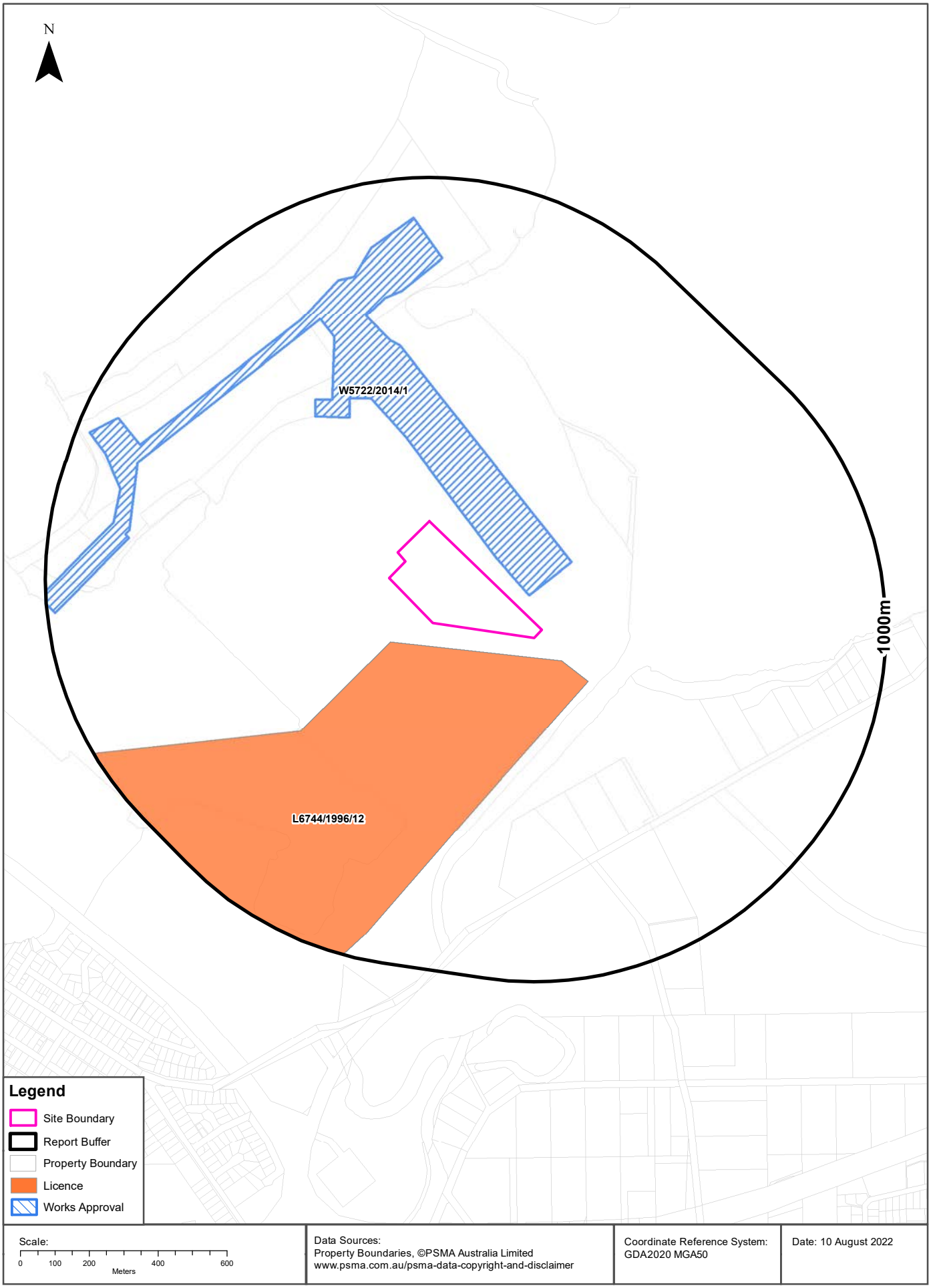
Sites which have been assessed as part of the Defence 3 Year Regional Contamination Investigation Program within the dataset buffer:

Property ID	Base Name	Address	Known Contamination	Loc Conf	Dist	Dir
N/A	No records in buffer					

Defence 3 Year Regional Contamination Investigation Program, Data Custodian: Department of Defence, Australian Government

DWER Licences and Works Approvals

Lot 963 Estuary Drive, Vittoria, WA 6230



DWER Licences and Works Approvals

Lot 963 Estuary Drive, Vittoria, WA 6230

DWER Licences and Works Approvals

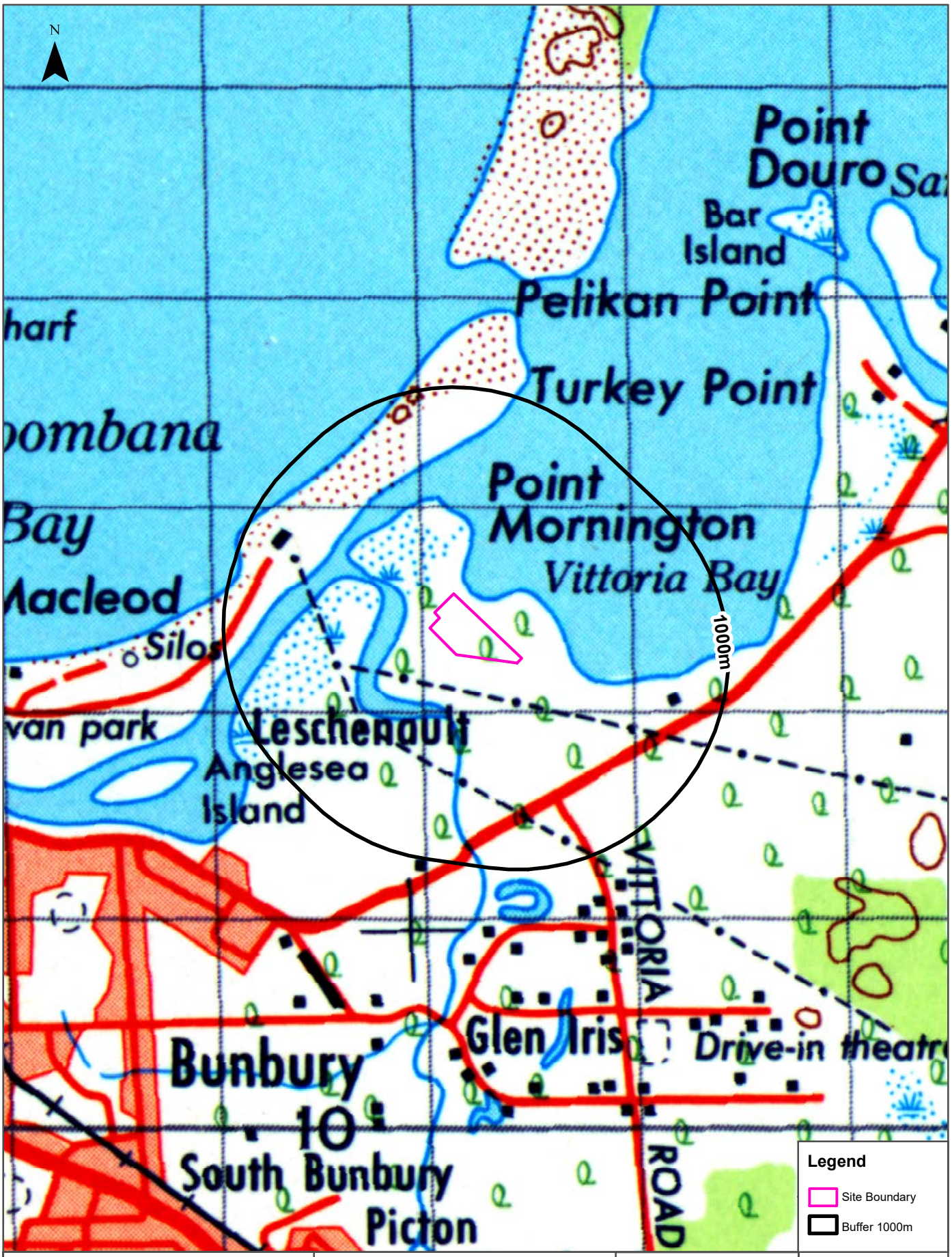
DWER Licences and Works Approvals within the dataset buffer:

Licence / Works No.	Type	Licence Holder	Premise	Location	LGA	Date Issued	Date Commenced	Date of Expiry	Category	Loc Conf	Dist	Dir'n
W5722/2014/1	Works approval	Lanco Resources Australia Pty Ltd	Bunbury Inner Harbour - Berth 14A, Estuary Drive	Lot 1 and Lot 2 on Plan 23101, Portion of Lot 428 on Plan 30984, Portion of Lot 963 and 965 on Plan 220558	Bunbury City	2015-10-15	2015-10-19	2020-10-18	58 - Bulk material loading or unloading	Premise Match	45m	North West
L6744/1996/12	Licence	Southern Ports Authority	Southern Ports Authority	Lot 963 on Plan 220558 and Lot 962 on Plan 219848, Inner Harbour – Berth 5 and 8	Bunbury City	2015-09-25	2015-09-30	2031-09-29	58 - Bulk material loading or unloading	Premise Match	57m	South West

Licences and Works Approvals Data Source: WA Department of Water and Environmental Regulation

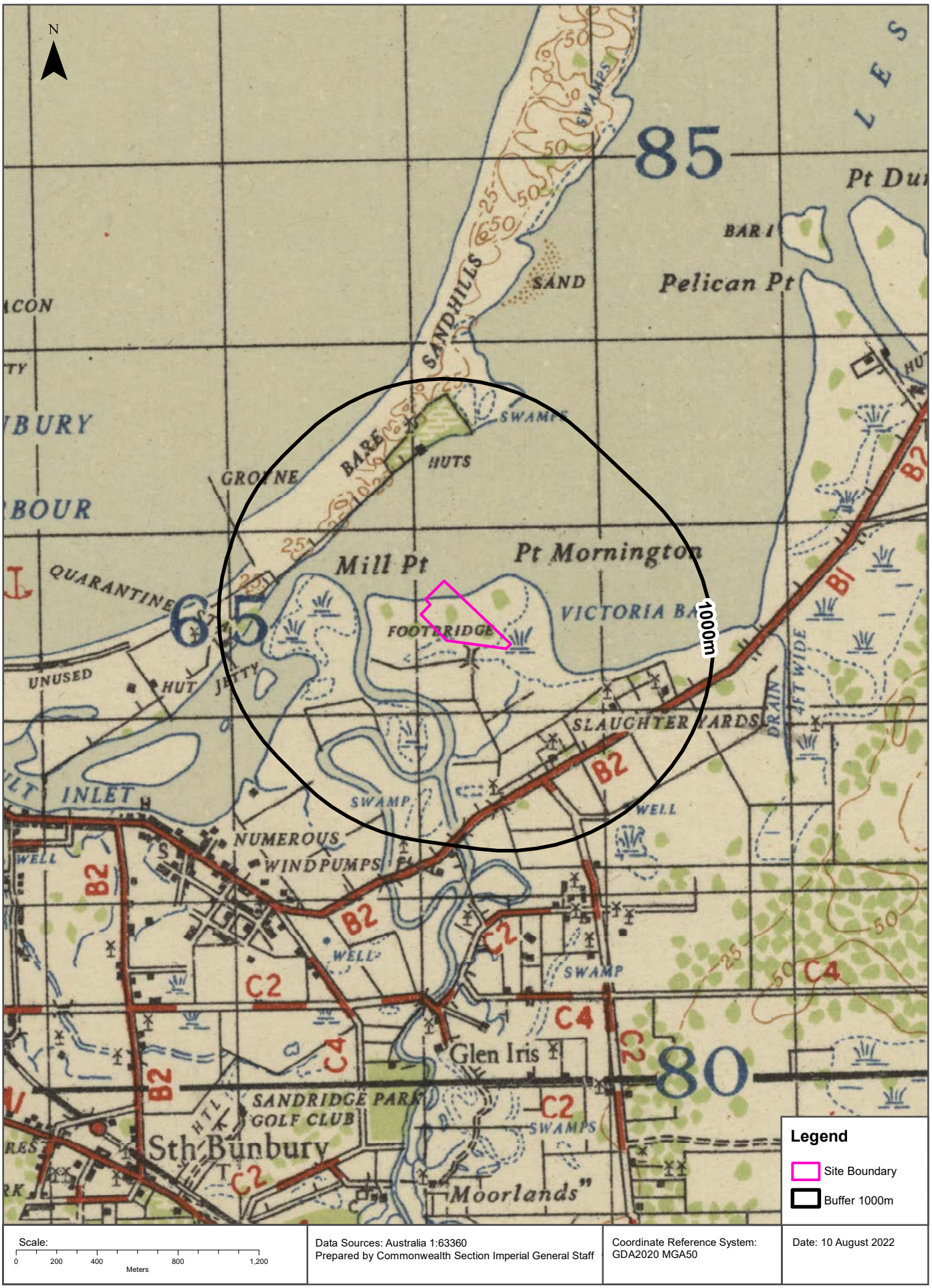
Historical Map 1970

Lot 963 Estuary Drive, Vittoria, WA 6230



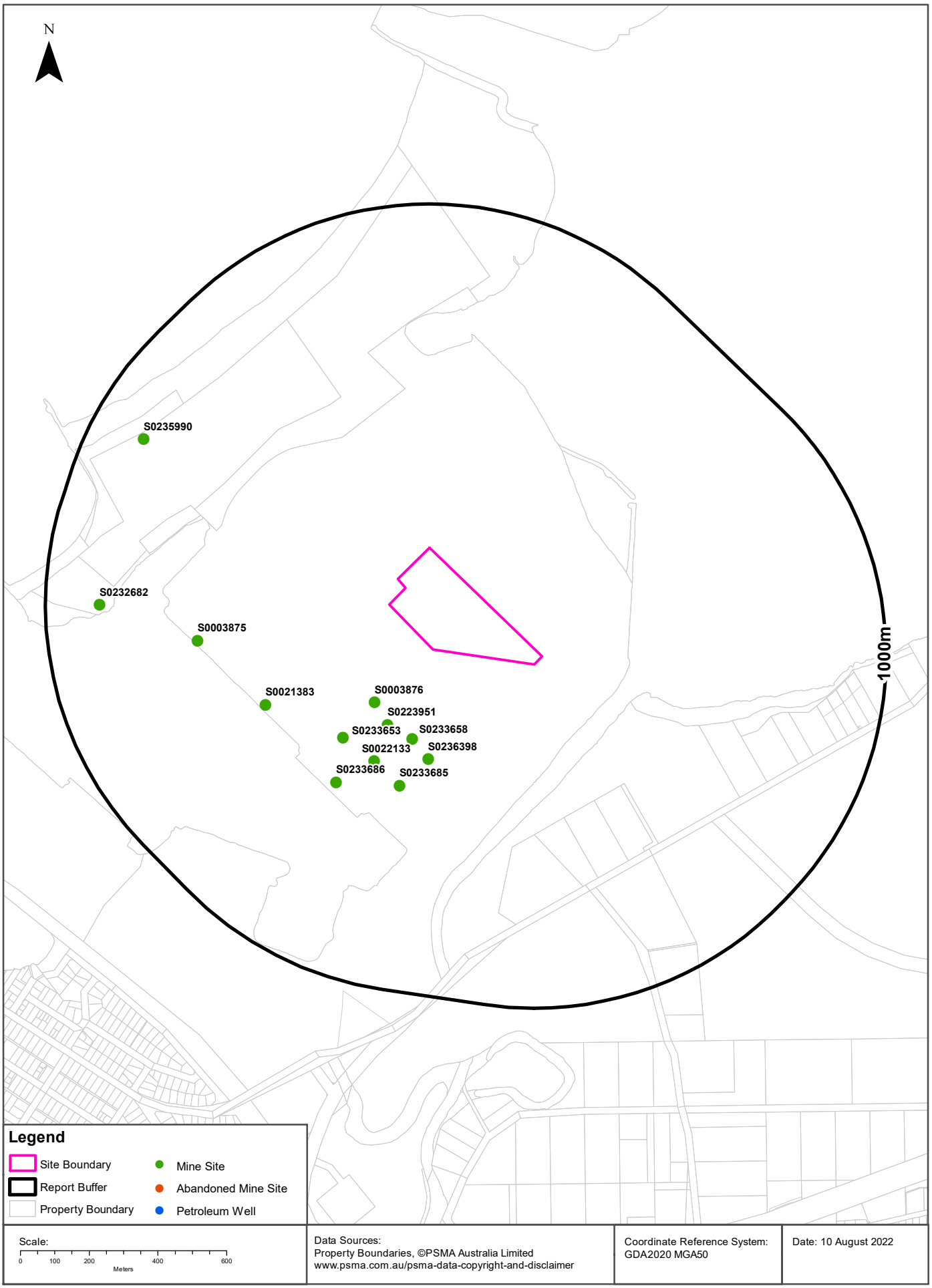
Historical Map c.1942

Lot 963 Estuary Drive, Vittoria, WA 6230



Mine Sites and Petroleum Wells

Lot 963 Estuary Drive, Vittoria, WA 6230



Mining

Lot 963 Estuary Drive, Vittoria, WA 6230

Mines

Mine sites within the dataset buffer:

Site Code	Site Title	Site Type	Site Subtype	Site Stage	Target Commodity	Project Code	Project Title	Dist	Dir'n
S0003876	Bunbury Port Shed 8.2 / Talison	Infrastructure	Handling-loading-storage	Operating	TIN - TANTALUM - LITHIUM	J04090	Greenbushes Lithium	230m	South West
S0223951	Bunbury Port Shed 8.4 / Newmont	Infrastructure	Handling-loading-storage	Operating	COPPER - LEAD - ZINC	J00026	Boddington Gold	257m	South West
S0233658	Bunbury Port Shed 8.6 / Cristal	Infrastructure	Handling-loading-storage	Operating	HEAVY MINERAL SANDS	J01034	Bunbury Area Operations / Tronox	269m	South
S0236398	Bunbury Port Shed 8.8 / Talison	Infrastructure	Handling-loading-storage	Under Development	TIN - TANTALUM - LITHIUM	J04090	Greenbushes Lithium	319m	South
S0233653	Bunbury Port Shed 8.1 / Kemerton	Infrastructure	Handling-loading-storage	Operating	SILICA - SILICA SAND	J01591	Kemerton Silica Sand	367m	South West
S0022133	Bunbury Port Shed 8.3 / Tronox	Infrastructure	Handling-loading-storage	Operating	HEAVY MINERAL SANDS	J00485	Cooljarloo / Tronox	369m	South West
S0233685	Bunbury Port Shed 8.5 / Tronox	Infrastructure	Handling-loading-storage	Operating	HEAVY MINERAL SANDS	J00485	Cooljarloo / Tronox	409m	South
S0021383	Bunbury Port Berth 6 / Worsley	Infrastructure	Port	Operating	BAUXITE - ALUMINA	J00776	Worsley	463m	South West
S0233686	Bunbury Port Berth 8 / Southern Ports Authority	Infrastructure	Port	Operating	UNASSIGNED	J02521	Bunbury Port / Southern Ports Authority	478m	South West
S0003875	Bunbury Port Berth 4 / Alcoa	Infrastructure	Port	Operating	BAUXITE - ALUMINA	J00779	Wagerup-Pinjarra / Alcoa	567m	West
S0232682	Bunbury Port Berth 14A / Lanco	Infrastructure	Port	Proposed	COAL	J01096	Collie / Lanco	842m	West
S0235990	Bunbury Port Stockpile (Bunker) / Alcoa	Infrastructure	Port	Operating	BAUXITE - ALUMINA	J00779	Wagerup-Pinjarra / Alcoa	842m	North West

Mines Data Source: MINEDEX Database, WA Department of Mines and Petroleum

Abandoned Mines

Abandoned mine sites within the dataset buffer:

Site Code	Feature Group	Feature Type	Site Type	Site Subtype	Target Commodity	Visibility	Depth	Dump Material	Dump Other	Re-vegetation	Dist	Dir'n
N/A	No records in buffer											

Abandoned Mines Data Source: Inventory of Abandoned Mine Sites Database, WA Department of Mines and Petroleum

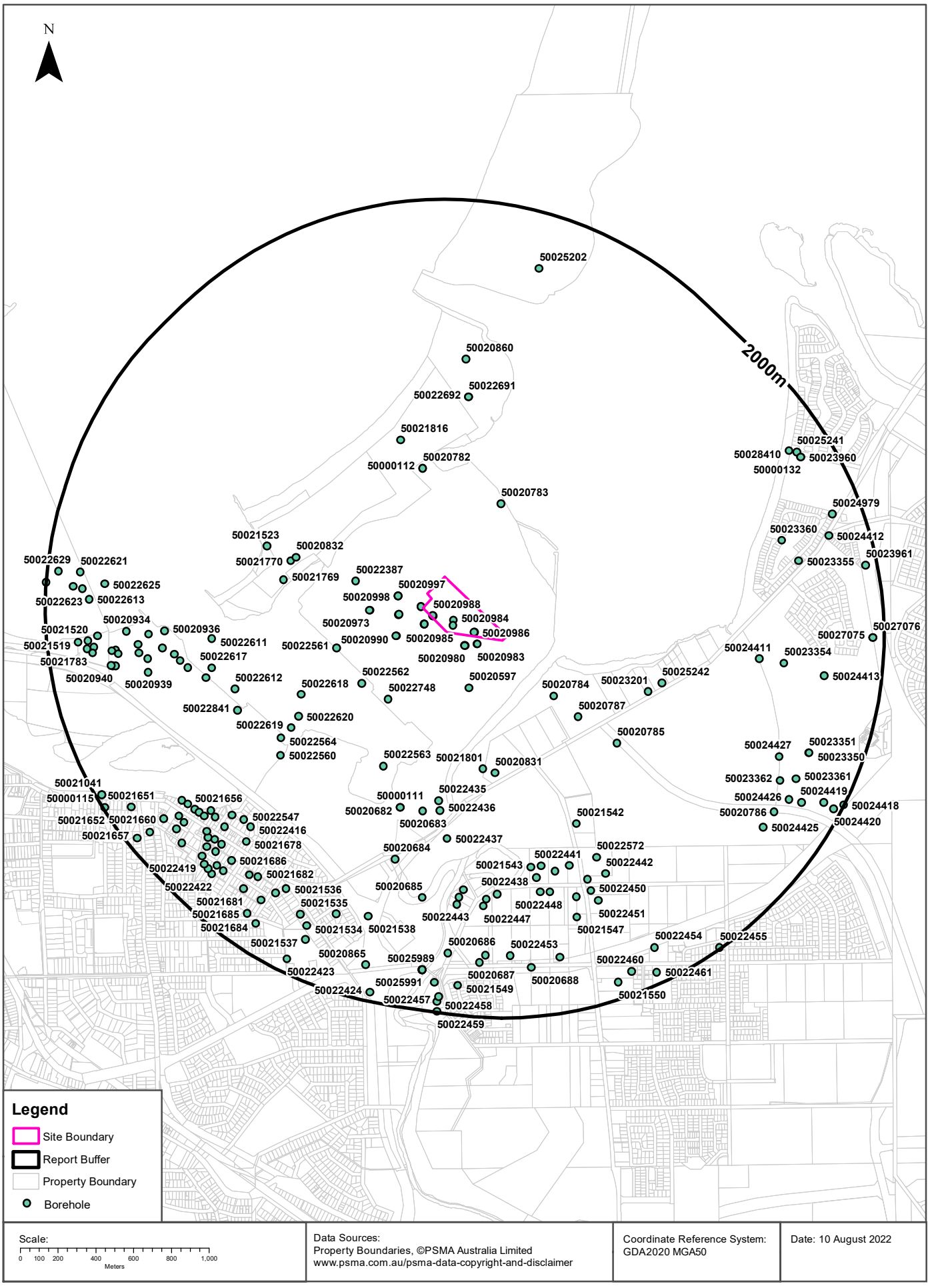
Petroleum Wells

Petroleum wells within the dataset buffer:

Well ID	Well Name	Basin	LeaseNo	Operator	Class	Status	Field	Dist	Dir'n
N/A	No records in buffer								

Groundwater Boreholes

Lot 963 Estuary Drive, Vittoria, WA 6230



Groundwater

Lot 963 Estuary Drive, Vittoria, WA 6230

Groundwater Boreholes

Groundwater Boreholes within the dataset buffer:

NGIS Bore ID	WA Bore ID	Agency Responsible	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Reference Elevation Description	Distance	Direction
50020984	61100409	Department of Water and Environmental Regulation	Unknown	Unknown	10/17/2001	5.10	3.43	NGS	0m	Onsite
50020989	61100414	Department of Water and Environmental Regulation	Unknown	Unknown	10/15/2001	2.10	4.00	NGS	0m	Onsite
50020988	61100413	Department of Water and Environmental Regulation	Unknown	Unknown	10/15/2001	3.10	4.03	NGS	0m	Onsite
50020985	61100410	Department of Water and Environmental Regulation	Unknown	Unknown	10/17/2001	3.10	3.47	NGS	0m	Onsite
50020987	61100412	Department of Water and Environmental Regulation	Unknown	Unknown	8/10/1997	2.10		NGS	0m	Onsite
50020986	61100411	Department of Water and Environmental Regulation	Unknown	Unknown	8/10/1997	4.80		NGS	0m	Onsite
50020971	61100391	Department of Water and Environmental Regulation	Unknown	Unknown	10/25/2001	2.50		NGS	9m	West
50020970	61100390	Department of Water and Environmental Regulation	Unknown	Unknown	10/25/2001	5.60	3.84	NGS	11m	West
50020982	61100407	Department of Water and Environmental Regulation	Unknown	Unknown	10/15/2001	5.10		NGS	38m	South East
50020983	61100408	Department of Water and Environmental Regulation	Unknown	Unknown	10/15/2001	2.50	3.26	NGS	39m	South East
50020994	61100419	Department of Water and Environmental Regulation	Unknown	Unknown	2/10/1997	3.00		NGS	53m	West
50020979	61100404	Department of Water and Environmental Regulation	Unknown	Unknown	9/27/1997	12.00		NGS	54m	South
50020993	61100418	Department of Water and Environmental Regulation	Unknown	Unknown	2/10/1997	7.50	3.21	NGS	54m	West
50020992	61100417	Department of Water and Environmental Regulation	Unknown	Unknown	2/10/1997	12.90		NGS	55m	West
50020981	61100406	Department of Water and Environmental Regulation	Unknown	Unknown	1/1/1993	2.50		NGS	57m	South

NGIS Bore ID	WA Bore ID	Agency Responsible	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Reference Elevation Description	Distance	Direction
50020980	61100405	Department of Water and Environmental Regulation	Unknown	Unknown	1/1/1993	6.00		NGS	58m	South
50020995	61100420	Department of Water and Environmental Regulation	Unknown	Unknown	10/30/2001	12.40		NGS	131m	West
50020996	61100421	Department of Water and Environmental Regulation	Unknown	Unknown	10/30/2001	5.50		NGS	132m	West
50020998	61100423	Department of Water and Environmental Regulation	Unknown	Unknown	6/10/1997	5.20		NGS	144m	West
50020997	61100422	Department of Water and Environmental Regulation	Unknown	Unknown	6/10/1997	11.50	4.41	NGS	145m	West
50020990	61100415	Department of Water and Environmental Regulation	Unknown	Unknown	8/10/1997	17.00	3.90	NGS	204m	West
50020991	61100416	Department of Water and Environmental Regulation	Unknown	Unknown	8/10/1997	3.30		NGS	205m	West
50020597	61100012	Department of Water and Environmental Regulation	Monitoring, Manufacturing and industry	Unknown	4/28/2006	75.00		NGS	276m	South
50020972	61100392	Department of Water and Environmental Regulation	Unknown	Unknown	2/11/2001	12.90		NGS	280m	West
50020973	61100393	Department of Water and Environmental Regulation	Unknown	Unknown	2/11/2001	5.20	4.48	NGS	281m	West
50022387	61111240	Department of Water and Environmental Regulation	Unknown	Unknown	6/30/2005			NGS	382m	West
50020784	61100203	Department of Water and Environmental Regulation	Monitoring	Unknown	10/6/2004			NGS	404m	South East
50022748	61118086	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	470m	South West
50020783	61100202	Department of Water and Environmental Regulation	Monitoring	Unknown	10/6/2004			NGS	487m	North
50022561	61111414	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	503m	West
50022562	61111415	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	510m	South West
50020787	61100206	Department of Water and Environmental Regulation	Unknown	Unknown	11/8/2004			NGS	572m	South East
50000112	6112002	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	586m	North

NGIS Bore ID	WA Bore ID	Agency Responsible	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Reference Elevation Description	Distance	Direction
50020782	61100201	Department of Water and Environmental Regulation	Monitoring	Unknown	10/6/2004			NGS	586m	North
50021801	61110652	Department of Water and Environmental Regulation	Water supply	Unknown	2/10/1978	121.31		NGS	688m	South
50020831	61100250	Department of Water and Environmental Regulation	Water supply	Unknown	3/22/1984	115.20		NGS	703m	South
50020832	61100251	Department of Water and Environmental Regulation	DUST	Unknown		35.76		NGS	720m	West
50021770	61110621	Department of Water and Environmental Regulation	Unknown	Unknown		81.20		NGS	740m	West
50021769	61110620	Department of Water and Environmental Regulation	DUST	Unknown		79.55	5.60	NGS	752m	West
50021816	61110667	Department of Water and Environmental Regulation	Monitoring	Unknown	3/26/1976	59.00		NGS	760m	North
50022563	61111416	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	784m	South West
50022618	61111471	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	791m	South West
50023201	61200137	Department of Water and Environmental Regulation	Unknown	Unknown	7/4/2004	60.00		NGS	808m	South East
50020785	61100204	Department of Water and Environmental Regulation	Monitoring	Unknown	11/18/2004			NGS	816m	South East
50025242	61210655	Department of Water and Environmental Regulation	Manufacturing and industry	Unknown	7/4/1995	73.00		NGS	861m	East
50022620	61111473	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	875m	South West
50021523	61110374	Department of Water and Environmental Regulation	Unknown	Unknown			3.51	NGS	884m	West
50022435	61111288	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	889m	South
50022436	61111289	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	939m	South
50022619	61111472	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	942m	South West
50020683	61100102	Department of Water and Environmental Regulation	Monitoring	Unknown	7/14/2004			NGS	955m	South

NGIS Bore ID	WA Bore ID	Agency Responsible	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Reference Elevation Description	Distance	Direction
50022691	61118029	Department of Water and Environmental Regulation	Monitoring	Functioning	9/4/1976	22.60	5.49	NGS	959m	North
50022692	61118030	Department of Water and Environmental Regulation	Monitoring	Functioning	7/4/1976	114.40	5.50	NGS	959m	North
50000111	6112001	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	960m	South
50020682	61100101	Department of Water and Environmental Regulation	Monitoring	Unknown	7/15/2004			NGS	960m	South
50022564	61111417	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1019m	South West
50021542	61110393	Department of Water and Environmental Regulation	Monitoring	Unknown	1/15/1979			NGS	1047m	South East
50022437	61111290	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1082m	South
50022612	61111465	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1084m	West
50022560	61111413	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1085m	South West
50022841	61140012	Department of Water and Environmental Regulation	Monitoring	Unknown				NGS	1121m	South West
50022611	61111464	Department of Water and Environmental Regulation	Unknown	Unknown			1.26	NGS	1127m	West
50020860	61100279	Department of Water and Environmental Regulation	Irrigated agriculture, Monitoring	Unknown	1/10/1987	100.00		NGS	1157m	North
50022617	61111470	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1161m	West
50021832	61110683	Department of Water and Environmental Regulation	DUST, Monitoring	Unknown	1/21/1986	55.70		NGS	1205m	West
50021543	61110394	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1212m	South
50022439	61111292	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1214m	South
50020684	61100103	Department of Water and Environmental Regulation	Monitoring	Unknown	7/15/2004			NGS	1233m	South
50022441	61111294	Department of Water and Environmental Regulation	Domestic household, Household	Unknown				NGS	1245m	South East

NGIS Bore ID	WA Bore ID	Agency Responsible	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Reference Elevation Description	Distance	Direction
50022572	61111425	Department of Water and Environmental Regulation	Unknown	Unknown	1/15/1984			NGS	1255m	South East
50022440	61111293	Department of Water and Environmental Regulation	Domestic household, Household	Unknown				NGS	1256m	South
50022438	61111291	Department of Water and Environmental Regulation	Domestic household	Unknown				NGS	1271m	South
50022386	61111239	Department of Water and Environmental Regulation	Unknown	Unknown			1.83	NGS	1283m	West
50020935	61100355	Department of Water and Environmental Regulation	Unknown	Unknown		4.90		NGS	1313m	West
50021522	61110373	Department of Water and Environmental Regulation	Unknown	Unknown			1.65	NGS	1337m	West
50022445	61111298	Department of Water and Environmental Regulation	Domestic household, Household	Unknown				NGS	1338m	South
50024411	61201367	Department of Water and Environmental Regulation	Unknown	Unknown	2/28/1994	92.00		NGS	1344m	East
50021544	61110395	Department of Water and Environmental Regulation	Domestic household, Household	Unknown				NGS	1345m	South East
50021545	61110396	Department of Water and Environmental Regulation	Domestic household, Household	Unknown				NGS	1346m	South
50021546	61110397	Department of Water and Environmental Regulation	Domestic household, Household	Unknown				NGS	1348m	South
50022442	61111295	Department of Water and Environmental Regulation	Domestic household, Household	Unknown				NGS	1353m	South East
50022448	61111301	Department of Water and Environmental Regulation	Domestic household, Household	Unknown				NGS	1358m	South
50020936	61100356	Department of Water and Environmental Regulation	Unknown	Unknown		4.90		NGS	1373m	West
50022446	61111299	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1375m	South
50022444	61111297	Department of Water and Environmental Regulation	Domestic household, Household	Unknown				NGS	1378m	South
50020932	61100352	Department of Water and Environmental Regulation	Unknown	Unknown	1/9/1989	45.10		NGS	1395m	West
50022450	61111303	Department of Water and Environmental Regulation	Domestic household, Household	Unknown	6/30/2010			NGS	1408m	South East

NGIS Bore ID	WA Bore ID	Agency Responsible	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Reference Elevation Description	Distance	Direction
50020685	61100104	Department of Water and Environmental Regulation	Monitoring	Unknown	7/15/2004			NGS	1410m	South
50022447	61111300	Department of Water and Environmental Regulation	Domestic household, Household	Unknown				NGS	1412m	South
50022449	61111302	Department of Water and Environmental Regulation	Domestic household, Household	Unknown				NGS	1415m	South
50022443	61111296	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1418m	South
50020930	61100350	Department of Water and Environmental Regulation	Unknown	Unknown	1/1/1970	39.60		NGS	1457m	West
50022547	61111400	Department of Water and Environmental Regulation	Domestic household	Unknown				NGS	1461m	South West
50022416	61111269	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1461m	South West
50022451	61111304	Department of Water and Environmental Regulation	Domestic household, Household	Unknown				NGS	1471m	South East
50023354	61200291	Department of Water and Environmental Regulation	Unknown	Unknown	1/3/1990	5.00		NGS	1477m	East
50021521	61110372	Department of Water and Environmental Regulation	Unknown	Unknown			1.49	NGS	1481m	West
50022415	61111268	Department of Water and Environmental Regulation	Unknown	Unknown	6/30/2014			NGS	1490m	South West
50020939	61100359	Department of Water and Environmental Regulation	Unknown	Unknown	1/7/2001	6.90		NGS	1492m	West
50021547	61110398	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1519m	South
50020929	61100349	Department of Water and Environmental Regulation	Unknown	Unknown	1/2/1970	21.30		NGS	1519m	West
50020931	61100351	Department of Water and Environmental Regulation	Unknown	Unknown	1/7/1974	44.20		NGS	1521m	West
50021678	61110529	Department of Water and Environmental Regulation	Domestic household	Unknown				NGS	1535m	South West
50023360	61200297	Department of Water and Environmental Regulation	Unknown	Unknown	9/22/1994	45.60		NGS	1545m	East
50022417	61111270	Department of Water and Environmental Regulation	Unknown	Unknown	6/30/2007			NGS	1554m	South West

NGIS Bore ID	WA Bore ID	Agency Responsible	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Reference Elevation Description	Distance	Direction
50021680	61110531	Department of Water and Environmental Regulation	Domestic household	Unknown				NGS	1559m	South West
50021538	61110389	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1562m	South
50021679	61110530	Department of Water and Environmental Regulation	Domestic household	Unknown				NGS	1562m	South West
50020934	61100354	Department of Water and Environmental Regulation	Unknown	Unknown		4.50		NGS	1574m	West
50024427	61201383	Department of Water and Environmental Regulation	Unknown	Unknown	5/26/1994	17.00		NGS	1582m	South East
50023355	61200292	Department of Water and Environmental Regulation	Unknown	Unknown	1/3/1990	5.00		NGS	1598m	East
50022411	61111264	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1599m	South West
50021536	61110387	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1603m	South West
50021820	61110671	Department of Water and Environmental Regulation	Unknown	Unknown		40.00		NGS	1603m	South
50021530	61110381	Department of Water and Environmental Regulation	Domestic household	Unknown				NGS	1606m	South West
50021656	61110507	Department of Water and Environmental Regulation	Domestic household, Household	Unknown				NGS	1612m	South West
50021655	61110506	Department of Water and Environmental Regulation	Domestic household, Household	Unknown				NGS	1620m	South West
50020938	61100358	Department of Water and Environmental Regulation	Unknown	Unknown	1/7/2001	6.60		NGS	1630m	West
50021654	61110505	Department of Water and Environmental Regulation	Domestic household	Unknown				NGS	1634m	South West
50021682	61110533	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1635m	South West
50022414	61111267	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1637m	South West
50020937	61100357	Department of Water and Environmental Regulation	Unknown	Unknown		8.30		NGS	1641m	West
50023362	61200299	Department of Water and Environmental Regulation	Monitoring, Irrigated agriculture	Unknown	2/5/1997	340.30		NGS	1641m	South East

NGIS Bore ID	WA Bore ID	Agency Responsible	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Reference Elevation Description	Distance	Direction
50022413	61111266	Department of Water and Environmental Regulation	Domestic household	Unknown				NGS	1645m	South West
50021693	61110544	Department of Water and Environmental Regulation	Domestic household	Unknown				NGS	1647m	South West
50021683	61110534	Department of Water and Environmental Regulation	Domestic household, Household	Unknown				NGS	1652m	South West
50020933	61100353	Department of Water and Environmental Regulation	Unknown	Unknown		4.65		NGS	1654m	West
50022548	61111401	Department of Water and Environmental Regulation	Domestic household	Unknown				NGS	1656m	South West
50022885	61140056	Department of Water and Environmental Regulation	Monitoring	Unknown				NGS	1661m	West
50021686	61110537	Department of Water and Environmental Regulation	Domestic household	Unknown				NGS	1662m	South West
50022412	61111265	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1664m	South West
50020940	61100360	Department of Water and Environmental Regulation	Unknown	Unknown	1/3/2005	6.50		NGS	1668m	West
50022452	61111305	Department of Water and Environmental Regulation	Domestic household, Household	Unknown				NGS	1670m	South
50022453	61111306	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1671m	South
50020941	61100361	Department of Water and Environmental Regulation	Unknown	Unknown	1/10/2011	6.50		NGS	1678m	West
50020686	61100105	Department of Water and Environmental Regulation	Monitoring	Unknown	7/27/2004			NGS	1682m	South
50021535	61110386	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1683m	South West
50021687	61110538	Department of Water and Environmental Regulation	Domestic household	Unknown				NGS	1687m	South West
50022625	61111478	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1689m	West
50024425	61201381	Department of Water and Environmental Regulation	Unknown	Unknown	6/5/1994	19.60		NGS	1697m	South East
50024413	61201369	Department of Water and Environmental Regulation	Unknown	Unknown	5/23/1994	100.00		NGS	1697m	East

NGIS Bore ID	WA Bore ID	Agency Responsible	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Reference Elevation Description	Distance	Direction
50022410	61111263	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1698m	South West
50020786	61100205	Department of Water and Environmental Regulation	Monitoring	Unknown	11/18/2004			NGS	1699m	South East
50021531	61110382	Department of Water and Environmental Regulation	Domestic household	Unknown				NGS	1700m	South West
50021533	61110384	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1704m	South West
50025202	61210614	Department of Water and Environmental Regulation	Unknown	Unknown	2/22/1989	90.20		NGS	1707m	North
50021548	61110399	Department of Water and Environmental Regulation	Domestic household, Household	Unknown				NGS	1708m	South
50020687	61100106	Department of Water and Environmental Regulation	Monitoring	Unknown	7/13/2004			NGS	1710m	South
50023361	61200298	Department of Water and Environmental Regulation	Irrigated agriculture	Unknown	3/21/1990	170.70	2.20	NGS	1711m	South East
50023351	61200288	Department of Water and Environmental Regulation	Unknown	Unknown	1/3/1990	6.00		NGS	1719m	East
50023350	61200287	Department of Water and Environmental Regulation	Unknown	Unknown	2/3/1990	19.50		NGS	1721m	East
50021534	61110385	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1723m	South West
50021688	61110539	Department of Water and Environmental Regulation	Domestic household	Unknown				NGS	1728m	South West
50021605	61110456	Department of Water and Environmental Regulation	Mining	Unknown		39.93		NGS	1729m	West
50024426	61201382	Department of Water and Environmental Regulation	Unknown	Unknown	6/5/1994	6.50		NGS	1731m	South East
50022421	61111274	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1731m	South West
50021681	61110532	Department of Water and Environmental Regulation	Domestic household	Unknown				NGS	1733m	South West
50022420	61111273	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1735m	South West
50020688	61100107	Department of Water and Environmental Regulation	Monitoring	Unknown	7/14/2004			NGS	1741m	South

NGIS Bore ID	WA Bore ID	Agency Responsible	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Reference Elevation Description	Distance	Direction
50021664	61110515	Department of Water and Environmental Regulation	Domestic household	Unknown				NGS	1753m	South West
50021778	61110629	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1754m	West
50022418	61111271	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1755m	South West
50021842	61110693	Department of Water and Environmental Regulation	Monitoring	Unknown	9/15/1989			NGS	1763m	West
50022613	61111466	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1767m	West
50021660	61110511	Department of Water and Environmental Regulation	Domestic household	Unknown				NGS	1769m	South West
50021540	61110391	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1778m	South West
50022419	61111272	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1778m	South West
50021520	61110371	Department of Water and Environmental Regulation	Mining	Unknown				NGS	1782m	West
50021532	61110383	Department of Water and Environmental Regulation	Domestic household	Unknown				NGS	1784m	South West
50022422	61111275	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1787m	South West
50025987	61211402	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1789m	South
50024412	61201368	Department of Water and Environmental Regulation	Unknown	Unknown	10/3/1994	151.00		NGS	1789m	East
50025990	61211405	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1789m	South
50025988	61211403	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1789m	South
50025992	61211407	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1789m	South
50025989	61211404	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1789m	South
50025991	61211406	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1789m	South

NGIS Bore ID	WA Bore ID	Agency Responsible	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Reference Elevation Description	Distance	Direction
50028410	61240048	Department of Water and Environmental Regulation	Monitoring	Unknown				NGS	1790m	North East
50021537	61110388	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1790m	South West
50021783	61110634	Department of Water and Environmental Regulation	Monitoring	Unknown	6/15/1974			NGS	1791m	West
50024422	61201378	Department of Water and Environmental Regulation	Unknown	Unknown	5/19/1994	16.40		NGS	1795m	South East
50022623	61111476	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1805m	West
50020865	61100284	Department of Water and Environmental Regulation	Irrigated agriculture, Monitoring	Unknown	1/3/1978	48.50		NGS	1814m	South
50022454	61111307	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1816m	South East
50025241	61210654	Department of Water and Environmental Regulation	Unknown	Unknown	1/29/1998	165.50		NGS	1822m	North East
50022621	61111474	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1823m	West
50000132	6122009	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1825m	North East
50023960	61200901	Department of Water and Environmental Regulation	Monitoring	Unknown	9/6/2004			NGS	1825m	North East
50021685	61110536	Department of Water and Environmental Regulation	Domestic household	Unknown				NGS	1826m	South West
50021519	61110370	Department of Water and Environmental Regulation	Mining	Unknown				NGS	1832m	West
50024979	61210391	Department of Water and Environmental Regulation	Water supply for livestock	Unknown				NGS	1843m	East
50021549	61110400	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1844m	South
50022456	61111309	Department of Water and Environmental Regulation	Domestic household, Household	Unknown	6/30/2005			NGS	1846m	South
50021684	61110535	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1846m	South West
50022622	61111475	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1855m	West

NGIS Bore ID	WA Bore ID	Agency Responsible	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Reference Elevation Description	Distance	Direction
50021651	61110502	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1870m	South West
50021658	61110509	Department of Water and Environmental Regulation	Domestic household	Unknown				NGS	1873m	South West
50022460	61111313	Department of Water and Environmental Regulation	Domestic household, Household	Unknown				NGS	1884m	South East
50024419	61201375	Department of Water and Environmental Regulation	Unknown	Unknown	3/17/1993	23.15		NGS	1899m	South East
50021550	61110401	Department of Water and Environmental Regulation	Domestic household, Household	Unknown				NGS	1913m	South East
50022457	61111310	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1915m	South
50022423	61111276	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1927m	South West
50022629	61111482	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1937m	West
50022461	61111314	Department of Water and Environmental Regulation	Domestic household, Household	Unknown				NGS	1939m	South East
50023961	61200902	Department of Water and Environmental Regulation	Monitoring	Unknown	9/6/2004			NGS	1939m	East
50027075	61212498	Department of Water and Environmental Regulation	Unknown	Unknown	4/5/1994	26.00		NGS	1941m	East
50027076	61212499	Department of Water and Environmental Regulation	Unknown	Unknown	4/5/1994	6.00		NGS	1941m	East
50021657	61110508	Department of Water and Environmental Regulation	Domestic household	Unknown				NGS	1944m	South West
50022458	61111311	Department of Water and Environmental Regulation	Domestic household, Household	Unknown				NGS	1945m	South
50022424	61111277	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1952m	South
50024420	61201376	Department of Water and Environmental Regulation	Unknown	Unknown	3/18/1993	20.40		NGS	1960m	South East
50021041	61100501	Department of Water and Environmental Regulation	Monitoring	Unknown	7/29/2004			NGS	1968m	South West
50000115	6112005	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1968m	South West

NGIS Bore ID	WA Bore ID	Agency Responsible	Bore Type	Status	Drill Date	Bore Depth (m)	Reference Elevation	Reference Elevation Description	Distance	Direction
50021652	61110503	Department of Water and Environmental Regulation	Domestic household	Unknown				NGS	1989m	South West
50022455	61111308	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1994m	South East
50022459	61111312	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1997m	South
50022626	61111479	Department of Water and Environmental Regulation	Unknown	Unknown				NGS	1999m	West
50024418	61201374	Department of Water and Environmental Regulation	Unknown	Unknown	3/17/1993	20.10		NGS	1999m	South East

Groundwater

Lot 963 Estuary Drive, Vittoria, WA 6230

Driller's Logs

Drill log data relevant to the boreholes within the dataset buffer:

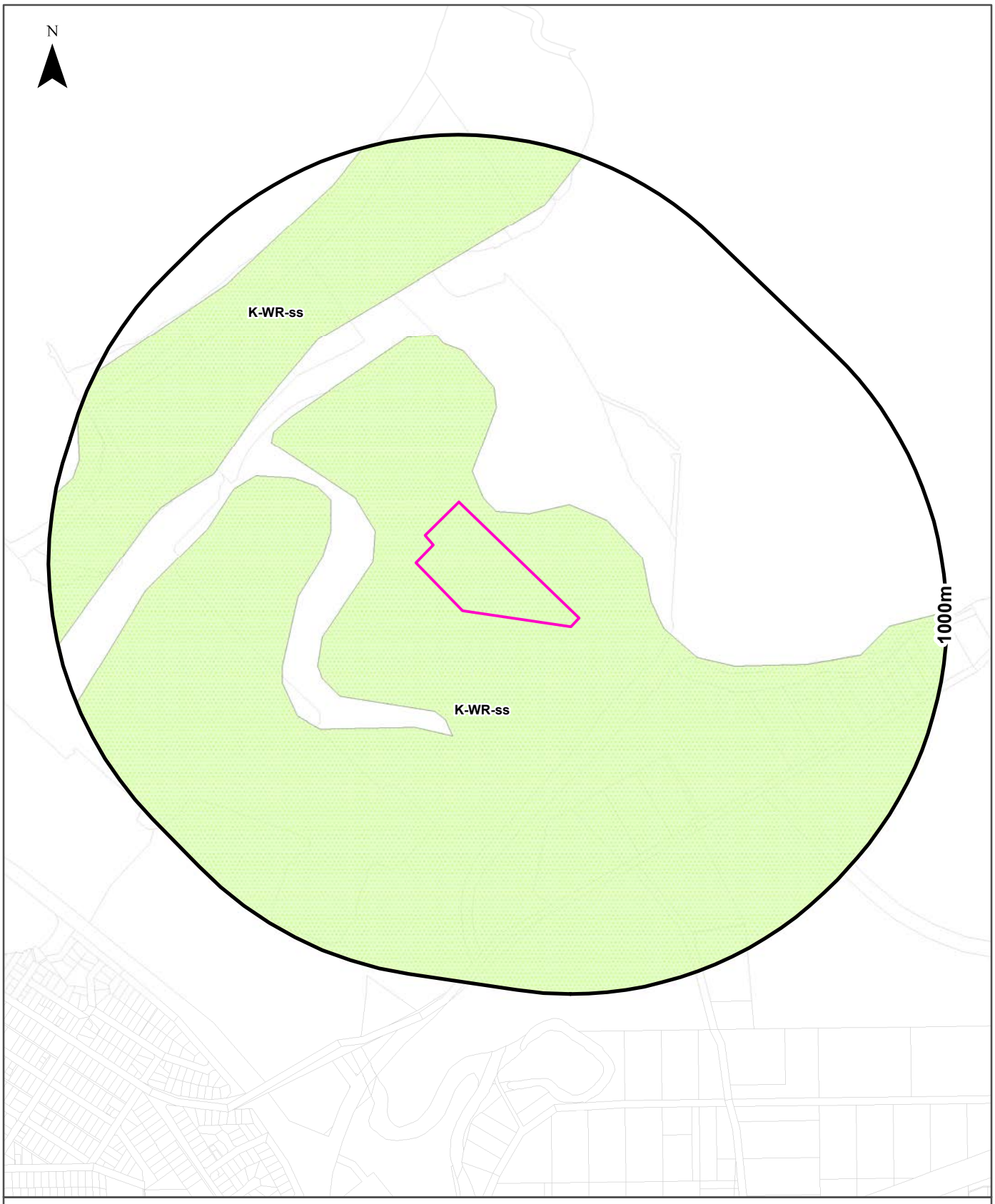
Bore ID	Driller's Log	Distance	Direction
50022387	0.00m-13.72m Quaternary 13.72m-16.46m Yarragadee Formation 16.46m-21.13m Bunbury Basalt	382m	West
50022561	0.00m-15.54m Quaternary/ Tertiary 15.54m-16.46m Bunbury Basalt	503m	West
50022562	0.00m-15.85m Quaternary/ Tertiary 15.85m-18.59m Bunbury Basalt	510m	South West
50021801	0.00m-17.98m Quaternary/ Tertiary 17.98m-121.31m Yarragadee Formation	688m	South
50021770	0.00m-16.76m Quaternary/ Tertiary 16.76m-65.84m Bunbury Basalt 65.84m-81.38m Yarragadee Formation	740m	West
50021769	0.00m-17.37m Quaternary/ Tertiary 17.37m-62.48m Bunbury Basalt 62.48m-79.68m Yarragadee Formation	752m	West
50022563	0.00m-21.64m Quaternary	784m	South West
50022618	0.00m-15.24m Quaternary/ Tertiary 15.24m-17.37m Bunbury Basalt	791m	South West
50025242	0.00m-19.00m Quaternary 19.00m-72.00m Leederville Formation 72.00m-73.00m Not Logged	861m	East
50022620	0.00m-11.89m Quaternary 11.89m-13.41m Bunbury Basalt	875m	South West
50021523	0.00m-14.02m Quaternary 14.02m-61.26m Bunbury Basalt	884m	West
50022619	0.00m-12.19m Quaternary/ Tertiary 12.19m-12.65m Bunbury Basalt 12.65m-14.17m Bunbury Basalt	942m	South West
50022691	0.00m-20.00m Quaternary 20.00m-23.00m Leederville Formation	959m	North
50022692	0.00m-20.00m Quaternary 20.00m-41.00m Leederville Formation 41.00m-89.00m Bunbury Basalt 89.00m-113.00m Yarragadee Formation	959m	North
50022564	0.00m-13.11m Quaternary 13.11m-14.33m Bunbury Basalt	1019m	South West
50021542	0.00m-32.91m Quaternary 32.91m-107.28m Leederville Formation	1047m	South East
50022612	0.00m-14.94m Quaternary 14.94m-16.31m Bunbury Basalt	1084m	West
50022560	0.00m-15.85m Quaternary/ Tertiary 15.85m-21.34m Bunbury Basalt	1085m	South West
50022611	0.00m-19.81m Quaternary 19.81m-61.57m Bunbury Basalt	1127m	West
50022617	0.00m-11.28m Quaternary/ Tertiary 11.28m-18.29m Leederville Formation 18.29m-21.34m Bunbury Basalt	1161m	West
50021832	0.00m-10.60m Quaternary/ Tertiary 10.60m-21.70m Bunbury Basalt 21.70m-55.70m Yarragadee Formation	1205m	West

Bore ID	Driller's Log	Distance	Direction
50022572	0.00m-18.00m Quaternary	1255m	South East
50022386	0.00m-17.98m Quaternary/ Tertiary 17.98m-21.87m Bunbury Basalt 21.87m-27.43m Bunbury Basalt	1283m	West
50021522	0.00m-19.81m Quaternary 19.81m-37.64m Bunbury Basalt	1337m	West
50022443	0.00m-12.19m Quaternary	1418m	South
50021521	0.00m-2.74m Quaternary 2.74m-12.50m Leederville Formation 12.50m-17.68m Bunbury Basalt 17.68m-26.06m Yarragadee Formation	1481m	West
50022417	0.00m-62.79m Quaternary	1554m	South West
50021538	0.00m-15.23m Quaternary 15.23m-15.24m Bunbury Basalt	1562m	South
50021820	0.00m-40.00m Quaternary/ Tertiary	1603m	South
50021530	0.00m-8.84m Quaternary 8.84m-25.83m Leederville Formation	1606m	South West
50022453	0.00m-3.96m Quaternary	1671m	South
50022625	0.00m-10.67m Quaternary 10.67m-15.24m Bunbury Basalt	1689m	West
50021533	0.00m-21.34m Quaternary	1704m	South West
50025202	0.00m-37.20m Quaternary/ Tertiary 37.20m-48.87m Leederville Formation 48.87m-60.80m Bunbury Basalt 60.80m-95.00m Yarragadee Formation	1707m	North
50021548	0.00m-4.57m Quaternary	1708m	South
50021605	0.00m-10.57m Quaternary/ Tertiary 10.57m-21.95m Bunbury Basalt 21.95m-39.93m Yarragadee Formation	1729m	West
50021778	0.00m-15.24m Quaternary 15.24m-26.82m Bunbury Basalt 26.82m-38.71m Yarragadee Formation	1754m	West
50021842	0.00m-14.00m Quaternary/ Tertiary 14.00m-25.50m Bunbury Basalt 25.50m-45.46m Yarragadee Formation	1763m	West
50022613	0.00m-12.19m Quaternary 12.19m-12.88m Bunbury Basalt	1767m	West
50021540	0.00m-12.80m Quaternary	1778m	South West
50021520	0.00m-8.84m Quaternary 8.84m-15.85m Bunbury Basalt 15.85m-18.29m Yarragadee Formation	1782m	West
50025989	0.00m-12.19m Quaternary	1789m	South
50025988	0.00m-16.15m Quaternary	1789m	South
50025991	0.00m-14.33m Quaternary	1789m	South
50025987	0.00m-8.84m Quaternary 8.84m-10.52m Leederville Formation	1789m	South
50025990	0.00m-17.37m Quaternary 17.37m-21.34m Leederville Formation	1789m	South
50025992	0.00m-14.02m Quaternary	1789m	South
50021783	0.00m-4.88m Quaternary 4.88m-9.60m Leederville Formation 9.60m-19.81m Bunbury Basalt 19.81m-44.20m Yarragadee Formation	1791m	West
50022623	0.00m-13.72m Quaternary 13.72m-16.15m Bunbury Basalt	1805m	West

Bore ID	Driller's Log	Distance	Direction
50025241	0.00m-30.00m Cainozoic 30.00m-165.80m Cretaceous Sediments	1822m	North East
50022621	0.00m-12.57m Quaternary/ Tertiary 12.57m-12.98m Bunbury Basalt	1823m	West
50021519	0.00m-8.84m Quaternary 8.84m-15.85m Bunbury Basalt 15.85m-18.29m Yarragadee Formation	1832m	West
50022456	0.00m-37.80m Leederville Formation 37.80m-38.51m Bunbury Basalt	1846m	South
50022622	0.00m-12.19m Quaternary/ Tertiary 12.19m-13.11m Bunbury Basalt	1855m	West
50022629	0.00m-15.39m Quaternary/ Tertiary	1937m	West
50022424	0.00m-15.24m Quaternary 15.24m-18.29m Bunbury Basalt 18.29m-39.62m Yarragadee Formation	1952m	South
50022626	0.00m-11.28m Quaternary/ Tertiary 11.28m-14.33m Bunbury Basalt	1999m	West

Pre-Cenozoic Geology and Structures 1:500,000

Lot 963 Estuary Drive, Vittoria, WA 6230



Legend

- Site Boundary
- Report Buffer
- Property Boundary

Linear Geological Structures

- Major fault, exposed
- Major strike-slip fault, exposed
- Major fault, concealed
- Fold axial trace, exposed
- Fault, exposed
- Strike-slip fault, exposed
- Fault, concealed
- Fold axial trace, concealed

Scale: 0 50 100 200 300 400 500 Meters

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Coordinate Reference System:
GDA2020 MGA50

Date: 10 August 2022

Geology

Lot 963 Estuary Drive, Vittoria, WA 6230

Pre-Cenozoic (Bedrock) Geology 1:500,000

Pre-Cenozoic (Bedrock) Geology Units within the dataset buffer:

Map Unit Code	Name	Description	Group	Subgroup	Formation	Age From	Age To	Max Age (MA)	Min Age (MA)	Distance
K-WR-ss	Warnbro Group	Interbedded sandstone, siltstone, and shale; minor conglomerate	Warnbro Group			Valanginian	Aptian	139.8	113	0m

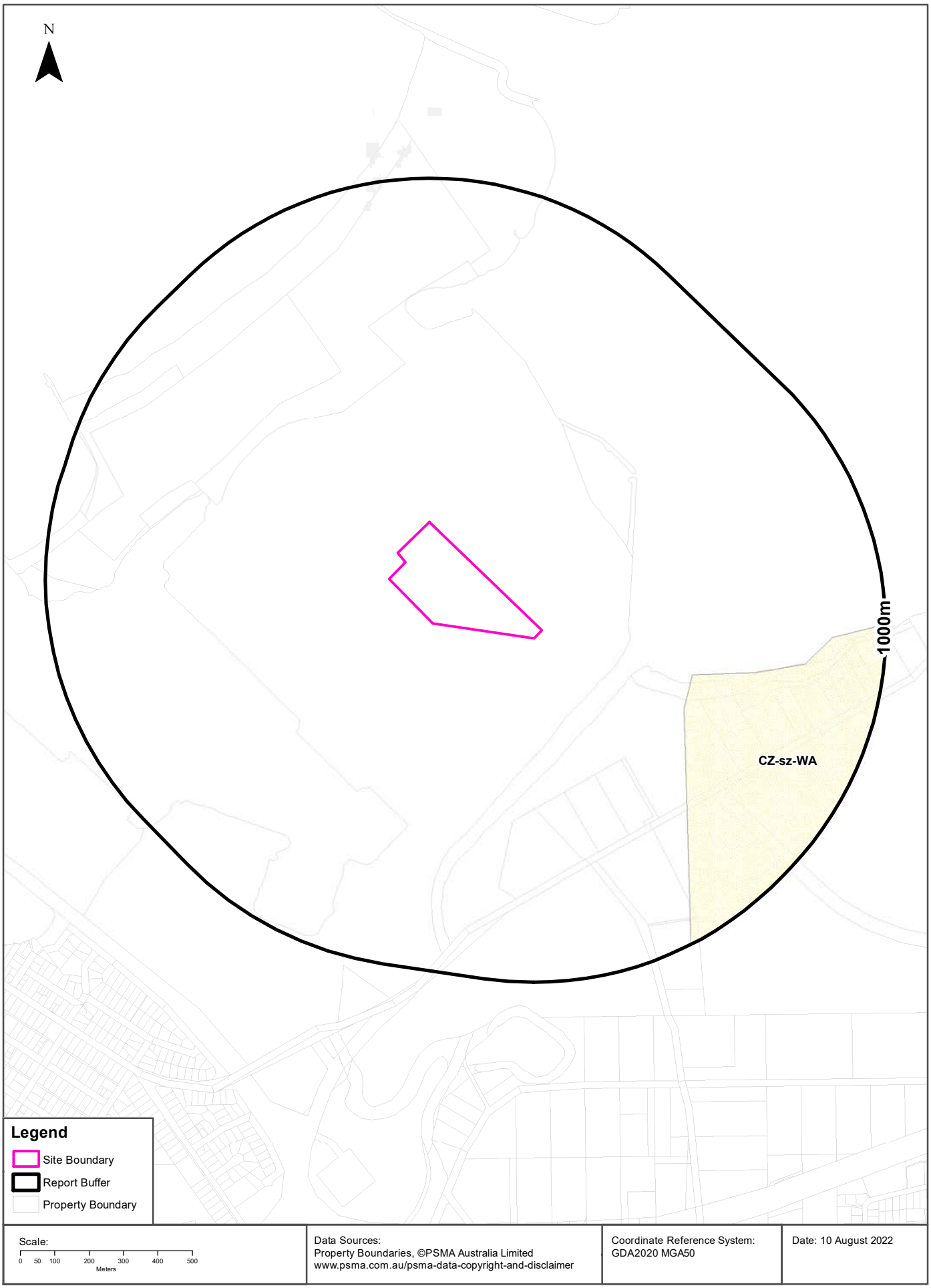
Linear Structures 1:500,000

Linear geological structures within the dataset buffer:

Map Code	Feature	Type	Name	Distance
N/A	No features in buffer			

Cenozoic Geology 1:500,000

Lot 963 Estuary Drive, Vittoria, WA 6230



Geology

Lot 963 Estuary Drive, Vittoria, WA 6230

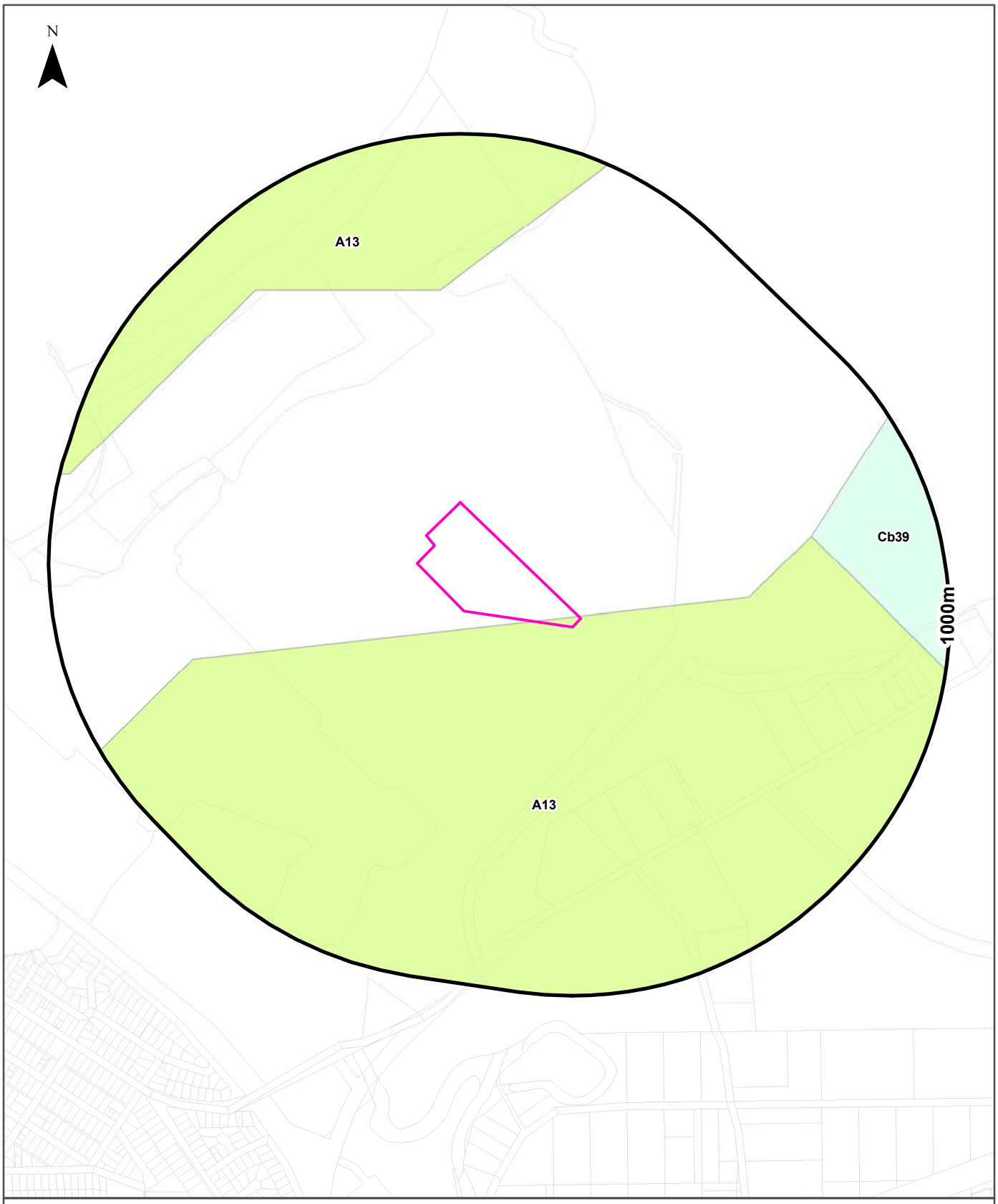
Cenozoic Geology 1:500,000

Cenozoic Geology Units within the dataset buffer:

Map Unit Code	Name	Description	Group	Formation	Age From	Age To	Max Age (MA)	Min Age (MA)	Distance
CZ-sz-WA	Cenozoic inland eolian and alluvial deposits	Sandstone, siltstone, mudstone; generally quartzose			Cenozoic	Holocene	66	0	455m

Atlas of Australian Soils

Lot 963 Estuary Drive, Vittoria, WA 6230



Legend

Site Boundary
Report Buffer
Property Boundary

Australian Soil Classification Orders

Anthroposol	Dermosol	Kandosol	Podosol	Tenosol	No Data
Calcarosol	Ferrosol	Kurosol	Rudosol	Vertosol	
Chromosol	Hydrosol	Organosol	Sodosol	Lake	

Scale: 0 100 200 400 600 Meters

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Coordinate Reference System:
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Date: 10 August 2022

Soils

Lot 963 Estuary Drive, Vittoria, WA 6230

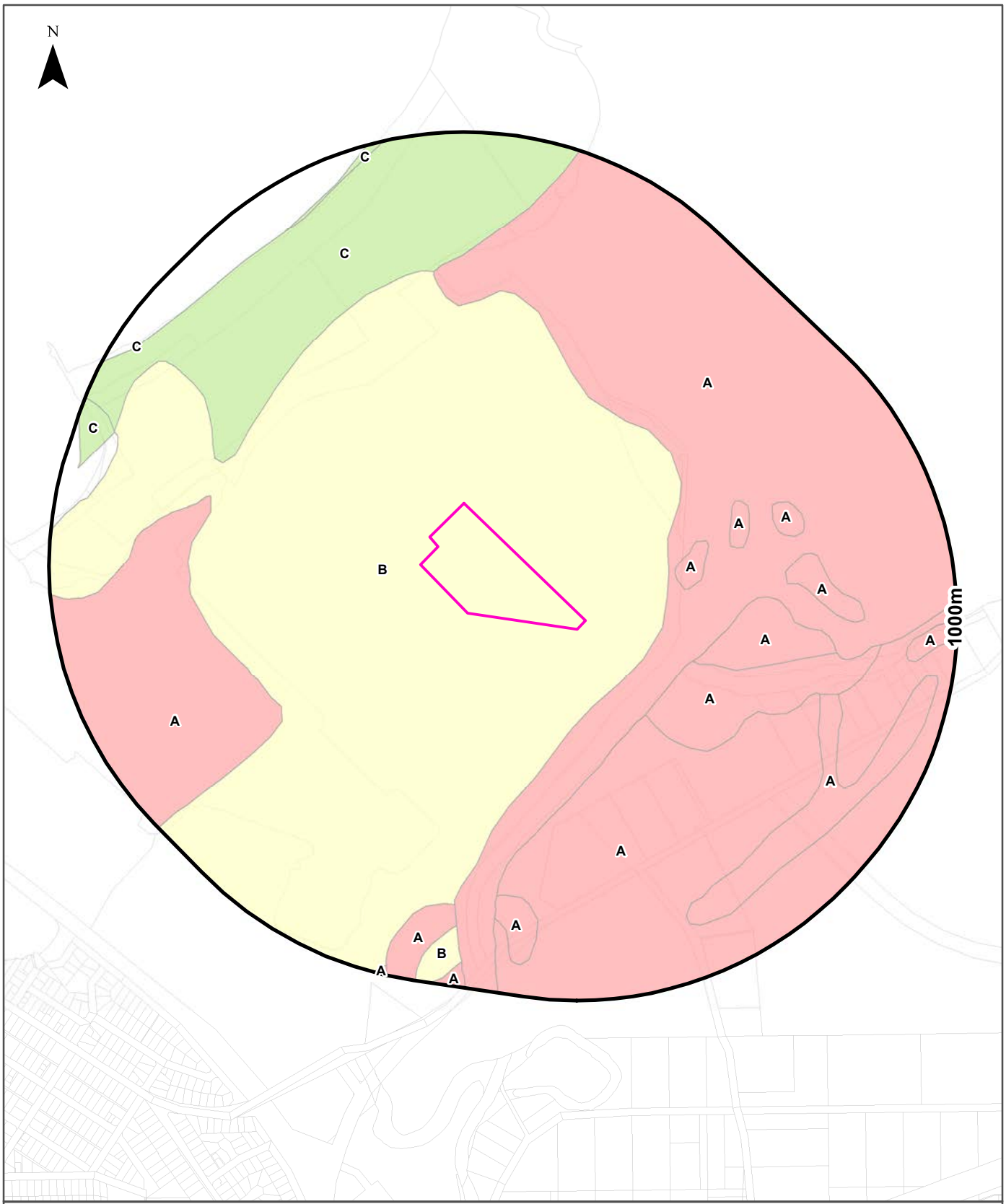
Atlas of Australian Soils

Soil mapping units and Australian Soil Classification orders within the dataset buffer:

Map Unit Code	Soil Order	Map Unit Description	Distance
A13	Rudosol	Coastal dune formations backed by the low-lying deposits of inlets and estuaries: chief soils are calcareous sands (Uc1.11) on the dunes. Associated are various (Uc), (Um), (Uf), (Ug), and acid peat (O) soils in the swale behind the coastal dunes, similar to unit Kf1O.	0m
Cb39	Podosol	Subdued dune-swale terrain: chief soils are leached sands (Uc2.33) with (Uc2.22) and (Uc2.21) on the low dunes. Associated are small areas of other sand soils (Uc).	663m

Atlas of Australian Acid Sulfate Soils

Lot 963 Estuary Drive, Vittoria, WA 6230



Legend

Site Boundary
Report Buffer
Property Boundary

Probability of occurrence of Acid Sulfate Soils

A. High (>70%)
B. Low (6-70%)
C. Extremely Low (1-5%)
D. No Chance (0%)
No Data

Scale:	Data Sources:	Coordinate Reference System:	Date:
0 50 100 200 300 400 500 600 700 Meters	Property Boundaries, ©PSMA Australia Limited www.psma.com.au/psma-data-copyright-and-disclaimer	GDA2020 MGA50	10August 2022

Acid Sulfate Soils

Lot 963 Estuary Drive, Vittoria, WA 6230

Atlas of Australian Acid Sulfate Soils

Atlas of Australian Acid Sulfate Soil categories within the dataset buffer:

Class	Description	Distance
B	Low Probability of occurrence. 6-70% chance of occurrence.	0m
A	High Probability of occurrence. >70% chance of occurrence.	182m
C	Extremely low probability of occurrence. 1-5% chance of occurrence with occurrences in small localised areas.	566m

Heritage

Lot 963 Estuary Drive, Vittoria, WA 6230

Commonwealth Heritage List

What are the Commonwealth Heritage List Items located within the dataset buffer?

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch

National Heritage List

What are the National Heritage List Items located within the dataset buffer?
Note. Please click on Place Id to activate a hyperlink to online website.

Place Id	Name	Address	Place File No	Class	Status	Register Date	Distance	Direction
N/A	No records in buffer							

Heritage Data Source: Australian Government Department of the Environment and Energy - Heritage Branch

State Heritage Register

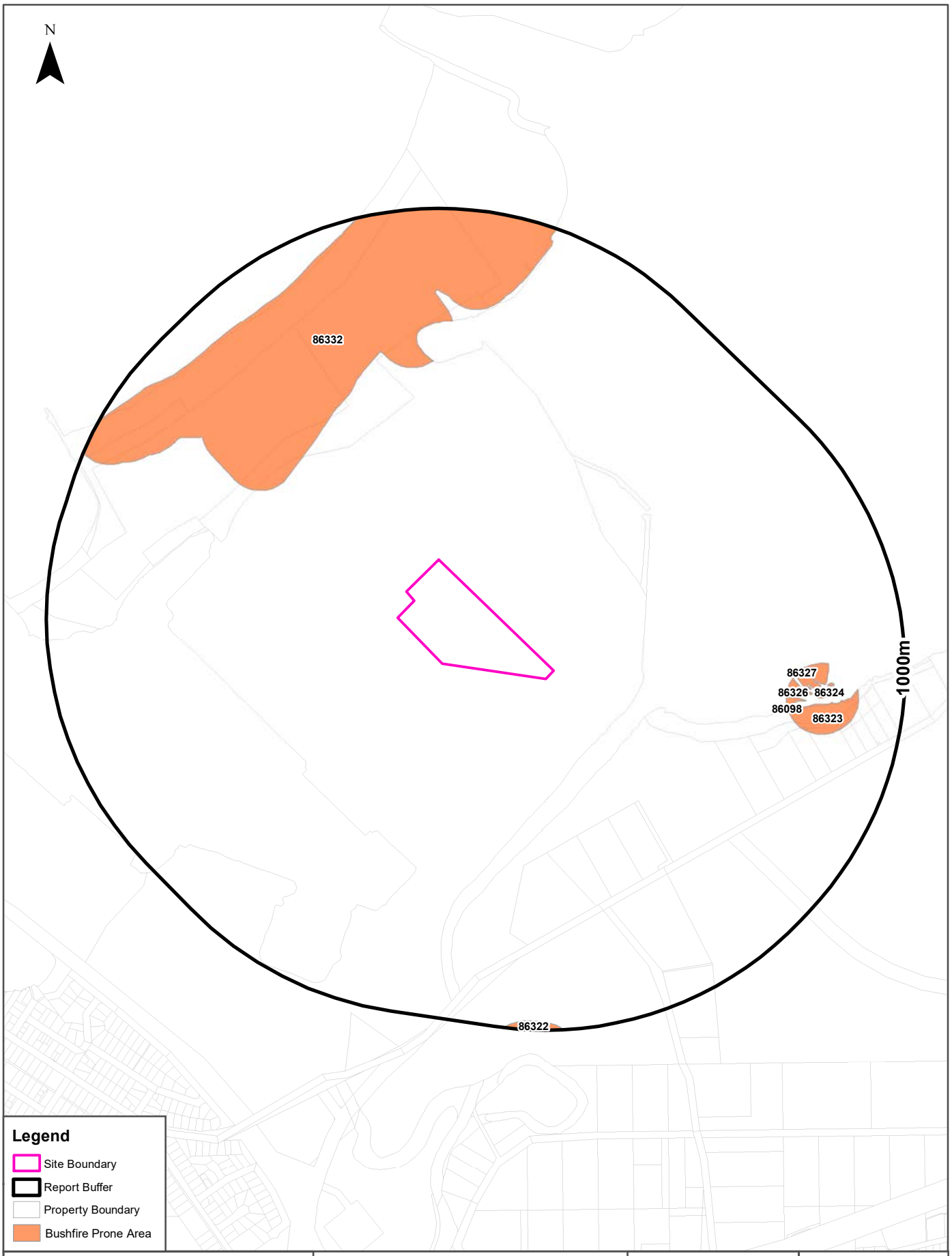
Sites listed on the State Heritage Register within the dataset buffer:

Place No.	Place Name	Location	LGA	Distance	Direction
N/A	No records in buffer				

Heritage Sites Data Source: WA State Heritage Office

Natural Hazards - Bushfire Prone Areas

Lot 963 Estuary Drive, Vittoria, WA 6230



Natural Hazards

Lot 963 Estuary Drive, Vittoria, WA 6230

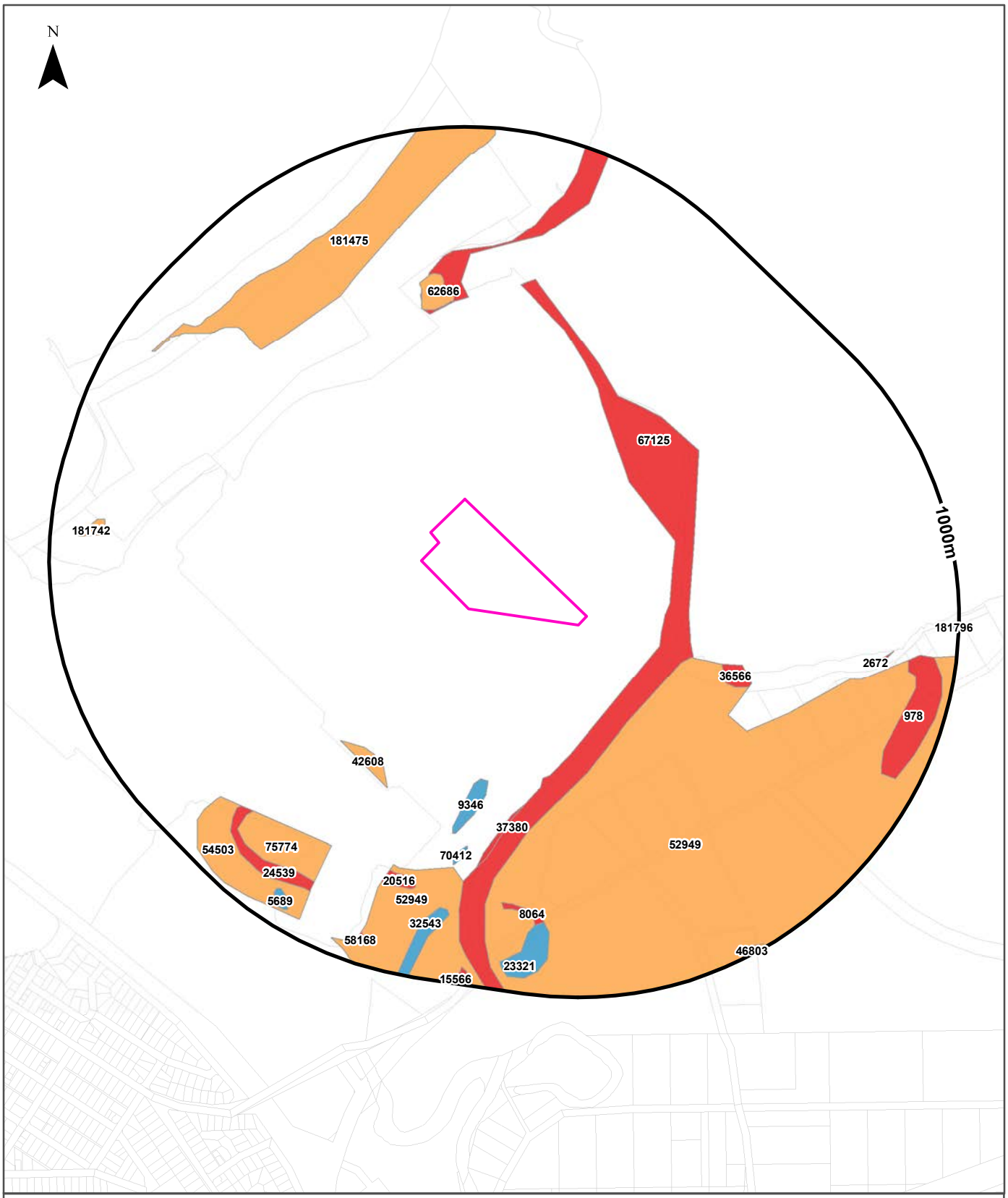
Bushfire Prone Areas

Bushfire Prone Areas within the dataset buffer:

Map Id	Local Govenrment Area	Distance	Direction
86332	BUNBURY	469m	North
86326	BUNBURY	665m	East
86098	BUNBURY	665m	East
86323	BUNBURY	674m	East
86327	BUNBURY	687m	East
86011	BUNBURY	689m	East
86328	BUNBURY	711m	East
86324	BUNBURY	748m	East
86325	BUNBURY	779m	East
86322	BUNBURY	973m	South

Ecological Constraints - Groundwater Dependent Ecosystems Atlas

Lot 963 Estuary Drive, Vittoria, WA 6230



Legend

- Site Boundary
- Report Buffer
- Property Boundaries
- High potential GDE - from national assessment
- High potential GDE - from regional studies
- Moderate potential GDE - from national assessment
- Moderate potential GDE - from regional studies
- Low potential GDE - from national assessment
- Low potential GDE - from regional studies
- Known GDE - from regional studies
- Unclassified potential GDE - from national assessment
- Unclassified potential GDE - from regional studies

Scale: 0 100 200 400 600 800 Meters

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Coordinate Reference System:
GDA2020 MGA50

Date: 10 August 2022

Ecological Constraints

Lot 963 Estuary Drive, Vittoria, WA 6230

Groundwater Dependent Ecosystems

GDEs within the dataset buffer:

MapID	Type	Name	GDE Potential	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Dist	Dir'n
67125	Aquatic	HARVEY INLET	High potential GDE - from national assessment	1	Dune ridges (on limestone along the coast) and inner alluvial plain.	Wetland		199m	South East
37380	Aquatic	PRESTON RIVER	High potential GDE - from national assessment	10	Dune ridges (on limestone along the coast) and inner alluvial plain.	River		252m	South
52949	Aquatic	UNKNOWN	Moderate potential GDE - from national assessment	3	Dune ridges (on limestone along the coast) and inner alluvial plain.	Wetland		269m	South East
36566	Aquatic	HARVEY INLET	High potential GDE - from national assessment	3	Dune ridges (on limestone along the coast) and inner alluvial plain.	Wetland		382m	South East
9346	Aquatic	UNKNOWN	Low potential GDE - from national assessment	2	Dune ridges (on limestone along the coast) and inner alluvial plain.	Wetland		446m	South
42608	Aquatic	UNKNOWN	Moderate potential GDE - from national assessment	6	Dune ridges (on limestone along the coast) and inner alluvial plain.	Wetland		465m	South West
62686	Aquatic	HARVEY INLET	High potential GDE - from national assessment	10	Dune ridges (on limestone along the coast) and inner alluvial plain.	Wetland		505m	North
181586	Terrestrial		Moderate potential GDE - from national assessment	10	Dune ridges (on limestone along the coast) and inner alluvial plain.	Vegetation		514m	North
70412	Aquatic	UNKNOWN	Low potential GDE - from national assessment	1	Dune ridges (on limestone along the coast) and inner alluvial plain.	Wetland		628m	South
181475	Terrestrial		Moderate potential GDE - from national assessment	5	Dune ridges (on limestone along the coast) and inner alluvial plain.	Vegetation		638m	North
20516	Aquatic	UNKNOWN	High potential GDE - from national assessment	1	Dune ridges (on limestone along the coast) and inner alluvial plain.	Wetland		731m	South
75774	Aquatic	UNKNOWN	Moderate potential GDE - from national assessment	5	Dune ridges (on limestone along the coast) and inner alluvial plain.	Wetland		734m	South West
8064	Aquatic	UNKNOWN	High potential GDE - from national assessment	10	Dune ridges (on limestone along the coast) and inner alluvial plain.	Wetland		765m	South
2672	Aquatic	HARVEY INLET	High potential GDE - from national assessment		Dune ridges (on limestone along the coast) and inner alluvial plain.	Wetland		766m	East
24539	Aquatic	UNKNOWN	High potential GDE - from national assessment	5	Dune ridges (on limestone along the coast) and inner alluvial plain.	Wetland		793m	South West

MapID	Type	Name	GDE Potential	IDE Likelihood	Geomorphology	Ecosystem Type	Aquifer Geology	Dist	Dir'n
32543	Aquatic	UNKNOWN	Low potential GDE - from national assessment	3	Dune ridges (on limestone along the coast) and inner alluvial plain.	Wetland		804m	South
23321	Aquatic	UNKNOWN	Low potential GDE - from national assessment	2	Dune ridges (on limestone along the coast) and inner alluvial plain.	Wetland		805m	South
54503	Aquatic	UNKNOWN	Moderate potential GDE - from national assessment	5	Dune ridges (on limestone along the coast) and inner alluvial plain.	Wetland		806m	South West
181742	Terrestrial		Moderate potential GDE - from national assessment	5	Dune ridges (on limestone along the coast) and inner alluvial plain.	Vegetation		853m	West
978	Aquatic	UNKNOWN	High potential GDE - from national assessment	9	Dune ridges (on limestone along the coast) and inner alluvial plain.	Wetland		869m	East
5689	Aquatic	UNKNOWN	Low potential GDE - from national assessment	5	Dune ridges (on limestone along the coast) and inner alluvial plain.	Wetland		904m	South West
58168	Aquatic	UNKNOWN	High potential GDE - from national assessment	1	Dune ridges (on limestone along the coast) and inner alluvial plain.	Wetland		914m	South
15566	Aquatic	UNKNOWN	High potential GDE - from national assessment	1	Dune ridges (on limestone along the coast) and inner alluvial plain.	Wetland		953m	South
181796	Terrestrial		Low potential GDE - from national assessment	8	Dune ridges (on limestone along the coast) and inner alluvial plain.	Vegetation		964m	East
46803	Aquatic	UNKNOWN	Moderate potential GDE - from national assessment	4	Dune ridges (on limestone along the coast) and inner alluvial plain.	Wetland		973m	South East

Groundwater Dependent Ecosystems Atlas Data Source: Bureau of Meteorology

Ecological Constraints

Lot 963 Estuary Drive, Vittoria, WA 6230

Ramsar Wetlands

Ramsar Wetlands within the dataset buffer:

RAMSAR Reference Code	Wetland	Distance	Direction
N/A	No records in buffer		

Location Confidences

Where Lotsearch has had to georeference features from supplied addresses, a location confidence has been assigned to the data record. This indicates a confidence to the positional accuracy of the feature. Where applicable, a code is given under the field heading “LC” or “LocConf”. These codes lookup to the following location confidences:

LC Code	Location Confidence
Premise match	Georeferenced to the site location / premise or part of site
General area or suburb match	Georeferenced with the confidence of the general/approximate area
Road match	Georeferenced to the road or rail
Road intersection	Georeferenced to the road intersection
Feature is a buffered point	Feature is a buffered point
Land adjacent to geocoded site	Land adjacent to Georeferenced Site
Network of features	Georeferenced to a network of features

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Appendix E
Historical Aerial Imagery

Appendix F
Soil Core Photographs

aurecon	Site Investigation Photographic Log
Client Name Quantem	**Project** P521420 PSI Quantem Bulk Liquid Storage Facility

Photo No. 1	**Date** 28/09/22
Description Soil profile at EBH01	

Photo No. 2	**Date** 28/09/22
Description Soil profile at EBH02	

aurecon	**Site Investigation Photographic Log**
Client Name Quantem	**Project** P521420 PSI Quantem Bulk Liquid Storage Facility

Photo No. 3	**Date** 28/09/22
Description Soil profile at EBH03	

Photo No. 4	**Date** 28/09/22
Description Description Soil profile at EBH04	

aurecon	Site Investigation Photographic Log
Client Name Quantem	**Project** P521420 PSI Quantem Bulk Liquid Storage Facility

Photo No. 5	**Date** 29/09/22
Description Soil profile at EBH05	

Photo No. 6	**Date** 29/09/22
Description Soil profile at EBH06.	

aurecon	Site Investigation Photographic Log
Client Name Quantem	**Project** P521420 PSI Quantem Bulk Liquid Storage Facility

Photo No. 7	**Date** 29/09/22
Description Description Soil profile at EBH07.	

Photo No. 8	**Date** 28/08/22
Description Soil profile at EMW01.	

aurecon	**Site Investigation Photographic Log**
Client Name Quantem	**Project** P521420 PSI Quantem Bulk Liquid Storage Facility

Photo No. 9	**Date** **28/08/22**
Description Soil profile at EMW02.	

Appendix G
Results Tables

Table G1 Soil Analytical Results (BTEXN/TPH/TRH)
Environmental Baseline Assessment: Bulk Liquid Storage Facility
Quantem
Project ID: P521420

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	BTEXN								TPH									TRH							
	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	Naphthalene (VOC)	C16-C35 Aliphatic	TRH >C35 Aliphatic	C16-C35 Aromatic	>C35 Aromatic	C6-C9	C10-C14	C15-C28	C29-C36	+C10-C36 (Sum of total)	C6-C10	C6-C10 (F1 minus BTEX)	C10-C16	C10-C16 (F2 minus Naphthalene)	C16-C34	C34-C40	C10-C40 (Sum of total)
Units	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
EQL	0.1	0.1	0.1	0.2	0.1	0.3	0.2	0.5	100	100	90	100	10	20	50	50	50	10	10	50	50	100	100	50
NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil																								
NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand	3					230													260					
NEPM 2013 Table 1B(5) Generic EIL - Comm/Ind																								
NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil	75	165	165			180													215	170	170	1,700	3,300	
NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																								
PFAS NEMP 2020 Ecological indirect exposure																								
PFAS NEMP 2020 Industrial/ commercial (HIL D)																								
WA DWER Waste Classification (Table 3) CT1 Class I	0.2	160	60			120																		
WA DWER Waste Classification (Table 3) CT2 Class II	0.2	160	60			120																		
WA DWER Waste Classification (Table 3) CT3 Class III	2	1,600	600			1,200																		
WA DWER Waste Classification (Table 3) CT4 Class IV	20	16,000	6,000			12,000												700		1,000		3,500	10,000	

Field ID	Depth	Matrix Type	Sample Type																							
BH01_0-0.5	0 - 0.5	Soil	Normal	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<100	<100	<90	<100	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
BH01_2.5-3.0	2.5 - 3	Soil	Normal	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<100	<100	<90	<100	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
BH02_0-0.1	0 - 0.1	Soil	Normal	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<100	<100	<90	<100	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
BH02_2.5-3.0	2.5 - 3	Soil	Normal	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<100	<100	<90	<100	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
BH03_0.5-1.0	0.5 - 1	Soil	Normal	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<100	<100	<90	<100	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
BH03_2.0-2.5	2 - 2.5	Soil	Normal	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<100	<100	<90	<100	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
BH04_0-0.5	0 - 0.5	Soil	Normal	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<100	<100	<90	<100	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
BH04_2.5-3.0	2.5 - 3	Soil	Normal	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<100	<100	<90	<100	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
BH05_0-0.5	0 - 0.5	Soil	Normal	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<100	<100	<90	<100	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
BH06_0.5-1.0	0.5 - 1	Soil	Normal	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<100	<100	<90	<100	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
BH06_2.5-3.0	2.5 - 3	Soil	Normal	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<100	<100	<90	<100	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
BH07_0.5-1.0	0.5 - 1	Soil	Normal	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<100	<100	<90	<100	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
BH07_2.5-3.0	2.5 - 3	Soil	Normal	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<100	<100	<90	<100	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
MW1_0-0.5	0 - 0.5	Soil	Normal	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<100	<100	<90	<100	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
MW1_3-3.5	3 - 3.5	Soil	Normal	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<100	<100	<90	<100	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
MW1_4.0-4.5	4 - 4.5	Soil	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
MW2_0-0.5	0 - 0.5	Soil	Normal	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<100	<100	<90	<100	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
MW2_3-3.5	3 - 3.5	Soil	Normal	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<1	<100	<100	<90	<100	<10	<50	<100	<100	<50	<10	<10	<50	<50	<100	<100	<50
MW2_4.5-5.0	4.5 - 5	Soil	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Environmental Standards
HEPA, Jan 2020, PFAS NEMP 2020 Industrial/ commercial (HIL D)
DWER, April 2018, WA DWER Waste Classification (Table 3) CT1 Class I
DWER, April 2018, WA DWER Waste Classification (Table 3) CT2 Class II
DWER, April 2018, WA DWER Waste Classification (Table 3) CT3 Class III
DWER, April 2018, WA DWER Waste Classification (Table 3) CT4 Class IV

Table G2 Soil Analytical Results (PAH)
Environmental Baseline Assessment: Bulk Liquid Storage Facility
Quantem
Project ID: P521420

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		PAH																			
		Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Benzo(a)pyrene TEQ calc (half)	Naphthalene	Benzo(a)pyrene TEQ calc (Zero)	Benzo(a)pyrene TEQ (LOR)	Benzo(b+j)fluoranthene	Phenanthrene	Pyrene	PAHs (Sum of total)
	Units	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
	EQL	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Human health	NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil													40		40	40				
	NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand																				4,000
Ecological health	NEPM 2013 Table 1B(5) Generic EIL - Comm/Ind														370						
	NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil					1.4															
	NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																				
PFAS	PFAS NEMP 2020 Ecological indirect exposure																				
	PFAS NEMP 2020 Industrial/ commercial (HIL D)																				
Waste classification	WA DWER Waste Classification (Table 3) CT1 Class I																				
	WA DWER Waste Classification (Table 3) CT2 Class II																				
	WA DWER Waste Classification (Table 3) CT3 Class III																				
	WA DWER Waste Classification (Table 3) CT4 Class IV																				
Lab Report	Field ID	Depth	Matrix Type	Sample Type																	
EP2209615	BH01_0-0.5	0 - 0.5	Soil	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	<0.5	<0.5	**1.2**	<0.5	<0.5	<0.5	<0.5
EP2209615	BH01_2.5-3.0	2.5 - 3	Soil	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	<0.5	<0.5	**1.2**	<0.5	<0.5	<0.5	<0.5
EP2209615	BH02_0-0.1	0 - 0.1	Soil	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	<0.5	<0.5	**1.2**	<0.5	<0.5	<0.5	<0.5
EP2209615	BH02_2.5-3.0	2.5 - 3	Soil	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	<0.5	<0.5	**1.2**	<0.5	<0.5	<0.5	<0.5
EP2209615	BH03_0.5-1.0	0.5 - 1	Soil	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	<0.5	<0.5	**1.2**	<0.5	<0.5	<0.5	<0.5
EP2209615	BH03_2.0-2.5	2 - 2.5	Soil	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	<0.5	<0.5	**1.2**	<0.5	<0.5	<0.5	<0.5
EP2209615	BH04_0-0.5	0 - 0.5	Soil	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	<0.5	<0.5	**1.2**	<0.5	<0.5	<0.5	<0.5
EP2209615	BH04_2.5-3.0	2.5 - 3	Soil	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	<0.5	<0.5	**1.2**	<0.5	<0.5	<0.5	<0.5
EP2209615	BH05_0-0.5	0 - 0.5	Soil	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	<0.5	<0.5	**1.2**	<0.5	<0.5	<0.5	<0.5
EP2209615	BH06_0.5-1.0	0.5 - 1	Soil	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	<0.5	<0.5	**1.2**	<0.5	<0.5	<0.5	<0.5
EP2209615	BH06_2.5-3.0	2.5 - 3	Soil	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	<0.5	<0.5	**1.2**	<0.5	<0.5	<0.5	<0.5
EP2209615	BH07_0.5-1.0	0.5 - 1	Soil	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	<0.5	<0.5	**1.2**	<0.5	<0.5	<0.5	<0.5
EP2209615	BH07_2.5-3.0	2.5 - 3	Soil	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	<0.5	<0.5	**1.2**	<0.5	<0.5	<0.5	<0.5
EP2209615	MW1_0-0.5	0 - 0.5	Soil	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	<0.5	<0.5	**1.2**	<0.5	<0.5	<0.5	<0.5
EP2209615	MW1_3-3.5	3 - 3.5	Soil	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	<0.5	<0.5	**1.2**	<0.5	<0.5	<0.5	<0.5
EP2209615	MW1_4.0-4.5	4 - 4.5	Soil	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EP2209615	MW2_0-0.5	0 - 0.5	Soil	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	<0.5	<0.5	**1.2**	<0.5	<0.5	<0.5	<0.5
EP2209615	MW2_3-3.5	3 - 3.5	Soil	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.6**	<0.5	<0.5	**1.2**	<0.5	<0.5	<0.5	<0.5
EP2209615	MW2_4.5-5.0	4.5 - 5	Soil	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Environmental Standards
HEPA, Jan 2020, PFAS NEMP 2020 Industrial/ commercial (HIL D)
DWER, April 2018, WA DWER Waste Classification (Table 3) CT1 Class I
DWER, April 2018, WA DWER Waste Classification (Table 3) CT2 Class II
DWER, April 2018, WA DWER Waste Classification (Table 3) CT3 Class III
DWER, April 2018, WA DWER Waste Classification (Table 3) CT4 Class IV

Table G3 Soil Analytical Results (Metals)
Environmental Baseline Assessment: Bulk Liquid Storage Facility
Quantem
Project ID: P521420

		Metals																	
		Aluminium	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium (hexavalent)	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Silver	Selenium	Vanadium	Zinc
	Units	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
	EQL	20	2	10	1	10	0.1	0.5	2	5	0.1	5	0.1	2	2	2	1	5	5
Human health	NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil		3,000		500	300,000	900	3,600	4,000	240,000	1,500	60,000	730		6,000		10,000		400,000
	NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand																		
Ecological health	NEPM 2013 Table 1B(5) Generic EIL - Comm/Ind		160																
	NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil																		
	NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																		
PFAS	PFAS NEMP 2020 Ecological indirect exposure																		
	PFAS NEMP 2020 Industrial/ commercial (HIL D)																		
Waste classification	WA DWER Waste Classification (Table 3) CT1 Class I	50,000	14	50,000	2	25	0.4	10	50,000	50,000	2	50,000	0.2	10	4	20	2	50,000	50,000
	WA DWER Waste Classification (Table 3) CT2 Class II	50,000	14	50,000	2	25	0.4	10	50,000	50,000	2	50,000	0.2	10	4	20	2	50,000	50,000
	WA DWER Waste Classification (Table 3) CT3 Class III	100,000	140	100,000	20	50	4	100	100,000	100,000	20	100,000	2	100	40	200	20	100,000	100,000
	WA DWER Waste Classification (Table 3) CT4 Class IV	200,000	1,400	200,000	200	100	40	1,000	200,000	200,000	200	200,000	20	1,000	400	2,000	200	200,000	200,000

Lab Report	Field ID	Depth	Matrix Type	Sample Type															
EP2209615	BH01_0-0.5	0 - 0.5	Soil	Normal	670	<5	30	<1	<50	<0.1	<2.5[#6]	<2	<5	13.6	43	<0.1	<2	<2	<2	<1	<5	30
EP2209615	BH01_2.5-3.0	2.5 - 3	Soil	Normal	660	<5	<10	<1	<50	<0.1	<0.5	<2	<5	1.8	7	<0.1	<2	<2	<2	<1	<5	<5
EP2209615	BH02_0-0.1	0 - 0.1	Soil	Normal	1,390	<5	<10	<1	<50	<0.1	<0.5	<2	<5	9.2	20	<0.1	<2	<2	<2	<1	6	13
EP2209615	BH02_2.5-3.0	2.5 - 3	Soil	Normal	740	<5	<10	<1	<50	<0.1	<0.5	<2	<5	0.9	8	<0.1	<2	<2	<2	<1	<5	<5
EP2209615	BH03_0.5-1.0	0.5 - 1	Soil	Normal	880	<5	<10	<1	<50	<0.1	<0.5	<2	5	1.2	21	<0.1	<2	<2	<2	<1	<5	<5
EP2209615	BH03_2.0-2.5	2 - 2.5	Soil	Normal	760	<5	<10	<1	<50	<0.1	<0.5	<2	<5	1.5	11	<0.1	<2	<2	<2	<1	<5	<5
EP2209615	BH04_0-0.5	0 - 0.5	Soil	Normal	3,740	<5	30	<1	<50	<0.1	<0.5	3	<5	3.8	182	<0.1	<2	3	<2	<1	17	7
EP2209615	BH04_2.5-3.0	2.5 - 3	Soil	Normal	3,710	<5	30	<1	<50	<0.1	<0.5	3	<5	3.9	166	<0.1	<2	4	<2	<1	18	7
EP2209615	BH05_0-0.5	0 - 0.5	Soil	Normal	3,650	<5	20	<1	<50	<0.1	<0.5	3	<5	3.4	128	<0.1	<2	3	<2	<1	16	<5
EP2209615	BH06_0.5-1.0	0.5 - 1	Soil	Normal	4,040	<5	20	<1	<50	<0.1	<0.5	3	<5	3.6	125	<0.1	<2	3	<2	<1	17	<5
EP2209615	BH06_2.5-3.0	2.5 - 3	Soil	Normal	2,600	<5	20	<1	<50	<0.1	<0.5	<2	<5	2.5	97	<0.1	2	<2	<2	<1	13	<5
EP2209615	BH07_0.5-1.0	0.5 - 1	Soil	Normal	4,650	11	30	<1	<50	<0.1	<0.5	4	<5	3.9	153	<0.1	2	4	<2	<1	22	<5
EP2209615	BH07_2.5-3.0	2.5 - 3	Soil	Normal	4,600	<5	20	<1	<50	<0.1	<0.5	3	<5	4.2	194	<0.1	<2	3	<2	<1	14	<5
EP2209615	MW1_0-0.5	0 - 0.5	Soil	Normal	790	<5	20	<1	<50	<0.1	<0.5	<2	<5	5.8	38	<0.1	<2	<2	<2	<1	<5	19
EP2209615	MW1_3-3.5	3 - 3.5	Soil	Normal	2,040	<5	<10	<1	<50	<0.1	<0.5	<2	<5	2.4	10	<0.1	<2	<2	<2	<1	9	<5
EP2209615	MW1_4.0-4.5	4 - 4.5	Soil	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EP2209615	MW2_0-0.5	0 - 0.5	Soil	Normal	3,160	<5	30	<1	<50	<0.1	<0.5	3	<5	2.9	130	<0.1	<2	2	<2	<1	15	<5
EP2209615	MW2_3-3.5	3 - 3.5	Soil	Normal	1,840	7	<10	<1	<50	<0.1	<0.5	<2	<5	1.5	91	<0.1	<2	<2	<2	<1	12	<5
EP2209615	MW2_4.5-5.0	4.5 - 5	Soil	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Environmental Standards
HEPA, Jan 2020, PFAS NEMP 2020 Industrial/ commercial (HIL D)
DWER, April 2018, WA DWER Waste Classification (Table 3) CT1 Class I
DWER, April 2018, WA DWER Waste Classification (Table 3) CT2 Class II
DWER, April 2018, WA DWER Waste Classification (Table 3) CT3 Class III
DWER, April 2018, WA DWER Waste Classification (Table 3) CT4 Class IV

Table G4 Soil Analytical Results (Phenols)
Environmental Baseline Assessment: Bulk Liquid Storage Facility
Quantem
Project ID: P521420

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		Phenols																			
		Phenolics Total	4,6-Dinitro-o-cyclohexylphenol	Cresol Total	Phenols (Total Halogenated)	Phenols (Total Non Halogenated)	Tetrachlorophenols	2,4,5-Trichlorophenol	2,6-Dichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2-Chlorophenol	2-Methylphenol	2-Nitrophenol	4-chloro-3-methylphenol	4-Nitrophenol	Pentachlorophenol	Phenol	2,4-Dinitrophenol	4,6-Dinitro-2-methylphenol
	Units	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
	EQL	1	20	0.5	1	20	10	0.5	0.5	0.5	0.5	0.5	0.5	0.2	0.5	0.5	5	1	0.5	5	0.5
Human health	NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil			25,000														660	240,000		
	NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand																				
Ecological health	NEPM 2013 Table 1B(5) Generic EIL - Comm/Ind																				
	NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil																				
	NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																				
PFAS	PFAS NEMP 2020 Ecological indirect exposure																				
	PFAS NEMP 2020 Industrial/ commercial (HIL D)																				
Waste classification	WA DWER Waste Classification (Table 3) CT1 Class I			400		28.8															
	WA DWER Waste Classification (Table 3) CT2 Class II			400		28.8															
	WA DWER Waste Classification (Table 3) CT3 Class III			4,000		288															
	WA DWER Waste Classification (Table 3) CT4 Class IV			40,000		2,880															
Lab Report	Field ID	Depth	Matrix Type	Sample Type																	
EP2209615	BH01_0-0.5	0 - 0.5	Soil	Normal	<1	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<2	<0.5	-	-
EP2209615	BH01_2.5-3.0	2.5 - 3	Soil	Normal	<1	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<2	<0.5	-	-
EP2209615	BH02_0-0.1	0 - 0.1	Soil	Normal	<1	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<2	<0.5	-	-
EP2209615	BH02_2.5-3.0	2.5 - 3	Soil	Normal	<1	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<2	<0.5	-	-
EP2209615	BH03_0.5-1.0	0.5 - 1	Soil	Normal	<1	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<2	<0.5	-	-
EP2209615	BH03_2.0-2.5	2 - 2.5	Soil	Normal	<1	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<2	<0.5	-	-
EP2209615	BH04_0-0.5	0 - 0.5	Soil	Normal	<1	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<2	<0.5	-	-
EP2209615	BH04_2.5-3.0	2.5 - 3	Soil	Normal	<1	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<2	<0.5	-	-
EP2209615	BH05_0-0.5	0 - 0.5	Soil	Normal	<1	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<2	<0.5	-	-
EP2209615	BH06_0.5-1.0	0.5 - 1	Soil	Normal	<1	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<2	<0.5	-	-
EP2209615	BH06_2.5-3.0	2.5 - 3	Soil	Normal	<1	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<2	<0.5	-	-
EP2209615	BH07_0.5-1.0	0.5 - 1	Soil	Normal	<1	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<2	<0.5	-	-
EP2209615	BH07_2.5-3.0	2.5 - 3	Soil	Normal	<1	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<2	<0.5	-	-
EP2209615	MW1_0-0.5	0 - 0.5	Soil	Normal	<1	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<2	<0.5	-	-
EP2209615	MW1_3-3.5	3 - 3.5	Soil	Normal	<1	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<2	<0.5	-	-
EP2209615	MW1_4.0-4.5	4 - 4.5	Soil	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EP2209615	MW2_0-0.5	0 - 0.5	Soil	Normal	<1	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<2	<0.5	-	-
EP2209615	MW2_3-3.5	3 - 3.5	Soil	Normal	<1	-	-	-	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	<2	<0.5	-	-
EP2209615	MW2_4.5-5.0	4.5 - 5	Soil	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Environmental Standards
HEPA, Jan 2020, PFAS NEMP 2020 Industrial/ commercial (HIL D)
DWER, April 2018, WA DWER Waste Classification (Table 3) CT1 Class I
DWER, April 2018, WA DWER Waste Classification (Table 3) CT2 Class II
DWER, April 2018, WA DWER Waste Classification (Table 3) CT3 Class III
DWER, April 2018, WA DWER Waste Classification (Table 3) CT4 Class IV

Table G5 Soil Analytical Results (Asbestos and Cyanide)
Environmental Baseline Assessment: Bulk Liquid Storage Facility
Quantem
Project ID: P521420

		Asbestos								Cyanides
		Asbestos fibres	Asbestos (Trace)	Asbestos Type	Asbestos (Trace)	Description	Organic Fibre	Synthetic Mineral Fibre	weight of sample	Cyanide (WAD)
Units		g/kg	Fibres	-	Fibres	--	g/kg	g/kg	g	mg/kg
EQL					5		0.1	0.1	0.01	1
Human health	NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil									
	NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand									
Ecological health	NEPM 2013 Table 1B(5) Generic EIL - Comm/Ind									
	NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil									
	NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil									
PFAS	PFAS NEMP 2020 Ecological indirect exposure									
	PFAS NEMP 2020 Industrial/ commercial (HIL D)									
Waste classification	WA DWER Waste Classification (Table 3) CT1 Class I									
	WA DWER Waste Classification (Table 3) CT2 Class II									
	WA DWER Waste Classification (Table 3) CT3 Class III									
	WA DWER Waste Classification (Table 3) CT4 Class IV									

Lab Report	Field ID	Depth	Matrix Type	Date	Sample Type									
EP2209615	BH01_0-0.5	0 - 0.5	Soil	28/07/2022	Normal	ND	ND	NA	ND	NA	ND	ND	283	<1
EP2209615	BH01_2.5-3.0	2.5 - 3	Soil	28/07/2022	Normal	ND	ND	NA	ND	NA	ND	ND	410	<1
EP2209615	BH02_0-0.1	0 - 0.1	Soil	28/07/2022	Normal	ND	ND	NA	ND	NA	ND	ND	329	<1
EP2209615	BH02_2.5-3.0	2.5 - 3	Soil	28/07/2022	Normal	ND	ND	NA	ND	NA	ND	ND	304	<1
EP2209615	BH03_0.5-1.0	0.5 - 1	Soil	28/07/2022	Normal	ND	ND	NA	ND	NA	ND	ND	578	<1
EP2209615	BH03_2.0-2.5	2 - 2.5	Soil	28/07/2022	Normal	ND	ND	NA	ND	NA	ND	ND	411	<1
EP2209615	BH04_0-0.5	0 - 0.5	Soil	28/07/2022	Normal	ND	ND	NA	ND	NA	ND	ND	468	<1
EP2209615	BH04_2.5-3.0	2.5 - 3	Soil	28/07/2022	Normal	ND	ND	NA	ND	NA	ND	ND	311	<1
EP2209615	BH05_0-0.5	0 - 0.5	Soil	29/07/2022	Normal	ND	ND	NA	ND	NA	ND	ND	409	<1
EP2209615	BH06_0.5-1.0	0.5 - 1	Soil	29/07/2022	Normal	ND	ND	NA	ND	NA	ND	ND	369	<1
EP2209615	BH06_2.5-3.0	2.5 - 3	Soil	29/07/2022	Normal	ND	ND	NA	ND	NA	ND	ND	329	<1
EP2209615	BH07_0.5-1.0	0.5 - 1	Soil	29/07/2022	Normal	ND	ND	NA	ND	NA	ND	ND	339	<1
EP2209615	BH07_2.5-3.0	2.5 - 3	Soil	29/07/2022	Normal	ND	ND	NA	ND	NA	ND	ND	304	<1
EP2209615	MW1_0-0.5	0 - 0.5	Soil	28/07/2022	Normal	ND	ND	NA	ND	NA	ND	ND	425	<1
EP2209615	MW1_3-3.5	3 - 3.5	Soil	28/07/2022	Normal	ND	ND	NA	ND	NA	ND	ND	570	<1
EP2209615	MW2_0-0.5	0 - 0.5	Soil	28/07/2022	Normal	ND	ND	NA	ND	NA	ND	ND	396	<1
EP2209615	MW2_3-3.5	3 - 3.5	Soil	28/07/2022	Normal	ND	ND	NA	ND	NA	ND	ND	502	<1

Comments
ND - Non-detect
NA - Not applicable

Table G6 Soil Analytical Results (PFAS)
Environmental Baseline Assessment: Bulk Liquid Storage Facility
Quantem
Project ID: P521420

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		PFAS																														
		Sum of PFAS (WA DER List)	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	N-ethyl perfluorooctane sulfonamide (NEtFOSA)	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanesulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexane sulfonic acid (PFHxS)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (PFOSA)	Perfluorooctanesulfonic acid (PFOS)	Perfluorooctanoic acid (PFOA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of PFHxS and PFOS	Sum of PFAS and PFOS
Unit:		mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg
EQL		0.0002	0.5	0.5	0.5	0.5	0.4	0.2	0.5	0.4	0.2	0.5	0.2	0.8	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0002	0.2	0.2	0.2	0.2	0.2	0.2	0.0002
Human health	NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil																															
	NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand																															
Ecological health	NEPM 2013 Table 1B(5) Generic EIL - Comm/Ind																															
	NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil																															
	NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																															
PFAS	PFAS NEMP 2020 Ecological indirect exposure																								10							
	PFAS NEMP 2020 Industrial/ commercial (HIL D)																									50						20
Waste classification	WA DWER Waste Classification (Table 3) CT1 Class I																															
	WA DWER Waste Classification (Table 3) CT2 Class II																															
	WA DWER Waste Classification (Table 3) CT3 Class III																															
	WA DWER Waste Classification (Table 3) CT4 Class IV																															

Lab Report	Field ID	Depth	Matrix Type	Sample Type																														
EP2209615	BH01_0-0.5	0 - 0.5	Soil	Normal	**0.0003**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<0.5	<0.2	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	**0.3**	<0.0002	<0.2	<0.2	<0.5	<0.2	<0.2	**0.3**	**0.0003**
EP2209615	BH01_2.5-3.0	2.5 - 3	Soil	Normal	<0.0002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<0.5	<0.2	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.0002	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.0002
EP2209615	BH02_0-0.1	0 - 0.1	Soil	Normal	<0.0002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<0.5	<0.2	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.0002	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.0002
EP2209615	BH02_2.5-3.0	2.5 - 3	Soil	Normal	<0.0002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<0.5	<0.2	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.0002	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.0002
EP2209615	BH03_0.5-1.0	0.5 - 1	Soil	Normal	<0.0002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<0.5	<0.2	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.0002	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.0002
EP2209615	BH03_2.0-2.5	2 - 2.5	Soil	Normal	<0.0002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<0.5	<0.2	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.0002	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.0002
EP2209615	BH04_0-0.5	0 - 0.5	Soil	Normal	<0.0002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<0.5	<0.2	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.0002	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.0002
EP2209615	BH04_2.5-3.0	2.5 - 3	Soil	Normal	<0.0002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<0.5	<0.2	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.0002	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.0002
EP2209615	BH05_0-0.5	0 - 0.5	Soil	Normal	<0.0002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<0.5	<0.2	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.0002	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.0002
EP2209615	BH06_0.5-1.0	0.5 - 1	Soil	Normal	<0.0002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<0.5	<0.2	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.0002	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.0002
EP2209615	BH06_2.5-3.0	2.5 - 3	Soil	Normal	<0.0002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<0.5	<0.2	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.0002	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.0002
EP2209615	BH07_0.5-1.0	0.5 - 1	Soil	Normal	<0.0002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<0.5	<0.2	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.0002	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.0002
EP2209615	BH07_2.5-3.0	2.5 - 3	Soil	Normal	<0.0002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<0.5	<0.2	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.0002	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.0002
EP2209615	MW1_0-0.5	0 - 0.5	Soil	Normal	**0.0002**	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<0.5	<0.2	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	**0.2**	<0.0002	<0.2	<0.2	<0.5	<0.2	<0.2	**0.2**	**0.0002**
EP2209615	MW1_3-3.5	3 - 3.5	Soil	Normal	<0.0002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<0.5	<0.2	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.0002	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.0002
EP2209615	MW1_4.0-4.5	4 - 4.5	Soil	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EP2209615	MW2_0-0.5	0 - 0.5	Soil	Normal	<0.0002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<0.5	<0.2	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.0002	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.0002
EP2209615	MW2_3-3.5	3 - 3.5	Soil	Normal	<0.0002	<0.5	<0.5	<0.5	<0.5	<0.5	<0.2	<0.5	<0.5	<0.2	<0.5	<0.2	<1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.0002	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.0002
EP2209615	MW2_4.5-5.0	4.5 - 5	Soil	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Environmental Standards
HEPA, Jan 2020, PFAS NEMP 2020 Industrial/ commercial (HIL D)
DWER, April 2018, WA DWER Waste Classification (Table 3) CT1 Class I
DWER, April 2018, WA DWER Waste Classification (Table 3) CT2 Class II
DWER, April 2018, WA DWER Waste Classification (Table 3) CT3 Class III
DWER, April 2018, WA DWER Waste Classification (Table 3) CT4 Class IV

Table G7 Soil Analytical Results (Inorganics/OCP/Herbicides)
Environmental Baseline Assessment: Bulk Liquid Storage Facility
Quantem
Project ID: PS21420

aurecon

		Halogenated Benzenes	Inorganics			Herbicides	MAH	Organochlorine Pesticides																						
		Hexachlorobenzene	Cyanide Total	Fluoride	pH (Lab)	Hedonal	Styrene	Endosulfan	Total Organochlorine Pesticides	4,4-DDE	a-BHC	Chlordane (cis)	Aldrin	Chlordane (trans)	b-BHC	d-BHC	DDD	DDT	chlordane	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor
	Units	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
	EQL	0.05	1	40	0.01	0.02	0.5	0.05	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	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Human health	NEPM 2013 Table 1A(1) HILs Comm/Ind D Soil	80				9,000													530					100				50		2,500
	NEPM 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand																													
Ecological health	NEPM 2013 Table 1B(5) Generic EIL - Comm/Ind																	640												
	NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil																													
	NEPM 2013 Table 1B(7) Management Limits Comm / Ind, Coarse Soil																													
PFAS	PFAS NEMP 2020 Ecological indirect exposure																													
	PFAS NEMP 2020 Industrial/ commercial (HIL D)																													
Waste classification	WA DWER Waste Classification (Table 3) CT1 Class I		16	300		0.02	6																							
	WA DWER Waste Classification (Table 3) CT2 Class II		16	300		0.02	6																							
	WA DWER Waste Classification (Table 3) CT3 Class III		160	3,000		0.2	60																							
	WA DWER Waste Classification (Table 3) CT4 Class IV		1,600	30,000		2	600																							
Lab Report	Field ID	Depth	Matrix Type	Sample Type																										
EP2209615	BH01_0-0.5	0 - 0.5	Soil	Normal	<0.05	<1	**220**	**9.3**	<0.02	<0.5	<0.05	<5.00	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
EP2209615	BH01_2.5-3.0	2.5 - 3	Soil	Normal	<0.05	<1	**150**	**9.5**	<0.02	<0.5	<0.05	<5.00	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
EP2209615	BH02_0-0.1	0 - 0.1	Soil	Normal	<0.05	<1	**320**	**9.2**	<0.02	<0.5	<0.05	<5.00	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
EP2209615	BH02_2.5-3.0	2.5 - 3	Soil	Normal	<0.05	<1	**100**	**9.5**	<0.02	<0.5	<0.05	<5.00	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
EP2209615	BH03_0.5-1.0	0.5 - 1	Soil	Normal	<0.05	<1	<40	**9**	<0.02	<0.5	<0.05	<5.00	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
EP2209615	BH03_2.0-2.5	2 - 2.5	Soil	Normal	<0.05	<1	<40	**9.2**	<0.02	<0.5	<0.05	<5.00	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
EP2209615	BH04_0-0.5	0 - 0.5	Soil	Normal	<0.05	<1	**40**	**8.8**	<0.02	<0.5	<0.05	<5.00	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
EP2209615	BH04_2.5-3.0	2.5 - 3	Soil	Normal	<0.05	<1	**50**	**8.8**	<0.02	<0.5	<0.05	<5.00	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
EP2209615	BH05_0-0.5	0 - 0.5	Soil	Normal	<0.05	<1	**70**	**8.1**	<0.02	<0.5	<0.05	<5.00	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
EP2209615	BH05_0.5-1.0	0.5 - 1	Soil	Normal	<0.05	<1	**60**	**8.2**	<0.02	<0.5	<0.05	<5.00	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
EP2209615	BH05_2.5-3.0	2.5 - 3	Soil	Normal	<0.05	<1	<40	**8.3**	<0.02	<0.5	<0.05	<5.00	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
EP2209615	BH07_0.5-1.0	0.5 - 1	Soil	Normal	<0.05	<1	**50**	**8.3**	<0.02	<0.5	<0.05	<5.00	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
EP2209615	BH07_2.5-3.0	2.5 - 3	Soil	Normal	<0.05	<1	**40**	**8.9**	<0.02	<0.5	<0.05	<5.00	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
EP2209615	MW1_0-0.5	0 - 0.5	Soil	Normal	<0.05	<1	**90**	**9**	<0.02	<0.5	<0.05	<5.00	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
EP2209615	MW1_3-3.5	3 - 3.5	Soil	Normal	<0.05	<1	<40	**9.4**	<0.02	<0.5	<0.05	<5.00	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
EP2209615	MW1_4.0-4.5	4 - 4.5	Soil	Normal	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
EP2209615	MW2_0-0.5	0 - 0.5	Soil	Normal	<0.05	<1	**50**	**8.8**	<0.02	<0.5	<0.05	<5.00	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
EP2209615	MW2_3-3.5	3 - 3.5	Soil	Normal	<0.05	<1	<40	**8.8**	<0.02	<0.5	<0.05	<5.00	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2
EP2209615	MW2_4.5-5.0	4.5 - 5	Soil	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Environmental Standards
HEPA, Jan 2020, PFAS NEMP 2020 Industrial/ commercial (HIL D)
DWER, April 2018, WA DWER Waste Classification (Table 3) CT1 Class I
DWER, April 2018, WA DWER Waste Classification (Table 3) CT2 Class II
DWER, April 2018, WA DWER Waste Classification (Table 3) CT3 Class III
DWER, April 2018, WA DWER Waste Classification (Table 3) CT4 Class IV

Table G8 Groundwater Analytical Results (BTEXN/TPH/TRH)
Environmental Baseline Assessment: Bulk Liquid Storage Facility
Quantem
Project ID: P521420

		BTEXN								TPH (pre-amendment)					TRH (ASC NEPM)						
		Benzene	Toluene[1]	Ethylbenzene	Xylene (m & p)[1,2]	Xylene (o)[1]	Xylene Total	Total BTEX	Naphthalene (VOC)	C6-C9	C10-C14	C15-C28	C29-C36	+C10-C36 (Sum of total)	C6-C10	C6-C10 (F1 minus BTEX)	C10-C16	C10-C16 (F2 - Naphthalene)	C16-C34	C34-C40	C10-C40 (Sum of total)
Units		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
EQL		1	2	2	2	2	2	1	0.005	20	50	100	50	50	20	20	100	100	100	100	100
Human health	ASC NEPM Table 1A(4) HSL-D (commercial/industrial) or vapour intrusion, Sand, Groundwater at >=4 m, < 8m bgl	5,000	NL	NL	---	---	NL	---	NL	---	---	---	---	---	---	6,000	---	NL	---	---	---
	WA DoH Non-Potable Groundwater Use (NPUG)	10	25	3	---	---	20	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ecological Health	ANZG 2018 95% Species Protection - Marine Water	700	180	80	75	350	---	---	5-	---	---	---	---	---	---	---	---	---	---	---	---

Lab Report	Field ID	Date	Sample Type																		
EP2210465	B-015B_220816	16/08/2022	Normal	<1	<2	<2	<2	<2	<2	<1	<0.005	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
EP2210465	MW1_220816	16/08/2022	Normal	<1	<2	<2	<2	<2	<2	<1	<0.005	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100
EP2210465	MW2_220816	16/08/2022	Normal	<1	<2	<2	<2	<2	<2	<1	<0.005	<20	<50	<100	<50	<50	<20	<20	<100	<100	<100	<100	<100

Notes

[1] ANZG 2018 95% Species Protection - Freshwater criteria applied.
[2] ANZG 2018 95% Species Protection - Freshwater criteria based on conservative m-xylene value of 75 µg/L (p-xylene = 200 µg/L).
--- Tier 1 assessment criteria not available.
- Laboratory analysis not completed.
Grey Reported below laboratory limit of reporting (LOR).
Bold Concentration above laboratory LOR reported.
Concentration reported exceeds relevant Tier 1 assessment criteria.

Abbreviations:

ANZG = Australian & New Zealand Guidelines for Fresh & Marine Water Quality
ASC NEPM = *National Environment Protection (Assessment of Site Contamination) Measure 1999* (amended 2013)
BTEXN = benzene, toluene, ethylbenzene, xylene, and naphthalene
D = commercial/industrial
DoH = Department of Health
HSL = Health Screening Level
L = litre
m = metre
µg = microgram
TPH = total petroleum hydrocarbons
TRH = total recoverable hydrocarbons
VOC = Volatile Organic Compound
WA = Western Australia

Table G9 Groundwater Analytical Results (PAH)
Environmental Baseline Assessment: Bulk Liquid Storage Facility
Quantem
Project ID: P521420

		PAH																	
		Acenaphthene	Acenaphthylene	Anthracene[1]	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene[1]	Benzo(a)pyrene TEQ calc (Zero)	Benzo(b+j)fluoranthene	Phenanthrene	Pyrene	PAHs (Sum of total)
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	EQL	1	1	1	1	0.5	1	1	1	1	1	1	1	1	0.5	1	1	1	0.5
Human health	ASC NEPM Table 1A(4) HSL-D (commercial/industrial) or vapour intrusion, Sand, Groundwater at >=4 m, < 8m bgl	---	---	---	---	---	---	---	---	---	---	---	---	NL	---	---	---	---	---
	WA DoH Non-Potable Groundwater Use (NPUG)	---	---	---	---	0.1	---	---	---	---	---	---	---	---	---	---	---	---	---
Ecological Health	ANZG 2018 95% Species Protection - Marine Water	---	---	0.4	---	0.2	---	---	---	---	1.4	---	---	70	---	---	2	---	---
Lab Report	Field ID	Date	Sample Type																
EP2210465	B-015B_220816	16/08/2022	Normal	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5
EP2210465	MW1_220816	16/08/2022	Normal	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5
EP2210465	MW2_220816	16/08/2022	Normal	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<0.5	<1.0	<1.0	<1.0	<0.5

Notes

[1] ANZG 2018 95% Species Protection - Marine Water applied, per guidance, as bioaccummulation data is not available.
--- Tier 1 assessment criteria not available.
- Laboratory analysis not completed.
Grey Reported below laboratory limit of reporting (LOR).
Bold Concentration above laboratory LOR reported.
Concentration reported exceeds relevant Tier 1 assessment criteria.

Abbreviations:

ANZG = Australian & New Zealand Guidelines for Fresh & Marine Water Quality
ASC NEPM = *National Environment Protection (Assessment of Site Contamination) Measure 1999* (amended 2013)
D = commercial/industrial
L = litre
m = metre
µg = microgram
PAH = polycyclic aromatic hydrocarbons
TEQ = toxic equivalent
WA = Western Australia

Table G10 Groundwater Analytical Results (Phenols and Cyanide)
Environmental Baseline Assessment: Bulk Liquid Storage Facility
Quantem
Project ID: P521420

		Phenols													Cyanides
		2,6-D	2-Chlorophenol	4-chloro-3-methylphenol	2,4-Dichlorophenol	2,6-Dichlorophenol[1]	2,4-Dimethylphenol[1]	2-Methylphenol	2-Nitrophenol	Pentachlorophenol	Phenol[2]	Picloram	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	Cyanide (WAD)
	Units	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	mg/L
	EQL	0.01	1	1	1	1	1	1	1	2	1	10	1	1	0.004
Human health	WA DoH Non-Potable Groundwater Use (NPUG)	---	3,000	---	2,000	---	---	---	---	---	---	---	---	200	---
Ecological Health	ANZG 2018 95% Species Protection - Marine Water	---	340	---	120	34	2	---	---	22	400	---	---	3	---
Lab Report	Field ID	Date	Sample Type												
EP2210465	B-015B_220816	16/08/2022	Normal	<0.01	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<10	<1.0	<1.0	<0.004
EP2210465	MW1_220816	16/08/2022	Normal	<0.01	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<10	<1.0	<1.0	<0.004
EP2210465	MW2_220816	16/08/2022	Normal	<0.01	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<2.0	<1.0	<10	<1.0	<1.0	<0.004

Notes

[1] Unknown species protection level provided in guidance
[2] ANZG 2018 95% Species Protection - Marine Water applied.
--- Tier 1 assessment criteria not available.
- Laboratory analysis not completed.
Grey Reported below laboratory limit of reporting (LOR).
Bold Concentration above laboratory LOR reported.
Concentration reported exceeds relevant Tier 1 assessment criteria.

Abbreviations:

ANZG = Australian & New Zealand Guidelines for Fresh & Marine Water Quality
ASC NEPM = *National Environment Protection (Assessment of Site Contamination) Measure 1999* (amended 2013)
CRWQCB = California Regional Water Quality Control Board
bgl = below ground level
D = commercial/industrial
L = litre
m = metre
µg = microgram
PAH = polycyclic aromatic hydrocarbons
TEQ = toxic equivalent
WA = Western Australia

Table G11 Groundwater Analytical Results (PFAS)
Environmental Baseline Assessment: Bulk Liquid Storage Facility
Quantem
Project ID: P521420

aurecon

		PFAS																																					
		Perfluorooctanoic acid (PFOA)	Perfluorooctanesulfonic acid (PFOS)	Perfluorohexane sulfonic acid (PFHxS)	Sum of PFHxS and PFOS	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	N-Ethyl perfluorooctane sulfonamide	N-ethyl-perfluorooctanesulfonamidoacetic acid	N-ethylperfluorooctanesulfonamidoethanol	N-Methyl perfluorooctane sulfonamide	N-methylperfluorooctanesulfonamidoacetic	N-Methylperfluorooctanesulfonamidoethanol	Perfluorobutane sulfonic acid (PFBS)	Perfluorobutanoic acid (PFBA)	Perfluorodecanesulfonic acid (PFDS)	Perfluorodecanoic acid (PFDA)	Perfluorododecanoic acid (PFDoDA)	Perfluoroheptane sulfonic acid (PFHpS)	Perfluoroheptanoic acid (PFHpA)	Perfluorohexanoic acid (PFHxA)	Perfluorononanoic acid (PFNA)	Perfluorooctane sulfonamide (PFOSA)	Perfluoropentane sulfonic acid (PFPeS)	Perfluoropentanoic acid (PFPeA)	Perfluorotetradecanoic acid (PFTeDA)	Perfluorotridecanoic acid (PFTrDA)	Perfluoroundecanoic acid (PFUnDA)	Sum of PFAS (WA DER List)_	Sum of PFAS
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
	EQL	0.01	0.01	0.01	0.01	0.05	0.05	0.00005	0.00005	0.05	0.02	0.05	0.05	0.02	0.05	0.02	0.1	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.05	0.02	0.02	0.01	0.01
Human health	PFAS NEMP Table 1 Recreational water quality guideline value	10	2	2	2	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ecological Health	PFAS NEMP Table 5 99% species protection - Marine waters - high conservation value systems[1]	19	0.00023	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
	PFAS NEMP Table 5 95% species protection - Marine waters - slightly to moderately disturbed systems	220	0.13	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lab Report	**Field ID**	**Date**	**Sample Type**																																				
EP2210465	B-015B_220816	16/08/2022	Normal	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.00005	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
EP2210465	MW1_220816	16/08/2022	Normal	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.00005	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01
EP2210465	MW2_220816	16/08/2022	Normal	<0.01	<0.01	<0.01	<0.01	<0.05	<0.05	<0.00005	<0.00005	<0.05	<0.02	<0.05	<0.05	<0.02	<0.05	<0.02	<0.1	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.05	<0.02	<0.02	<0.01	<0.01

Notes

[1] ANZG 2018 recommends the use of the 99% species protection level for slightly to moderately disturbed systems where the chemical of potential concern bioaccumulates or biomagnifies in wildlife.
--- Tier 1 assessment criteria not available.
- Laboratory analysis not completed.
Grey Reported below laboratory limit of reporting (LOR).
Bold Concentration above laboratory LOR reported.
Concentration reported exceeds relevant Tier 1 assessment criteria.

Abbreviations:

L = litre
µg = microgram
PFAS = per- and polyfluoroalkyl substances
PFAS NEMP = *PFAS National Environmental Management Plan*, v. 2, January 2020

Table G12 Groundwater Analytical Results (Metals)
Environmental Baseline Assessment: Bulk Liquid Storage Facility
Quantem
Project ID: P521420

		Metals																		
		Aluminium	Arsenic[1]	Barium	Beryllium	Boron	Cadmium	Chromium (III+VI)[2]	Chromium (hexavalent)	Cobalt	Copper	Lead	Manganese	Mercury	Molybdenum	Nickel	Silver	Selenium[3]	Vanadium	Zinc
	Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	EQL	0.01	0.001	0.001	0.001	0.05	0.0001	0.001	0.01	0.001	0.001	0.001	0.001	0.0001	0.001	0.001	0.001	0.01	0.01	0.005
Human health	WA DoH Non-Potable Groundwater Use (NPUG)	---	0.1	20	0.6	40	0.02	---	---	0.5	1	0.1	5	0.01	---	0.2	---	0.1	---	3
Ecological Health	ANZG 2018 95% Species Protection - Marine Water[2]	---	0.0023	---	---	---	0.0055	---	0.0044	0.001	0.0013	0.0044	0.08	0.0004	---	0.07	0.0014	0.003	0.1	0.015

Lab Report	Field ID	Date	Sample Type																	
EP2210465	B-015B_220816	16/08/2022	Normal	**0.01**	<0.001	**0.06**	<0.001	<0.05	<0.0001	**0.002**	<0.01	<0.001	**0.001**	**0.001**	**0.001**	<0.0001	**0.008**	**0.002**	<0.001	<0.01	<0.01	<0.005
EP2210465	MW1_220816	16/08/2022	Normal	**0.03**	**0.006**	**0.005**	<0.001	**0.08**	<0.0001	**0.004**	<0.01	<0.001	<0.001	<0.001	**0.024**	<0.0001	**0.01**	**0.002**	<0.001	<0.01	<0.01	<0.005
EP2210465	MW2_220816	16/08/2022	Normal	**0.45**	**0.01**	**0.031**	<0.001	**0.4**	<0.0001	**0.003**	<0.01	<0.001	<0.001	<0.001	**0.154**	<0.0001	**0.008**	**0.003**	<0.001	<0.01	<0.01	<0.005

Notes:

[1] Lowest value applied based on environmental concern level for As(III) as an indicative interim working level in marine water.
[2] Based on default guideline values for Cr(VI), unspeciated value not available.
[3] Low reliability trigger value, does not consider bioaccumulation.
--- Tier 1 assessment criteria not available.
- Laboratory analysis not completed.
Grey Reported below laboratory limit of reporting (LOR).
Bold Concentration above laboratory LOR reported.
Concentration reported exceeds relevant Tier 1 assessment criteria.

Abbreviations:

ANZG = Australian & New Zealand Guidelines for Fresh & Marine Water Quality
DoH = Department of Health
L = litre
mg = milligram
WA = Western Australia

Table G13 Groundwater Analytical Results (Metals)
Environmental Baseline Assessment: Bulk Liquid Storage Facility
Quantem
Project ID: P521420

					Inorganics			Herbicides														MAH
					Cyanide Total	Fluoride	pH (Lab)	2,4,6-Trichlorophenoxy-acetic acid	2,4,5-TP (Silvex)	2,4,5-Trichlorophenoxy Acetic Acid	2,4-Dichlorprop	2-Methyl-4-Chlorophenoxy Butanoic Acid	2-Methyl-4-chlorophenoxyacetic acid	4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)	4-Chlorophenoxy acetic acid	Clopyralid	Dicamba	Fluroxypyr	Hedonal	Mecoprop	Triclopyr	Styrene
		Units			mg/L	mg/L	-	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
		EQL			0.004	0.1	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.005
Human health	WA DoH Non-Potable Groundwater Use (NPUG)				---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ecological Health	ANZG 2018 95% Species Protection - Marine Water				---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Lab Report	Field ID	Date	Sample Type																			
EP2210465	B-015B_220816	16/08/2022	Normal		<0.004	**0.3**	**8.07**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.005
EP2210465	MW1_220816	16/08/2022	Normal		<0.004	**0.6**	**7.92**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.005
EP2210465	MW2_220816	16/08/2022	Normal		<0.004	**0.4**	**7.74**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.005

Notes:

--- Tier 1 assessment criteria not available.
- Laboratory analysis not completed.
Grey Reported below laboratory limit of reporting (LOR).
Bold Concentration above laboratory LOR reported.
Concentration reported exceeds relevant Tier 1 assessment criteria.

Abbreviations:

ANZG = Australian & New Zealand Guidelines for Fresh & Marine Water Quality
DoH = Department of Health
L = litre
MAH = Monocyclic Aromatic Hydrocarbons
mg = milligram
WA = Western Australia

Table G14 Groundwater Analytical Results (OCP)
Environmental Baseline Assessment: Bulk Liquid Storage Facility
Quantem
Project ID: P521420

		Organochlorine Pesticides																							Other						SVOCs
		Aldrin + Dieldrin	Aldrin[1]	a-BHC	Chlordane (trans)[2]	Chlordane (cis)	b-BHC	d-BHC	DDD	4,4-DDE[1]	DDT	chlordane	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	TRH C10 - C14 Aliphatic	TRH C10 - C14 Aromatic	TRH C15 - C28 Aliphatic	TRH C15 - C28 Aromatic	TRH C29 - C36 Aliphatic	TRH C29 - C36 Aromatic	3/4-Methylphenol (m/p-cresol)
	Units	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
	EQL	0.5	0.5	0.5	0.5	0.5	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	0.5	0.5	2	0.05	0.05	0.1	0.1	0.05	0.05	0.002
Human health	WA DoH Non-Potable Groundwater Use (NPUG)	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Ecological Health	ANZG 2018 95% Species Protection - Marine Water	---	0.003	---	0.08	---	---	---	---	0.03	0.0004	---	---	---	---	---	---	0.008	---	---	---	---	---	---	---	---	---	---	---	---	---
Lab Report	Field ID	Date	Sample Type																												
EP2210465	B-015B_220816	16/08/2022	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<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	<0.5	<2.0	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.0020
EP2210465	MW1_220816	16/08/2022	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<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	<0.5	<2.0	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.0020
EP2210465	MW2_220816	16/08/2022	Normal	<0.5	<0.5	<0.5	<0.5	<0.5	<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	<0.5	<2.0	<0.05	<0.05	<0.1	<0.1	<0.05	<0.05	<0.0020

Notes

[1] Low reliability trigger value, does not consider bioaccumulation. Should only be used as an indicative working level.
[2] Moderate reliability trigger value, does not consider bioaccumulation. Should only be used as an indicative working level.
--- Tier 1 assessment criteria not available.
- Laboratory analysis not completed.
Grey Reported below laboratory limit of reporting (LOR).
Bold Concentration above laboratory LOR reported.
Concentration reported exceeds relevant Tier 1 assessment criteria.

Abbreviations:

ANZG = Australian & New Zealand Guidelines for Fresh & Marine Water Quality
DDD = Dichlorodiphenyldichloroethane
DDE = Dichlorodiphenyldichloroethylene
DDT = Dichlorodiphenyltrichloroethane
DoH = Department of Health
L = litre
mg = milligram
TRH = Total Recoverable Hydrocarbons
VOC = Volatile Organic Compound
WA = Western Australia

			Lab Report	EP2210465	EP2210465	RPD	PASS/FAIL	EP2210465	917053	RPD	PASS/FAIL
			Field ID	MW2_220816	QC102			MW2_220816	QC202_220816		
			Sample Type	Primary	Duplicate			Primary	Triplicate		
			Date	16/08/2022	16/08/2022			16/08/2022	16/08/2022		
		Unit	EQL								
Metals	Aluminium	mg/L	0.01	0.45	0.42	7	PASS	0.45	0.13	110	PASS-2
	Arsenic	mg/L	0.001	0.01	0.009	11	PASS	0.01	0.009	11	PASS
	Barium	mg/L	0.001	0.031	0.031	0	PASS	0.031	0.03	3	PASS
	Beryllium	mg/L	0.001	<0.001	<0.001	0	PASS	<0.001	<0.001	0	PASS
	Boron	mg/L	0.05	0.4	0.41	2	PASS	0.4	0.36	11	PASS
	Cadmium	mg/L	0.0001	<0.0001	<0.0001	0	PASS	<0.0001	<0.0001	0	PASS
	Chromium (hexavalent)	mg/L	0.002	<0.01	<0.01	0	PASS	<0.01	<0.002	0	PASS
	Cobalt	mg/L	0.001	<0.001	<0.001	0	PASS	<0.001	<0.001	0	PASS
	Copper	mg/L	0.001	<0.001	<0.001	0	PASS	<0.001	<0.001	0	PASS
	Manganese	mg/L	0.001	0.154	0.154	0	PASS	0.154	0.14	10	PASS
	Chromium (III+VI)	mg/L	0.001	0.003	0.002	40	PASS-1	0.003	0.002	40	PASS-1
	Mercury	mg/L	0.0001	<0.0001	<0.0001	0	PASS	<0.0001	<0.0001	0	PASS
	Molybdenum	mg/L	0.001	0.008	0.008	0	PASS	0.008	0.007	13	PASS
	Lead	mg/L	0.001	<0.001	<0.001	0	PASS	<0.001	<0.001	0	PASS
	Nickel	mg/L	0.001	0.003	0.002	40	PASS-1	0.003	0.002	40	PASS-1
	Tin	mg/L	0.001	-	-	-	-	-	<0.001	-	-
	Silver	mg/L	0.001	<0.001	<0.001	0	PASS	<0.001	<0.001	0	PASS
	Selenium	mg/L	0.001	<0.01	<0.01	0	PASS	<0.01	<0.001	0	PASS
	Vanadium	mg/L	0.005	<0.01	<0.01	0	PASS	<0.01	<0.005	0	PASS
	Zinc	mg/L	0.005	<0.005	<0.005	0	PASS	<0.005	<0.005	0	PASS
BTEXN	Benzene	µg/L	1	<1	<1	0	PASS	<1	<1	0	PASS
	Toluene	µg/L	1	<2	<2	0	PASS	<2	<1	0	PASS
	Ethylbenzene	µg/L	1	<2	<2	0	PASS	<2	<1	0	PASS
	Xylene (m & p)	µg/L	2	<2	<2	0	PASS	<2	<2	0	PASS
	Xylene (o)	µg/L	1	<2	<2	0	PASS	<2	<1	0	PASS
	Xylene Total	µg/L	2	<2	<2	0	PASS	<2	<3	0	PASS
	Total BTEX	µg/L	1	<1	<1	0	PASS	<1	-	-	-
	Naphthalene (VOC)	mg/L	0.001	<0.005	<0.005	0	PASS	<0.005	<0.001	0	PASS
TPH	C16-C35 Aliphatic	µg/L	200	-	-	-	-	-	<200	-	-
	TRH >C35 Aliphatic	mg/L	0.2	-	-	-	-	-	<0.2	-	-
	C16-C35 Aromatic	µg/L	90	-	-	-	-	-	<90	-	-
	C6-C9	µg/L	20	<20	<20	0	PASS	<20	<20	0	PASS
	C10-C14	µg/L	20	<50	<50	0	PASS	<50	<20	0	PASS
	C15-C28	µg/L	40	<100	<100	0	PASS	<100	80	0	PASS
	C29-C36	µg/L	40	<50	<50	0	PASS	<50	50	0	PASS
	+C10-C36 (Sum of total)	µg/L	40	<50	<50	0	PASS	<50	<100	0	PASS
TRH	C6-C10	µg/L	20	<20	<20	0	PASS	<20	<20	0	PASS
	C6-C10 (F1 minus BTEX)	µg/L	20	<20	<20	0	PASS	<20	<20	0	PASS
	C10-C16	µg/L	20	<100	<100	0	PASS	<100	<20	0	PASS
	C10-C16 (F2 minus Naphthalene)	µg/L	20	<100	<100	0	PASS	<100	<20	0	PASS
	C16-C34	µg/L	50	<100	<100	0	PASS	<100	120	18	PASS
	C34-C40	µg/L	50	<100	<100	0	PASS	<100	<50	0	PASS
	C10-C40 (Sum of total)	µg/L	50	<100	<100	0	PASS	<100	120	18	PASS
	TRH C10 - C14 Aliphatic	mg/L	0.05	<0.05	<0.05	0	PASS	<0.05	-	-	-
	TRH C10 - C14 Aromatic	mg/L	0.05	<0.05	<0.05	0	PASS	<0.05	-	-	-
	TRH C15 - C28 Aliphatic	mg/L	0.1	<0.1	<0.1	0	PASS	<0.1	-	-	-
	TRH C15 - C28 Aromatic	mg/L	0.1	<0.1	<0.1	0	PASS	<0.1	-	-	-
	TRH C29 - C36 Aliphatic	mg/L	0.05	<0.05	<0.05	0	PASS	<0.05	-	-	-
	TRH C29 - C36 Aromatic	mg/L	0.05	<0.05	<0.05	0	PASS	<0.05	-	-	-
PAH	Acenaphthene	µg/L	1	<1.0	<1.0	0	PASS	<1.0	<1	0	PASS
	Acenaphthylene	µg/L	1	<1.0	<1.0	0	PASS	<1.0	<1	0	PASS
	Anthracene	µg/L	1	<1.0	<1.0	0	PASS	<1.0	<1	0	PASS
	Benzo(a)anthracene	µg/L	1	<1.0	<1.0	0	PASS	<1.0	<1	0	PASS
	Benzo(a)pyrene	µg/L	0.5	<0.5	<0.5	0	PASS	<0.5	<1	0	PASS
	Benzo(g,h,i)perylene	µg/L	1	<1.0	<1.0	0	PASS	<1.0	<1	0	PASS
	Benzo(k)fluoranthene	µg/L	1	<1.0	<1.0	0	PASS	<1.0	<1	0	PASS
	Chrysene	µg/L	1	<1.0	<1.0	0	PASS	<1.0	<1	0	PASS
	Dibenz(a,h)anthracene	µg/L	1	<1.0	<1.0	0	PASS	<1.0	<1	0	PASS
	Fluoranthene	µg/L	1	<1.0	<1.0	0	PASS	<1.0	<1	0	PASS
	Fluorene	µg/L	1	<1.0	<1.0	0	PASS	<1.0	<1	0	PASS
	Indeno(1,2,3-c,d)pyrene	µg/L	1	<1.0	<1.0	0	PASS	<1.0	<1	0	PASS
	Benzo(a)pyrene TEQ calc (Half)	mg/L	0.001	-	-	-	-	-	0.001	-	-
	Naphthalene	µg/L	1	<1.0	<1.0	0	PASS	<1.0	<1	0	PASS
	Benzo(a)pyrene TEQ calc (Zero)	µg/L	0.5	<0.5	<0.5	0	PASS	<0.5	<1	0	PASS
	Benzo(b+j)fluoranthene	µg/L	1	<1.0	<1.0	0	PASS	<1.0	<1	0	PASS
	Phenanthrene	µg/L	1	<1.0	<1.0	0	PASS	<1.0	<1	0	PASS
	Pyrene	µg/L	1	<1.0	<1.0	0	PASS	<1.0	<1	0	PASS
	PAHs (Sum of total)	µg/L	0.5	<0.5	<0.5	0	PASS	<0.5	<1	0	PASS
Phenols	2,6-D	mg/L	0.01	<0.01	<0.01	0	PASS	<0.01	-	-	-
	4,6-Dinitro-o-cyclohexyl phenol	µg/L	100	-	-	-	-	-	<100	-	-
	Cresol Total	mg/L	0.01	-	-	-	-	-	<0.01	-	-
	Phenols (Total Halogenated)	mg/L	0.01	-	-	-	-	-	<0.01	-	-
	Phenols (Total Non Halogenated)	mg/L	0.1	-	-	-	-	-	<0.1	-	-
	Picloram	µg/L	10	<10	<10	0	PASS	<10	-	-	-
	Tetrachlorophenols	µg/L	30	-	-	-	-	-	<30	-	-
	2,4,5-Trichlorophenol	µg/L	1	<1.0	<1.0	0	PASS	<1.0	<10	0	PASS
	2,6-Dichlorophenol	µg/L	1	<1.0	<1.0	0	PASS	<1.0	<3	0	PASS
	2,4,6-Trichlorophenol	µg/L	1	<1.0	<1.0	0	PASS	<1.0	<10	0	PASS
	2,4-Dichlorophenol	µg/L	1	<1.0	<1.0	0	PASS	<1.0	<3	0	PASS
	2,4-Dimethylphenol	µg/L	1	<1.0	<1.0	0	PASS	<1.0	<3	0	PASS
	2-Chlorophenol	µg/L	1	<1.0	<1.0	0	PASS	<1.0	<3	0	PASS
	2-Methylphenol	µg/L	1	<1.0	<1.0	0	PASS	<1.0	<3	0	PASS
	2-Nitrophenol	µg/L	1	<1.0	<1.0	0	PASS	<1.0	<10	0	PASS
	4-chloro-3-methylphenol	µg/L	1	<1.0	<1.0	0	PASS	<1.0	<10	0	PASS
	4-Nitrophenol	µg/L	30	-	-	-	-	-	<30	-	-
	Pentachlorophenol	µg/L	2	<2.0	<2.0	0	PASS	<2.0	<10	0	PASS
	Phenol	µg/L	1	<1.0	<1.0	0	PASS	<1.0	<3	0	PASS
	2,4-Dinitrophenol	mg/L	0.03	-	-	-	-	-	<0.03	-	-
	4,6-Dinitro-2-methylphenol	µg/L	30	-	-	-	-	-	<30	-	-
Cyanides	Cyanide (WAD)	mg/L	0.004	<0.004	<0.004	0	PASS	<0.004	<0.005	0	PASS
OCP	Organochlorine pesticides EPAVic	ug/L	2	-	-	-	-	-	<2	-	-
	Other organochlorine pesticides EPAVic	ug/L	2	-	-	-	-	-	<2	-	-
PFAS	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	UG/L	0.01	-	-	-	-	-	<0.01	-	-
	Sum of PFAS (WA DER List)	µg/L	0.01	<0.01	<0.01	0	PASS	<0.01	<0.05	0	PASS
	Sum of US EPA PFAS (PFOS + PFOA)*	UG/L	0.01	-	-	-	-	-	<0.01	-	-
	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.01	<0.05	<0.05	0	PASS	<0.05	<0.01	0	PASS
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.01	<0.05	<0.05	0	PASS	<0.05	<0.01	0	PASS
	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	mg/L	0.00005	<0.00005	<0.00005	0	PASS	<0.00005	<0.00005	0	PASS
	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	mg/L	0.00001	<0.00005	<0.00005	0	PASS	<0.00005	<0.00001	0	PASS
	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	µg/L	0.05	<0.05	<0.05	0	PASS	<0.05	<0.05	0	PASS
	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	µg/L	0.02	<0.02	<0.02	0	PASS	<0.02	<0.05	0	PASS
	N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	µg/L	0.05	<0.05	<0.05	0	PASS	<0.05	<0.05	0	PASS
	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	µg/L	0.05	<0.05	<0.05	0	PASS	<0.05	<0.05	0	PASS
	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	µg/L	0.02	<0.02	<0.02	0	PASS	<0.02	<0.05	0	PASS
	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	µg/L	0.05	<0.05	<0.05	0	PASS	<0.05	<0.05	0	PASS
	Perfluorobutane sulfonic acid (PFBS)	µg/L	0.01	<0.02	<0.02	0	PASS	<0.02	<0.01	0	PASS
	Perfluorobutanoic acid (PFBA)	µg/L	0.05	<0.1	<0.1	0	PASS	<0.1	<0.05	0	PASS
	Perfluorodecanesulfonic acid (PFDS)	µg/L	0.01	<0.02	<0.02	0	PASS	<0.02	<0.01	0	PASS
	Perfluorodecanoic acid (PFDA)	µg/L	0.01	<0.02	<0.02	0	PASS	<0.02	<0.01	0	PASS
	Perfluorododecanoic acid (PFDoDA)	µg/L	0.01	<0.02	<0.02	0	PASS	<0.02	<0.01	0	PASS
	Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.01	<0.02	<0.02	0	PASS	<0.02	<0.01	0	PASS
	Perfluoroheptanoic acid (PFHpA)	µg/L	0.01	<0.02	<0.02	0	PASS	<0.02	<0.01	0	PASS
	Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01	<0.01	0	PASS	<0.01	<0.01	0	PASS
	Perfluorohexanoic acid (PFHxA)	µg/L	0.01	<0.02	<0.02	0	PASS	<0.02	<0.01	0	PASS
	Perfluorononanoic acid (PFNA)	µg/L	0.01	<0.02	<0.02	0	PASS	<0.02	<0.01	0	PASS
	Perfluorononanesulfonic acid (PFNS)(trace)	µg/L	0.01	-	-	-	-	-	<0.01	-	-
	Perfluorooctane sulfonamide (PFOSA)	µg/L	0.02	<0.02	<0.02	0	PASS	<0.02	<0.05	0	PASS
	Perfluorooctanesulfonic acid (PFOS)	µg/L	0.01	<0.01	<0.01	0	PASS	<0.01	<0.01	0	PASS
	Perfluorooctanoic acid (PFOA)	µg/L	0.01	<0.01	<0.01	0	PASS	<0.01	<0.01	0	PASS
	Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.01	<0.02	<0.02	0	PASS	<0.02	<0.01	0	PASS
	Perfluoropentanoic acid (PFPeA)	µg/L	0.01	<0.02	<0.02	0	PASS	<0.02	<0.01	0	PASS
	Perfluoropropanesulfonic acid (PFPrS)	mg/L	0.00001	-	-	-	-	-	<0.00001	-	-
	Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.01	<0.05	<0.05	0	PASS	<0.05	<0.01	0	PASS
	Perfluorotridecanoic acid (PFTrDA)	µg/L	0.01	<0.02	<0.02	0	PASS	<0.02	<0.01	0	PASS
	Perfluoroundecanoic acid (PFUnDA)	µg/L	0.01	<0.02	<0.02	0	PASS	<0.02	<0.01	0	PASS
	Sum of PFAS	µg/L	0.01	<0.01	<0.01	0	PASS	<0.01	<0.1	0	PASS
	Sum of PFHxS and PFOS	µg/L	0.01	<0.01	<0.01	0	PASS	<0.01	<0.01	0	PASS
PCBs	PCBs (Sum of total)	µg/L	1	<1	<1	0	PASS	<1	-	-	-
Halogenated Benzenes	Hexachlorobenzene	µg/L	0.2	<0.5	<0.5	0	PASS	<0.5	<0.2	0	PASS
Inorganics	Cyanide Total	mg/L	0.004	<0.004	<0.004	0	PASS	<0.004	<0.005	0	PASS
	Fluoride	mg/L	0.1	0.4	-	-	-	0.4	0.7	55	PASS-1
	pH (Lab)	-	0.01	7.74	-	-	-	7.74	7.9	2	PASS
Herbicides	2,4,6-Trichlorophenoxy-acetic acid	mg/L	0.01	<0.01	<0.01	0	PASS	<0.01	<0.0001	0	PASS
	2,4,5-TP (Silvex)	mg/L	0.01	<0.01	<0.01	0	PASS	<0.01	-	-	-
	2,4,5-Trichlorophenoxy Acetic Acid	mg/L	0.01	<0.01	<0.01	0	PASS	<0.01	<0.0001	0	PASS
	2,4-Dichlorprop	mg/L	0.01	<0.01	<0.01	0	PASS	<0.01	<0.0001	0	PASS
	2-Methyl-4-Chlorophenoxy Butanoic Acid	µg/L	10	<10	<10	0	PASS	<10	-	-	-
	2-Methyl-4-chlorophenoxyacetic acid	µg/L	10	<10	<10	0	PASS	<10	-	-	-
	4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)	µg/L	10	<10	<10	0	PASS	<10	-	-	-
	4-Chlorophenoxy acetic acid	mg/L	0.01	<0.01	<0.01	0	PASS	<0.01	-	-	-
	Clopyralid	µg/L	10	<10	<10	0	PASS	<10	<0.4	0	PASS
	Dicamba	µg/L	10	<10	<10	0	PASS	<10	<0.1	0	PASS
	Dinoseb	µg/L	100	-	-	-	-	-	<100	-	-
	Fluroxypyr	µg/L	10	<10	<10	0	PASS	<10	-	-	-
	Hedonal	mg/L	0.01	<0.01	<0.01	0	PASS	<0.01	-	-	-
	Mecoprop	µg/L	10	<10	<10	0	PASS	<10	-	-	-
	Triclopyr	mg/L	0.01	<0.01	<0.01	0	PASS	<0.01	<0.0001	0	PASS
MAH	Styrene	µg/L	5	<5	<5	0	PASS	<5	<0.5	0	PASS
Organochlorine Pesticides	Aldrin + Dieldrin	µg/L	0.2	<0.5	<0.5	0	PASS	<0.5	<0.2	0	PASS
	4,4-DDE	µg/L	0.2	<0.5	<0.5	0	PASS	<0.5	<0.2	0	PASS
	a-BHC	µg/L	0.2	<0.5	<0.5	0	PASS	<0.5	<0.2	0	PASS
	Chlordane (cis)	µg/L	0.5	<0.5	<0.5	0	PASS	<0.5	-	-	-
	Aldrin	µg/L	0.2	<0.5	<0.5	0	PASS	<0.5	<0.2	0	PASS
	Chlordane (trans)	µg/L	0.5	<0.5	<0.5	0	PASS	<0.5	-	-	-
	b-BHC	µg/L	0.2	<0.5	<0.5	0	PASS	<0.5	<0.2	0	PASS
	d-BHC	µg/L	0.2	<0.5	<0.5	0	PASS	<0.5	<0.2	0	PASS
	DDD	µg/L	0.2	<0.5	<0.5	0	PASS	<0.5	<0.2	0	PASS
	DDT	µg/L	0.2	<2.0	<2.0	0	PASS	<2.0	<0.2	0	PASS
	Chlordane	µg/L	0.5	<0.5	<0.5	0	PASS	<0.5	<2	0	PASS
	DDT+DDE+DDD	µg/L	0.2	<0.5	<0.5	0	PASS	<0.5	<0.2	0	PASS
	Dieldrin	µg/L	0.2	<0.5	<0.5	0	PASS	<0.5	<0.2	0	PASS
	Endosulfan I	µg/L	0.2	<0.5	<0.5	0	PASS	<0.5	<0.2	0	PASS
	Endosulfan II	µg/L	0.2	<0.5	<0.5	0	PASS	<0.5	<0.2	0	PASS
	Endosulfan sulphate	µg/L	0.2	<0.5	<0.5	0	PASS	<0.5	<0.2	0	PASS
	Endrin	µg/L	0.2	<0.5	<0.5	0	PASS	<0.5	<0.2	0	PASS
	Endrin aldehyde	µg/L	0.2	<0.5	<0.5	0	PASS	<0.5	<0.2	0	PASS
	Endrin ketone	µg/L	0.2	<0.5	<0.5	0	PASS	<0.5	<0.2	0	PASS
	g-BHC (Lindane)	µg/L	0.2	<0.5	<0.5	0	PASS	<0.5	<0.2	0	PASS
	Heptachlor	µg/L	0.2	<0.5	<0.5	0	PASS	<0.5	<0.2	0	PASS
	Toxaphene	mg/L	0.005	-	-	-	-	-	<0.005	-	-
	Heptachlor epoxide	µg/L	0.2	<0.5	<0.5	0	PASS	<0.5	<0.2	0	PASS
	Methoxychlor	µg/L	0.2	<2.0	<2.0	0	PASS	<2.0	<0.2	0	PASS
SVOCs	3/4-Methylphenol (m/p-cresol)	mg/L	0.002	<0.0020	<0.0020	0	PASS	<0.0020	<0.006	0	PASS

*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: 10 (1 - 10 x EQL); 30 (10 - 20 x EQL); 50 (> 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 those used in the primary laboratory

Relative Percentage Difference - Soil Analysis
Environmental Baseline Assessment: Bulk Liquid Storage Facility
Quantem
Project ID: PS21420

			Lab Report	EP2209615	EP2209615	RPD	PASS / FAIL	EP2209615	910148	RPD	PASS / FAIL	EP2209615	EP2209615	RPD	PASS / FAIL	EP2209615	910148	RPD	PASS / FAIL
			Field ID	BH02_0-0.1	QC101			BH02_0-0.1	QC201			BH06_0.5-1.0	QC102			BH06_0.5-1.0	QC202		
			Date	28/07/2022	29/07/2022			28/07/2022	28/07/2022			29/07/2022	28/07/2022			29/07/2022	29/07/2022		
			Sample Type	Normal	Duplicate			Normal	Triplicate			Normal	Duplicate			Normal	Triplicate		
		Units	EQL																
Metals	Aluminium	mg/kg	20	1,390	860	47	FAIL-2	1,390	1,300	7	PASS	4,040	-	-	-	4,040	-	-	-
	Arsenic	mg/kg	2	<5	<5	0	PASS	<5	<2	0	PASS	<5	-	-	-	<5	-	-	-
	Barium	mg/kg	10	<10	<10	0	PASS	<10	<10	0	PASS	20	-	-	-	20	-	-	-
	Beryllium	mg/kg	1	<1	<1	0	PASS	<1	<2	0	PASS	<1	-	-	-	<1	-	-	-
	Boron	mg/kg	10	<50	<50	0	PASS	<50	<10	0	PASS	<50	-	-	-	<50	-	-	-
	Cadmium	mg/kg	0.1	<0.1	<0.1	0	PASS	<0.1	<0.4	0	PASS	<0.1	-	-	-	<0.1	-	-	-
	Chromium (hexavalent)	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<1	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	Cobalt	mg/kg	2	<2	<2	0	PASS	<2	<5	0	PASS	3	-	-	-	3	-	-	-
	Copper	mg/kg	5	<5	<5	0	PASS	<5	<5	0	PASS	<5	-	-	-	<5	-	-	-
	Lead	mg/kg	0.1	9.2	7.5	20	PASS	9.2	<5	59	PASS-1	3.6	-	-	-	3.6	-	-	-
	Manganese	mg/kg	5	20	16	22	PASS	20	35	55	PASS-1	125	-	-	-	125	-	-	-
	Mercury	mg/kg	0.1	<0.1	<0.1	0	PASS	<0.1	<0.1	0	PASS	<0.1	-	-	-	<0.1	-	-	-
	Molybdenum	mg/kg	2	<2	<2	0	PASS	<2	<5	0	PASS	<2	-	-	-	<2	-	-	-
	Nickel	mg/kg	2	<2	<2	0	PASS	<2	<5	0	PASS	3	-	-	-	3	-	-	-
	Silver	mg/kg	2	<2	<2	0	PASS	<2	<2	0	PASS	<2	-	-	-	<2	-	-	-
	Selenium	mg/kg	1	<1	<1	0	PASS	<1	<2	0	PASS	<1	-	-	-	<1	-	-	-
	Vanadium	mg/kg	5	6	<5	18	PASS	6	<10	0	PASS	17	-	-	-	17	-	-	-
	Zinc	mg/kg	5	13	10	26	PASS	13	<5	89	PASS-1	<5	-	-	-	<5	-	-	-
BTEXN	Benzene	mg/kg	0.1	<0.2	<0.2	0	PASS	<0.2	<0.1	0	PASS	<0.2	-	-	-	<0.2	-	-	-
	Toluene	mg/kg	0.1	<0.5	<0.5	0	PASS	<0.5	<0.1	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	Ethylbenzene	mg/kg	0.1	<0.5	<0.5	0	PASS	<0.5	<0.1	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	Xylene (m & p)	mg/kg	0.2	<0.5	<0.5	0	PASS	<0.5	<0.2	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	Xylene (o)	mg/kg	0.1	<0.5	<0.5	0	PASS	<0.5	<0.1	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	Xylene Total	mg/kg	0.3	<0.5	<0.5	0	PASS	<0.5	<0.3	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	Total BTEX	mg/kg	0.2	<0.2	<0.2	0	PASS	<0.2	-	-	-	<0.2	-	-	-	<0.2	-	-	-
	Naphthalene (VOC)	mg/kg	0.5	<1	<1	0	PASS	<1	<0.5	0	PASS	<1	-	-	-	<1	-	-	-
TPH	C16-C35 Aliphatic	mg/kg	100	<100	<100	0	PASS	<100	<180	0	PASS	<100	-	-	-	<100	-	-	-
	TRH >C35 Aliphatic	mg/kg	100	<100	<100	0	PASS	<100	<180	0	PASS	<100	-	-	-	<100	-	-	-
	C16-C35 Aromatic	mg/kg	90	<90	<90	0	PASS	<90	<90	0	PASS	<90	-	-	-	<90	-	-	-
	>C35 Aromatic	mg/kg	100	<100	<100	0	PASS	<100	-	-	-	<100	-	-	-	<100	-	-	-
	C6-C9	mg/kg	10	<10	<10	0	PASS	<10	<20	0	PASS	<10	-	-	-	<10	-	-	-
	C10-C14	mg/kg	20	<50	<50	0	PASS	<50	<20	0	PASS	<50	-	-	-	<50	-	-	-
	C15-C28	mg/kg	50	<100	<100	0	PASS	<100	<50	0	PASS	<100	-	-	-	<100	-	-	-
	C29-C36	mg/kg	50	<100	<100	0	PASS	<100	<50	0	PASS	<100	-	-	-	<100	-	-	-
	+C10-C36 (Sum of total)	mg/kg	50	<50	<50	0	PASS	<50	<50	0	PASS	<50	-	-	-	<50	-	-	-
TRH	C6-C10	mg/kg	10	<10	<10	0	PASS	<10	<20	0	PASS	<10	-	-	-	<10	-	-	-
	C6-C10 (F1 minus BTEX)	mg/kg	10	<10	<10	0	PASS	<10	<20	0	PASS	<10	-	-	-	<10	-	-	-
	C10-C16	mg/kg	50	<50	<50	0	PASS	<50	<50	0	PASS	<50	-	-	-	<50	-	-	-
	C10-C16 (F2 minus Naphthalene)	mg/kg	50	<50	<50	0	PASS	<50	<50	0	PASS	<50	-	-	-	<50	-	-	-
	C16-C34	mg/kg	100	<100	<100	0	PASS	<100	<100	0	PASS	<100	-	-	-	<100	-	-	-
	C34-C40	mg/kg	100	<100	<100	0	PASS	<100	<100	0	PASS	<100	-	-	-	<100	-	-	-
	C10-C40 (Sum of total)	mg/kg	50	<50	<50	0	PASS	<50	<100	0	PASS	<50	-	-	-	<50	-	-	-
PAH	Acenaphthene	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	Acenaphthylene	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	Anthracene	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	Benzo(a)anthracene	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	Benzo(a)pyrene	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	Chrysene	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	Fluoranthene	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	Fluorene	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5	0.6	0.6	0	PASS	0.6	0.6	0	PASS	0.6	-	-	-	0.6	-	-	-
	Naphthalene	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	Benzo(a)pyrene TEQ (LOR)	mg/kg	0.5	1.2	1.2	0	PASS	1.2	1.2	0	PASS	1.2	-	-	-	1.2	-	-	-
	Benzo(b+j)fluoranthene	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	Phenanthrene	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	Pyrene	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	PAHs (Sum of total)	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	-	-	-	<0.5	-	-	-
Phenols	Phenolics Total	mg/kg	1	<1	<1	0	PASS	<1	-	-	-	<1	-	-	-	<1	-	-	-
	2,4,5-Trichlorophenol	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<1	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	2,6-Dichlorophenol	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	2,4,6-Trichlorophenol	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<1	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	2,4-Dichlorophenol	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	2,4-Dimethylphenol	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	2-Chlorophenol	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	2-Methylphenol	mg/kg	0.2	<0.5	<0.5	0	PASS	<0.5	<0.2	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	2-Nitrophenol	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<1	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	4-chloro-3-methylphenol	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<1	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	4-Nitrophenol	mg/kg	5	-	-	-	-	-	<5	-	-	-	-	-	-	-	-	-	-
	Pentachlorophenol	mg/kg	1	<2	<2	0	PASS	<2	<1	0	PASS	<2	-	-	-	<2	-	-	-
	Phenol	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	-	-	-	<0.5	-	-	-
	2,4-Dinitrophenol	mg/kg	5	-	-	-	-	-	<5	-	-	-	-	-	-	-	-	-	-
	4,6-Dinitro-2-methylphenol	mg/kg	0.5	-	-	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-
Cyanides	Cyanide (WAD)	mg/kg	1	<1	<1	0	PASS	<1	<5	0	PASS	<1	-	-	-	<1	-	-	-
PFAS	Sum of PFAS (WA DER List)	mg/kg	0.0002	<0.0002	<0.0002	0	PASS	<0.0002	<0.0002	0	PASS	<0.0002	<0.0002	0	PASS	<0.0002	<0.0002	0	PASS
	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS
	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	µg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS
	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS
	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	µg/kg	0.4	<0.5	<0.5	0	PASS	<0.5	<0.4	0	PASS	<0.5	<0.5	0	PASS	<0.5	<0.4	0	PASS
	N-ethyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	µg/kg	0.2	<0.2	<0.2	0	PASS	<0.2	-	-	-	<0.2	<0.2	0	PASS	<0.2	-	-	-
	N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	µg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.8	0	PASS	<0.5	<0.5	0	PASS	<0.5	<0.8	0	PASS
	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	µg/kg	0.4	<0.5	<0.5	0	PASS	<0.5	<0.4	0	PASS	<0.5	<0.5	0	PASS	<0.5	<0.4	0	PASS
	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	µg/kg	0.2	<0.2	<0.2	0	PASS	<0.2	<0.4	0	PASS	<0.2	<0.2	0	PASS	<0.2	<0.4	0	PASS
	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	µg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.8	0	PASS	<0.5	<0.5	0	PASS	<0.5	<0.8	0	PASS
	Perfluorobutane sulfonic acid (PFBS)	µg/kg	0.2	<0.2	<0.2	0	PASS	<0.2	<0.4	0	PASS	<0.2	<0.2	0	PASS	<0.2	<0.4	0	PASS
	Perfluorobutanoic acid (PFBA)	µg/kg	0.8	<1	<1	0	PASS	<1	<0.8	0	PASS	<1	<1	0	PASS	<1	<0.8	0	PASS
	Perfluorodecanesulfonic acid (PFDS)	µg/kg	0.2	<0.2	<0.2	0	PASS	<0.2	<0.4	0	PASS	<0.2	<0.2	0	PASS	<0.2	<0.4	0	PASS
	Perfluorodecanoic acid (PFDA)	µg/kg	0.2	<0.2	<0.2	0	PASS	<0.2	<0.2	0	PASS	<0.2	<0.2	0	PASS	<0.2	<0.2	0	PASS
	Perfluorododecanoic acid (PFDoDA)	µg/kg	0.2	<0.2	<0.2	0	PASS	<0.2	<0.2	0	PASS	<0.2	<0.2	0	PASS	<0.2	<0.2	0	PASS
	Perfluoroheptane sulfonic acid (PFHpS)	µg/kg	0.2	<0.2	<0.2	0	PASS	<0.2	<0.4	0	PASS	<0.2	<0.2	0	PASS	<0.2	<0.4	0	PASS
	Perfluoroheptanoic acid (PFHpA)	µg/kg	0.2	<0.2	<0.2	0	PASS	<0.2	<0.8	0	PASS	<0.2	<0.2	0	PASS	<0.2	<0.8	0	PASS
	Perfluorohexane sulfonic acid (PFHxS)	µg/kg	0.2	<0.2	<0.2	0	PASS	<0.2	<0.4	0	PASS	<0.2	<0.2	0	PASS	<0.2	<0.4	0	PASS
	Perfluorohexanoic acid (PFHxA)	µg/kg	0.2	<0.2	<0.2	0	PASS	<0.2	<0.4	0	PASS	<0.2	<0.2	0	PASS	<0.2	<0.4	0	PASS
	Perfluorononanoic acid (PFNA)	µg/kg	0.2	<0.2	<0.2	0	PASS	<0.2	<0.2	0	PASS	<0.2	<0.2	0	PASS	<0.2	<0.2	0	PASS
	Perfluorooctane sulfonamide (PFOSA)	µg/kg	0.2	<0.2	<0.2	0	PASS	<0.2	<0.4	0	PASS	<0.2	<0.2	0	PASS	<0.2	<0.4	0	PASS
	Perfluorooctanesulfonic acid (PFOS)	µg/kg	0.2	<0.2	<0.2	0	PASS	<0.2	<0.4	0	PASS	<0.2	<0.2	0	PASS	<0.2	<0.4	0	PASS
	Perfluorooctanoic acid (PFOA)	mg/kg	0.0002	<0.0002	<0.0002	0	PASS	<0.0002	<0.0002	0	PASS	<0.0002	<0.0002	0	PASS	<0.0002	<0.0002	0	PASS
	Perfluoropentane sulfonic acid (PFPeS)	µg/kg	0.2	<0.2	<0.2	0	PASS	<0.2	<0.4	0	PASS	<0.2	<0.2	0	PASS	<0.2	<0.4	0	PASS
	Perfluoropentanoic acid (PFPeA)	µg/kg	0.2	<0.2	<0.2	0	PASS	<0.2	<0.2	0	PASS	<0.2	<0.2	0	PASS	<0.2	<0.2	0	PASS
	Perfluorotetradecanoic acid (PFTeDA)	µg/kg	0.2	<0.5	<0.5	0	PASS	<0.5	<0.2	0	PASS	<0.5	<0.5	0	PASS	<0.5	<0.2	0	PASS
	Perfluorotridecanoic acid (PFTrDA)	µg/kg	0.2	<0.2	<0.2	0	PASS	<0.2	<0.2	0	PASS	<0.2	<0.2	0	PASS	<0.2	<0.2	0	PASS
	Perfluoroundecanoic acid (PFUnDA)	µg/kg	0.2	<0.2	<0.2	0	PASS	<0.2	<0.2	0	PASS	<0.2	<0.2	0	PASS	<0.2	<0.2	0	PASS
	Sum of PFAS	µg/kg	0.2	<0.2	<0.2	0	PASS	<0.2	<0.2	0	PASS	<0.2	<0.2	0	PASS	<0.2	<0.2	0	PASS
	Sum of PFHxS and PFOS	mg/kg	0.0002	<0.0002	<0.0002	0	PASS	<0.0002	<0.0004	0	PASS	<0.0002	<0.0002	0	PASS	<0.0002	<0.0004	0	PASS
PCBs	Arochlor 1016	mg/kg	0.1	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-
	Arochlor 1221	mg/kg	0.1	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-
	Arochlor 1232	mg/kg	0.1	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-
	Arochlor 1242	mg/kg	0.1	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-
	Arochlor 1248	mg/kg	0.1	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-
	Arochlor 1254	mg/kg	0.1	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-
	Arochlor 1260	mg/kg	0.1	-	-	-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-
	PCBs (Sum of total)	mg/kg	0.1	<0.1	<0.1	0	PASS	<0.1	<0.1	0	PASS	<0.1	-	-	-	<0.1	-	-	-
Halogenated Benzenes	Hexachlorobenzene	mg/kg	0.05	<0.05	<0.05	0	PASS	<0.05	<0.05	0	PASS	<0.05	-	-	-	<0.05	-	-	-
Inorganics	Analysed Material	%	0.1	-	-	-	-	-	99	-	-	-	-	-	-	-	-	-	-
		Comment		-	-	-	-	-	1 [#5]	-	-	-	-	-	-	-	-	-	-
	Cyanide Total	mg/kg	1	<1	<1	0	PASS	<1	<5	0	PASS	<1	-	-	-	<1	-	-	-
	Extraneous Material	%	0.1	-	-	-	-	-	0.6	-	-	-	-	-	-	-	-	-	-
	Fluoride	mg/kg	40	320	80	120	PASS-1	320	<100	105	PASS-1	60	-	-	-	60	-	-	-
	pH (aqueous extract)	-	0.1	-	-	-	-	-	9.1	-	-	-	-	-	-	-	-	-	-
	pH (Lab)	-	0.1	9.2	9.1	1	PASS	9.2	-	-	-	8.2	-	-	-	8.2	-	-	-
	Moisture Content (dried @ 103°C)	%	1	-	-	-	-	-	9.9	-	-	-	-	-	-	-	15	-	-
Herbicides	2,4,5-TP (Silvex)	mg/kg	0.5	-	-	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-
	2,4,5-Trichlorophenoxy Acetic Acid	mg/kg	0.5	-	-	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-
	2,4-Dichlorprop	mg/kg	0.5	-	-	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-
	2-Methyl-4-Chlorophenoxy Butanoic Acid	mg/kg	0.5	-	-	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-
	2-Methyl-4-chlorophenoxyacetic acid	mg/kg	0.5	-	-	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-
	4-(2,4-Dichlorophenoxy)butyric Acid (2,4-DB)	mg/kg	0.5	-	-	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-
	Dicamba	mg/kg	0.5	-	-	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-
	Dinoseb	mg/kg	0.5	-	-	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-
	Hedonal	mg/kg	0.02	<0.02	<0.02	0	PASS	<0.02	<0.5	0	PASS	<0.02	-	-	-	<0.02	-	-	-
	Mecoprop	mg/kg	0.5	-	-	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-
MAH	Total MAH	mg/kg	0.5	-	-	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-
	Isopropylbenzene	mg/kg	0.5	-	-	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-
	Styrene	mg/kg	0.5	<0.5	<0.5	0	PASS	<0.5	<0.5	0	PASS	<0.5	-	-	-	<0.5	-	-	-
Organochlorine Pesticides	Aldrin + Dieldrin	mg/kg	0.05	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-
	Endosulfan	mg/kg	0.05	<0.05	<0.05	0	PASS	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-
	Total Organochlorine Pesticides	mg/kg	5	<5.00	<5.00	0	PASS	<5.00	-	-	-	<5.00	-	-	-	<5.00	-	-	-
	4,4-DDE	mg/kg	0.05	<0.05	<0.05	0	PASS	<0.05	<0.05	0	PASS	<0.05	-	-	-	<0.05	-	-	-
	a-BHC	mg/kg	0.05	<0.05	<0.05	0	PASS	<0.05	<0.05	0	PASS	<0.05	-	-	-	<0.05	-	-	-
	Chlordane (cis)	mg/kg	0.05	<0.05	<0.05	0	PASS	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-
	Aldrin	mg/kg	0.05	<0.05	<0.05	0	PASS	<0.05	<0.05	0	PASS	<0.05	-	-	-	<0.05	-	-	-
	Chlordane (trans)	mg/kg	0.05	<0.05	<0.05	0	PASS	<0.05	-	-	-	<0.05	-	-	-	<0.05	-	-	-
	b-BHC	mg/kg	0.05	<0.05	<0.05	0	PASS	<0.05	<0.05	0	PASS	<0.05	-	-	-	<0.05	-	-	-
	d-BHC	mg/kg	0.05	<0.05	<0.05	0	PASS	<0.05	<0.05	0	PASS	<0.05	-	-	-	<0.05	-	-	-
	DDD	mg/kg	0.05	<0.05	<0.05	0	PASS	<0.05	<0.05	0	PASS	<0.05	-	-	-	<0.05	-	-	-
	DDT	mg/kg	0.05	<0.2	<0.2	0	PASS	<0.2	<0.05	0	PASS	<0.2	-	-	-	<0.2	-	-	-
	chlordane	mg/kg	0.05	<0.05	<0.05	0	PASS	<0.05	<0.1	0	PASS	<0.05	-	-	-	<0.05	-	-	-
	DDT+DDE+DDD	mg/kg	0.05	-	-	-	-	-	<0.05	-	-	-	-	-	-	-	-	-	-
	Dieldrin	mg/kg	0.05	<0.05	<0.05	0	PASS	<0.05	<0.05	0	PASS	<0.05	-	-	-	<0.05	-	-	-
	Endosulfan I	mg/kg	0.05	<0.05	<0.05	0	PASS	<0.05	<0.05	0	PASS	<0.05	-	-	-	<0.05	-	-	-
	Endosulfan II	mg/kg	0.05	<0.05	<0.05	0	PASS	<0.05	<0.05	0	PASS	<0.05	-	-	-	<0.05	-	-	-
	Endosulfan sulphate	mg/kg	0.05	<0.05	<0.05	0	PASS	<0.05	<0.05	0	PASS	<0.05	-	-	-	<0.05	-	-	-
	Endrin	mg/kg	0.05	<0.05	<0.05	0	PASS	<0.05	<0.05	0	PASS	<0.05	-	-	-	<0.05	-	-	-
	Endrin aldehyde	mg/kg	0.05	<0.05	<0.05	0	PASS	<0.05	<0.05	0	PASS	<0.05	-	-	-	<0.05	-	-	-
	Endrin ketone	mg/kg	0.05	<0.05	<0.05	0	PASS	<0.05	<0.05	0	PASS	<0.05	-	-	-	<0.05	-	-	-
	g-BHC (Lindane)	mg/kg	0.05	<0.05	<0.05	0	PASS	<0.05	<0.05	0	PASS	<0.05	-	-	-	<0.05	-	-	-
	Heptachlor	mg/kg	0.05	<0.05	<0.05	0	PASS	<0.05	<0.05	0	PASS	<0.05	-	-	-	<0.05	-	-	-
	Toxaphene	mg/kg	0.5	-	-	-	-	-	<0.5	-	-	-	-	-	-	-	-	-	-
	Heptachlor epoxide	mg/kg	0.05	<0.05	<0.05	0	PASS	<0.05	<0.05	0	PASS	<0.05	-	-	-	<0.05	-	-	-
	Methoxychlor	mg/kg	0.05	<0.2	<0.2	0	PASS	<0.2	<0.05	0	PASS	<0.2	-	-	-	<0.2	-	-	-
sVOCs	3/4-Methylphenol (m/p-cresol)	mg/kg	0.4	<1	<1	0	PASS	<1	<0.4	0	PASS	<1	-	-	-	<1	-	-	-

Appendix H
Laboratory Documents

eurofins | ARL

CHAIN OF CUSTODY

46-48 Banksia Road WELSHPOOL WA 61
Ph: +61 8 6253 4444 www.arlgroup.com.

Client: Aurecon

Contact Name: Ali Anwar

Address: Level 5, 863 Hay Street
Perth, WA 6000

Phone No: 0421 876 595

Fax No:

Project Reference: 521 420

Comments

Date Results Required By: Standard
(Please specify a time frame or number of working days)

Email Reports To: ali.anwar@aurecongroup.com

Email Invoices To:

Purchase Order No:

ARL Quote No:

LABORATORY USE ONLY

Payment Method:

Invoice No:

Eurofins Job Number: 910148

Temperature of Samples: 19.5

Lab #	Sample Description	Date Sampled	Sample Type	Total Containers	ANALYSIS REQUIRED: WA4	PFAS	SPOCAS	PHe + pHeox	[redacted]
	QC201	28/7/22	Soil	5	X	X	X	X	
	QC202	29/7/22	Soil	1		X			

Samples Relinquished By: ..... On: 29/7/22 At: 16:10 Signed: .....

Samples Received By: ..... On: ../../.. At: ..... Signed: .....

Certificate of Analysis

Aurecon Australia (WA) Pty Ltd
Level 5, 863 Hay Street
Perth
WA 6000

NATA Accredited
Accreditation Number 2377
Site Number 2370

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:	Ali Anwar
Report	910148-AIS-V2
Project Name	
Project ID	521 420
Received Date	Jul 29, 2022
Date Reported	Aug 23, 2022

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples (AS 4964-2004) and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS 4964-2004 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10 mm sieve followed by a 2 mm sieve. All fibrous matter greater than 10mm, greater than 2 mm as well as the material passing through the 2 mm sieve are retained and analysed for the presence of asbestos. If the sub 2 mm fraction is greater than approximately 30 to 60 g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964-2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964-2004 method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964-2004 and hence NATA Accreditation does not cover the performance of this service. *NOTE: NATA News March 2014, p.7, states in relation to AS 4964-2004: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".* *Reference is made to the NATA Specific Accreditation Criteria: ISO/IEC 17025 Application Document, Life Sciences - Annex, Asbestos sampling and testing This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the Government of Western Australia Department of Health Guidelines for the Assessment, Remediation and Management of Asbestos Contaminated Sites in Western Australia(WA DoH).*

Client Sample ID			QC201
Sample Matrix			Soil
Eurofins Sample No.			22-JI0062431
Date Sampled			Jul 28, 2022
	LOR	Unit	
Asbestos in Soils (AS 4964-2004)			
Sample Description	-	Comment	Brown coarse grain sand and rocks
Total Dry Mass	0.1	g	368
Total Analytical Fraction	0.1	g	368
Asbestos Detected	-	Yes/No	No
Materials Identified	-	Comment	N/A
Fibres Identified and estimated Asbestos Content (%)	-	Comment	Organic
Asbestos Content (as asbestos)	0.01	% w/w	< 0.01
Trace Analysis	0.1	g/kg	No trace asbestos detected
Asbestos in Soils (ASC NEPM 2013)			
Asbestos Containing Materials (ACM) >7 mm			
Total ACM (>7 mm)	0.1	g	< 0.1
ACM % asbestos (weighted average)	-	%	N/A
ACM in Soil (as asbestos)*	0.01	% w/w	< 0.01
Fibrous Asbestos (FA) >7 mm			
Total FA	0.0005	g	< 0.0005
FA % asbestos (weighted average)	-	%	N/A
FA in Soil (as asbestos)*	0.001	% w/w	< 0.001
Asbestos Fines (AF) <7 mm			
Total AF	0.0005	g	< 0.0005
AF % asbestos (weighted average)	-	%	N/A
AF in Soil (as asbestos)*	0.001	% w/w	< 0.001

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
LTM-ASB-8020 Method for the Qualitative Identification of Asbestos in Bulk Samples	Welshpool	Aug 01, 2022	Indefinite

eurofins

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

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
Tel: +61 8 6253 4444
NATA# 2377 Site# 2370

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South
VIC 3175
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Geelong
19/8 Lewalan Street
Grovedale
VIC 3216
Tel: +61 3 8564 5000
NATA# 1261 Site# 1254

Sydney
179 Magowar Road
Girraween
NSW 2145
Tel: +61 2 9900 8400
NATA# 1261 Site# 18217

Canberra
Unit 1,2 Dacre Street
Mitchell
ACT 2911
Tel: +61 2 6113 8091

Brisbane
1/21 Smallwood Place
Murarrie
QLD 4172
Tel: +61 7 3902 4600
NATA# 1261 Site# 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Tel: +61 2 4968 8448
NATA# 1261 Site# 25079

Eurofins Environment Testing NZ Ltd
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose,
Auckland 1061
Tel: +64 9 526 45 51
IANZ# 1327

Christchurch
43 Detroit Drive
Rolleston,
Christchurch 7675
Tel: 0800 856 450
IANZ# 1290

Company Name: Aurecon Australia (WA) Pty Ltd
Address: Level 5, 863 Hay Street
Perth
WA 6000

Project Name:
Project ID: 521 420

Order No.:
Report #: 910148
Phone: 08 6104 2816
Fax: 08 9223 1605

Received: Jul 29, 2022 4:10 PM
Due: Aug 9, 2022
Priority: 7 Day
Contact Name: Ali Anwar

Eurofins Analytical Services Manager : Elden Garrett

Sample Detail						Acid Sulfate Soils Field pH Test	SPOCAS Suite - NASSG (Excluding ANC)	Moisture Set	Suite WA4 - WA Waste (Full)	PFAS (Full Suite) Soil
Perth Laboratory - NATA # 2377 Site # 2370								X	X	X
Melbourne Laboratory - NATA # 1261 Site # 1254									X	
Brisbane Laboratory - NATA # 1261 Site # 20794						X	X			
External Laboratory										
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**					
1	QC201	Jul 28, 2022		Soil	L22-JI0062431	X	X	X	X	X
2	QC202	Jul 29, 2022		Soil	L22-JI0062432			X		X
Test Counts						1	1	2	1	2

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. Information identified on this report with the colour **orange** indicates sections of the report not covered by the laboratory's scope of NATA accreditation.
6. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
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.

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**)
F/fld	Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**)
g, kg	Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (**V** = **r** x **t**)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**)
min	Time (**t**), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \left(\frac{A}{a}\right) \times \left(\frac{N}{n}\right) \times \left(\frac{1}{r}\right) \times \left(\frac{1}{t}\right) = K \times \left(\frac{N}{n}\right) \times \left(\frac{1}{V}\right)$

Asbestos Content (as asbestos): $\%\, w/w = \frac{(m \times P_A)}{M}$

Weighted Average (of asbestos): $\%_{WA} = \sum \frac{(m \times P_A)_x}{x}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**P_A**).
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable".
AFM	Airborne Fibre Monitoring, e.g. by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total % w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
HSG248	UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021).
HSG264	UK HSE HSG264, *Asbestos: The Survey Guide* (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)].
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis*
Weighted Average	Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**).

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	N/A
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Asbestos Counter/Identifier:

Reagan Neal	Senior Analyst-Asbestos

Authorised by:

Rhys Thomas	Senior Analyst-Asbestos

Kim Rodgers
Business Unit 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

Aurecon Australia (WA) Pty Ltd
Level 5, 863 Hay Street
Perth
WA 6000

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Accreditation Number 2377
Site Number 2370

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Attention: **Ali Anwar**

Report **910148-S-V2**
Project name
Project ID 521 420
Received Date Jul 29, 2022

Client Sample ID			**QC201**	**QC202**
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**L22-JI0062431**	**L22-JI0062432**
Date Sampled			**Jul 28, 2022**	**Jul 29, 2022**
Test/Reference	LOR	Unit		
Solvent Screen				
1.1.1-Trichloroethane	0.5	mg/kg	< 0.5	-
1.1.2-Trichloroethane	0.5	mg/kg	< 0.5	-
2-Butanone (MEK)	0.5	mg/kg	< 0.5	-
2-Propanone (Acetone)	0.5	mg/kg	< 0.5	-
4-Methyl-2-pentanone (MIBK)	0.5	mg/kg	< 0.5	-
Acrylonitrile	0.05	mg/kg	< 0.05	-
Ethyl hexyl acrylate	2	mg/kg	< 2	-
Isopropanol	2.5	mg/kg	< 2.5	-
n-Hexane	1	mg/kg	< 1	-
Trichloroethene	0.5	mg/kg	< 0.5	-
BTEX				
Benzene	0.1	mg/kg	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	-
Xylenes - Total*	0.3	mg/kg	< 0.3	-
Monocyclic Aromatic Hydrocarbons				
Isopropyl benzene (Cumene)	0.5	mg/kg	< 0.5	-
Styrene	0.5	mg/kg	< 0.5	-
Total MAH*	0.5	mg/kg	< 0.5	-
4-Bromofluorobenzene (surr.)	1	%	131	-
Toluene-d8 (surr.)	1	%	132	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.5	mg/kg	< 0.5	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-
TRH C6-C10	20	mg/kg	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-
Total Recoverable Hydrocarbons				
TRH C6-C9	20	mg/kg	< 20	-
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C10-C14	20	mg/kg	< 20	-
TRH C15-C28	50	mg/kg	< 50	-
TRH C29-C36	50	mg/kg	< 50	-
TRH C10-C36 (Total)	50	mg/kg	< 50	-

Client Sample ID			QC201	QC202
Sample Matrix			Soil	Soil
Eurofins Sample No.			L22-JI0062431	L22-JI0062432
Date Sampled			Jul 28, 2022	Jul 29, 2022
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	-
Acenaphthene	0.5	mg/kg	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	-
Total PAH*	0.5	mg/kg	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	82	-
p-Terphenyl-d14 (surr.)	1	%	89	-
Organochlorine Pesticides				
Chlordanes - Total	0.1	mg/kg	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	-
a-HCH	0.05	mg/kg	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	-
b-HCH	0.05	mg/kg	< 0.05	-
d-HCH	0.05	mg/kg	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-
Methoxychlor	0.05	mg/kg	< 0.05	-
Toxaphene	0.5	mg/kg	< 0.5	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-
Dibutylchlorendate (surr.)	1	%	138	-
Tetrachloro-m-xylene (surr.)	1	%	131	-

Client Sample ID			QC201	QC202
Sample Matrix			Soil	Soil
Eurofins Sample No.			L22-JI0062431	L22-JI0062432
Date Sampled			Jul 28, 2022	Jul 29, 2022
Test/Reference	LOR	Unit		
Polychlorinated Biphenyls				
Aroclor-1016	0.1	mg/kg	< 0.1	-
Aroclor-1221	0.1	mg/kg	< 0.1	-
Aroclor-1232	0.1	mg/kg	< 0.1	-
Aroclor-1242	0.1	mg/kg	< 0.1	-
Aroclor-1248	0.1	mg/kg	< 0.1	-
Aroclor-1254	0.1	mg/kg	< 0.1	-
Aroclor-1260	0.1	mg/kg	< 0.1	-
Total PCB*	0.1	mg/kg	< 0.1	-
Dibutylchlorendate (surr.)	1	%	138	-
Tetrachloro-m-xylene (surr.)	1	%	131	-
Acid Herbicides				
2.4-D	0.5	mg/kg	< 0.5	-
2.4-DB	0.5	mg/kg	< 0.5	-
2.4.5-T	0.5	mg/kg	< 0.5	-
2.4.5-TP	0.5	mg/kg	< 0.5	-
Actril (loxynil)	0.5	mg/kg	< 0.5	-
Dicamba	0.5	mg/kg	< 0.5	-
Dichlorprop	0.5	mg/kg	< 0.5	-
Dinitro-o-cresol	0.5	mg/kg	< 0.5	-
Dinoseb	0.5	mg/kg	< 0.5	-
MCPA	0.5	mg/kg	< 0.5	-
MCPB	0.5	mg/kg	< 0.5	-
Mecoprop	0.5	mg/kg	< 0.5	-
Warfarin (surr.)	1	%	90	-
Phenols (Halogenated)				
2-Chlorophenol	0.5	mg/kg	< 0.5	-
2.4-Dichlorophenol	0.5	mg/kg	< 0.5	-
2.4.5-Trichlorophenol	1	mg/kg	< 1	-
2.4.6-Trichlorophenol	1	mg/kg	< 1	-
2.6-Dichlorophenol	0.5	mg/kg	< 0.5	-
4-Chloro-3-methylphenol	1	mg/kg	< 1	-
Pentachlorophenol	1	mg/kg	< 1	-
Tetrachlorophenols - Total	10	mg/kg	< 10	-
Total Halogenated Phenol*	1	mg/kg	< 1	-
Phenols (non-Halogenated)				
2-Cyclohexyl-4.6-dinitrophenol	20	mg/kg	< 20	-
2-Methyl-4.6-dinitrophenol	5	mg/kg	< 5	-
2-Nitrophenol	1.0	mg/kg	< 1	-
2.4-Dimethylphenol	0.5	mg/kg	< 0.5	-
2.4-Dinitrophenol	5	mg/kg	< 5	-
2-Methylphenol (o-Cresol)	0.2	mg/kg	< 0.2	-
3&4-Methylphenol (m&p-Cresol)	0.4	mg/kg	< 0.4	-
Total cresols*	0.5	mg/kg	< 0.5	-
4-Nitrophenol	5	mg/kg	< 5	-
Dinoseb	20	mg/kg	< 20	-
Phenol	0.5	mg/kg	< 0.5	-
Phenol-d6 (surr.)	1	%	90	-
Total Non-Halogenated Phenol*	20	mg/kg	< 20	-

Client Sample ID			QC201	QC202
Sample Matrix			Soil	Soil
Eurofins Sample No.			L22-JI0062431	L22-JI0062432
Date Sampled			Jul 28, 2022	Jul 29, 2022
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
TRH >C10-C16	50	mg/kg	< 50	-
TRH >C16-C34	100	mg/kg	< 100	-
TRH >C34-C40	100	mg/kg	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	-
Aliphatic / Aromatic TRH-WA				
TRH >C35 Aliphatic	180	mg/kg	< 180	-
TRH C10-C16 Aliphatic	50	mg/kg	< 50	-
TRH C10-C16 Aromatic	50	mg/kg	< 50	-
TRH C16-C35 Aliphatic	180	mg/kg	< 180	-
TRH C16-C35 Aromatic	90	mg/kg	< 90	-
Chromium (hexavalent)	1	mg/kg	< 1	-
Cyanide (total)	5	mg/kg	< 5	-
Cyanide (weak acid dissoc.)	5	mg/kg	< 5	-
Fluoride (Total)	100	mg/kg	< 100	-
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	9.1	-
% Moisture	1	%	9.9	15
Heavy Metals				
Aluminium	20	mg/kg	1300	-
Arsenic	2	mg/kg	< 2	-
Barium	10	mg/kg	< 10	-
Beryllium	2	mg/kg	< 2	-
Boron	10	mg/kg	< 10	-
Cadmium	0.4	mg/kg	< 0.4	-
Cobalt	5	mg/kg	< 5	-
Copper	5	mg/kg	< 5	-
Lead	5	mg/kg	< 5	-
Manganese	5	mg/kg	35	-
Mercury	0.1	mg/kg	< 0.1	-
Molybdenum	5	mg/kg	< 5	-
Nickel	5	mg/kg	< 5	-
Selenium	2	mg/kg	< 2	-
Silver	2	mg/kg	< 2	-
Vanadium	10	mg/kg	< 10	-
Zinc	5	mg/kg	< 5	-
Acid Sulfate Soils Field pH Test				
pH-F (Field pH test)*	0.1	pH Units	9.3	-
pH-FOX (Field pH Peroxide test)*	0.1	pH Units	7.5	-
Reaction Ratings*[S05]	0	-	4.0	-
Actual Acidity (NLM-3.2)				
pH-KCL (NLM-3.1)	0.1	pH Units	9.4	-
Titratable Actual Acidity (NLM-3.2)	2	mol H+/t	< 2	-
Titratable Actual Acidity (NLM-3.2)	0.003	% pyrite S	< 0.003	-
Potential Acidity - Titratable Peroxide				
pH-OX	0.1	pH Units	7.8	-
Titratable Peroxide Acidity (s-TPA)	0.02	% pyrite S	< 0.02	-
Titratable Peroxide Acidity (a-TPA)	2	mol H+/t	< 2	-
Titratable Sulfidic Acidity (a-TSA)	2	mol H+/t	< 2	-
Titratable Sulfidic Acidity (s-TSA)	0.02	% pyrite S	< 0.02	-

Client Sample ID			QC201	QC202
Sample Matrix			Soil	Soil
Eurofins Sample No.			L22-JI0062431	L22-JI0062432
Date Sampled			Jul 28, 2022	Jul 29, 2022
Test/Reference	LOR	Unit		
Extractable Sulfur				
Sulfur - KCl Extractable	0.005	% S	< 0.005	-
Peroxide Extractable Sulfur	0.005	% S	0.024	-
HCl Extractable Sulfur	0.005	% S	N/A	-
Potential Acidity (SPOS)				
Peroxide Oxidisable Sulfur (s-SPOS) (NLM 2.2)	0.02	% S	0.02	-
Peroxide Oxidisable Sulfur (a-SPOS) (NLM 2.2)	10	mol H+/t	15	-
Retained Acidity (S-NAS)				
Net Acid soluble sulfur (SNAS) NLM-4.1	0.02	% S	N/A	-
Net Acid soluble sulfur (s-SNAS) NLM-4.1[S02]	0.02	% S	N/A	-
Net Acid soluble sulfur (a-SNAS) NLM-4.1	10	mol H+/t	N/A	-
HCl Extractable Sulfur Correction Factor	1	factor	2.0	-
Extractable Calcium				
Calcium - KCl Extractable	0.005	% Ca	0.22	-
Calcium - Peroxide	0.005	% Ca	3.6	-
Calcium - Acid Reacted	0.005	% Ca	3.4	-
Calcium - Acid Reacted (s-aCa)	0.005	% S	2.7	-
Calcium - Acid Reacted (a-aCa)	0.005	mol H+/t	1700	-
Extractable Magnesium				
Magnesium - KCl Extractable	0.005	% Mg	0.013	-
Magnesium - Peroxide	0.005	% Mg	0.10	-
Magnesium - Acid Reacted	0.005	% Mg	0.089	-
Magnesium - Acid Reacted (s-aCa)	0.005	% S	0.12	-
Magnesium - Acid Reacted (a-aCa)	0.005	mol H+/t	74	-
Acid Neutralising Capacity (ANCE)				
Acid Neutralising Capacity - (ANCE)	0.02	% CaCO3	21	-
Acid Neutralising Capacity - (s-ANCE)	0.02	% S	6.6	-
Acid Neutralising Capacity - (a-ANCE)	10	mol H+/t	4100	-
Acid Neutralising Capacity (ANCbt)				
ANC Fineness Factor		factor	1.5	-
Net Acidity (Including ANC)				
SPOCAS - Net Acidity - ASSMAC (Acidity Units)	10	mol H+/t	< 10	-
SPOCAS - Net Acidity - ASSMAC (Sulfur Units)	0.02	% S	< 0.02	-
SPOCAS - Liming rate - ASSMAC	1	kg CaCO3/t	< 1	-
SPOCAS Suite - NASSG (Excluding ANC)				
SPOCAS - NASSG (Excluding ANC) - Net Acidity (S%)	0.02	% S	0.02	-
SPOCAS - NASSG (Excluding ANC) - Net Acidity (Acidity Units)	2	mol H+/t	15	-
SPOCAS - NASSG (Excluding ANC) - Liming rate	1	kg CaCO3/t	1.1	-
Extraneous Material				
<2mm Fraction	0.005	g	220	-
>2mm Fraction	0.005	g	1.3	-
Analysed Material	0.1	%	99	-
Extraneous Material	0.1	%	0.6	-
PFAS (Full Suite) Soil				
Perfluorobutanoic acid (PFBA)	0.0008	mg/kg	< 0.0008	< 0.0008
Perfluoropentanoic acid (PFPeA)	0.0002	mg/kg	< 0.0002	< 0.0002
Perfluorohexanoic acid (PFHxA)	0.0004	mg/kg	< 0.0004	< 0.0004
Perfluoroheptanoic acid (PFHpA)	0.0008	mg/kg	< 0.0008	< 0.0008
Perfluorooctanoic acid (PFOA)	0.0002	mg/kg	< 0.0002	< 0.0002

Client Sample ID			QC201	QC202
Sample Matrix			Soil	Soil
Eurofins Sample No.			L22-JI0062431	L22-JI0062432
Date Sampled			Jul 28, 2022	Jul 29, 2022
Test/Reference	LOR	Unit		
PFAS (Full Suite) Soil				
Perfluorononanoic acid (PFNA)	0.0002	mg/kg	< 0.0002	< 0.0002
Perfluorodecanoic acid (PFDA)	0.0002	mg/kg	< 0.0002	< 0.0002
Perfluoroundecanoic acid (PFUnDA)	0.0002	mg/kg	< 0.0002	< 0.0002
Perfluorododecanoic acid (PFDoDA)	0.0002	mg/kg	< 0.0002	< 0.0002
Perfluorotridecanoic acid (PFTrDA)	0.0002	mg/kg	< 0.0002	< 0.0002
Perfluorotetradecanoic acid (PFTeDA)	0.0002	mg/kg	< 0.0002	< 0.0002
Perfluorobutane sulfonic acid (PFBS)	0.0004	mg/kg	< 0.0004	< 0.0004
Perfluoropentane sulfonic acid (PFPeS)	0.0004	mg/kg	< 0.0004	< 0.0004
Perfluorohexane sulfonic acid (PFHxS)	0.0004	mg/kg	< 0.0004	< 0.0004
Perfluoroheptane sulfonic acid (PFHpS)	0.0004	mg/kg	< 0.0004	< 0.0004
Perfluorooctane sulfonic acid (PFOS)	0.0004	mg/kg	< 0.0004	< 0.0004
Perfluorodecane sulfonic acid (PFDS)	0.0004	mg/kg	< 0.0004	< 0.0004
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	0.0005	mg/kg	< 0.0005	< 0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	0.0005	mg/kg	< 0.0005	< 0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	0.0005	mg/kg	< 0.0005	< 0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	0.0005	mg/kg	< 0.0005	< 0.0005
Perfluorooctane sulfonamide (FOSA)	0.0004	mg/kg	< 0.0004	< 0.0004
N-Methyl perfluorooctane sulfonamide (Me-FOSA)	0.0004	mg/kg	< 0.0004	< 0.0004
N-Ethyl perfluorooctane sulfonamide (Et-FOSA)	0.0004	mg/kg	< 0.0004	< 0.0004
Perfluorooctane sulfonamidoacetic acid (FOSAA)	0.0004	mg/kg	< 0.0004	< 0.0004
N-Methyl perfluorooctane sulfonamidoacetic acid (Me-FOSAA)	0.0004	mg/kg	< 0.0004	< 0.0004
N-Ethyl perfluorooctane sulfonamidoacetic acid (Et-FOSAA)	0.0004	mg/kg	< 0.0004	< 0.0004
N-Methyl perfluorooctane sulfonamidoethanol (N-Me-FOSE)	0.0008	mg/kg	< 0.0008	< 0.0008
N-Ethyl perfluorooctane sulfonamidoethanol (N-Et-FOSE)	0.0008	mg/kg	< 0.0008	< 0.0008
Sum of PFAS	0.0002	mg/kg	< 0.0002	< 0.0002
Sum of PFHxS and PFOS	0.0004	mg/kg	< 0.0004	< 0.0004
Sum of PFAS (WA DER List)	0.0002	mg/kg	< 0.0002	< 0.0002

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
Solvent Screen	Melbourne	Aug 03, 2022	14 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices (USEPA 8260)			
Monocyclic Aromatic Hydrocarbons	Melbourne	Aug 03, 2022	7 Days
- Method: USEPA 8260			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Aug 03, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Melbourne	Aug 03, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Aug 03, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Aug 03, 2022	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Organochlorine Pesticides	Melbourne	Aug 03, 2022	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)			
Polychlorinated Biphenyls	Melbourne	Aug 03, 2022	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8082)			
Acid Herbicides	Melbourne	Aug 03, 2022	14 Days
- Method: LTM-ORG-2180 Phenoxy Acid Herbicides			
Phenols (Halogenated)	Melbourne	Aug 03, 2022	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Phenols (non-Halogenated)	Melbourne	Aug 03, 2022	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Aug 03, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Aliphatic / Aromatic TRH-WA	Melbourne	Aug 03, 2022	14 Days
- Method: LTM-ORG-2020 Health Risk Assessment Fractionation of Hydrocarbon			
Chromium (hexavalent)	Melbourne	Aug 03, 2022	28 Days
- Method: LTM-INO-4100 Hexavalent Chromium by Spectrometric detection			
Cyanide (total)	Melbourne	Aug 04, 2022	14 Days
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Cyanide (weak acid dissoc.)	Melbourne	Aug 04, 2022	14 Days
- Method: LTM-INO-4020 Total Free WAD Cyanide by CFA			
Fluoride (Total)	Melbourne	Aug 03, 2022	28 Days
- Method: LTM-INO-4150 Determination of Total Fluoride PART A – CIC			
pH (1:5 Aqueous extract at 25 °C as rec.)	Melbourne	Aug 03, 2022	7 Days
- Method: LTM-GEN-7090 pH in soil by ISE			
Heavy Metals	Melbourne	Aug 03, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Mercury	Melbourne	Aug 03, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Welshpool	Jul 31, 2022	14 Days
- Method: ARL135 Moisture in Solids			
Acid Sulfate Soils Field pH Test	Brisbane	Jul 31, 2022	7 Days
- Method: LTM-GEN-7060 Determination of field pH (pHF) and field pH peroxide (pHFOX) tests			
PFAS (Full Suite) Soil	Welshpool	Jul 31, 2022	28 Days
- Method: ARL511 - Per and Polyfluoroalkyl Substances in Soil/Sediment by LCMS			
SPOCAS Suite - NASSG (Excluding ANC)			
SPOCAS Suite - NASSG (Excluding ANC)	Brisbane	Aug 23, 2022	6 Week
- Method: LTM-GEN-7050			
Extraneous Material	Brisbane	Aug 03, 2022	6 Week
- Method: LTM-GEN-7050/7070			

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Received: Jul 29, 2022 4:10 PM
Due: Aug 9, 2022
Priority: 7 Day
Contact Name: Ali Anwar

Eurofins Analytical Services Manager : Elden Garrett

Sample Detail						Acid Sulfate Soils Field pH Test	SPOCAS Suite	Moisture Set	Suite WA4 - WA Waste (Full)	PFAS (Full Suite) Soil
Perth Laboratory - NATA # 2377 Site # 2370								X	X	X
Melbourne Laboratory - NATA # 1261 Site # 1254									X	
Brisbane Laboratory - NATA # 1261 Site # 20794						X	X			
External Laboratory										
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**					
1	QC201	Jul 28, 2022		Soil	L22-Jl0062431	X	X	X	X	X
2	QC202	Jul 29, 2022		Soil	L22-Jl0062432			X		X
Test Counts						1	1	2	1	2

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

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 (*bis*-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.

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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							
Solvent Screen							
1.1.1-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
1.1.2-Trichloroethane	mg/kg	< 0.5			0.5	Pass	
2-Butanone (MEK)	mg/kg	< 0.5			0.5	Pass	
2-Propanone (Acetone)	mg/kg	< 0.5			0.5	Pass	
4-Methyl-2-pentanone (MIBK)	mg/kg	< 0.5			0.5	Pass	
Trichloroethene	mg/kg	< 0.5			0.5	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							
Monocyclic Aromatic Hydrocarbons							
Isopropyl benzene (Cumene)	mg/kg	< 0.5			0.5	Pass	
Styrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	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							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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	
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							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Acid Herbicides							
2.4-D	mg/kg	< 0.5			0.5	Pass	
2.4-DB	mg/kg	< 0.5			0.5	Pass	
2.4.5-T	mg/kg	< 0.5			0.5	Pass	
2.4.5-TP	mg/kg	< 0.5			0.5	Pass	
Actril (loxynil)	mg/kg	< 0.5			0.5	Pass	
Dicamba	mg/kg	< 0.5			0.5	Pass	
Dichlorprop	mg/kg	< 0.5			0.5	Pass	
Dinitro-o-cresol	mg/kg	< 0.5			0.5	Pass	
Dinoseb	mg/kg	< 0.5			0.5	Pass	
MCPA	mg/kg	< 0.5			0.5	Pass	
MCPB	mg/kg	< 0.5			0.5	Pass	
Mecoprop	mg/kg	< 0.5			0.5	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	
Pentachlorophenol	mg/kg	< 1			1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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			1.0	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							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
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							
Chromium (hexavalent)	mg/kg	< 1			1	Pass	
Cyanide (total)	mg/kg	< 5			5	Pass	
Cyanide (weak acid dissoc.)	mg/kg	< 5			5	Pass	
Fluoride (Total)	mg/kg	< 100			100	Pass	
Method Blank							
Heavy Metals							
Aluminium	mg/kg	< 20			20	Pass	
Arsenic	mg/kg	< 2			2	Pass	
Barium	mg/kg	< 10			10	Pass	
Beryllium	mg/kg	< 2			2	Pass	
Boron	mg/kg	< 10			10	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Cobalt	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Manganese	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Molybdenum	mg/kg	< 5			5	Pass	
Nickel	mg/kg	< 5			5	Pass	
Selenium	mg/kg	< 2			2	Pass	
Silver	mg/kg	< 2			2	Pass	
Vanadium	mg/kg	< 10			10	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
PFAS (Full Suite) Soil							
Perfluorobutanoic acid (PFBA)	mg/kg	< 0.0008			0.0008	Pass	
Perfluoropentanoic acid (PFPeA)	mg/kg	< 0.0002			0.0002	Pass	
Perfluorohexanoic acid (PFHxA)	mg/kg	< 0.0004			0.0004	Pass	
Perfluoroheptanoic acid (PFHpA)	mg/kg	< 0.0008			0.0008	Pass	
Perfluorooctanoic acid (PFOA)	mg/kg	< 0.0002			0.0002	Pass	
Perfluorononanoic acid (PFNA)	mg/kg	< 0.0002			0.0002	Pass	
Perfluorodecanoic acid (PFDA)	mg/kg	< 0.0002			0.0002	Pass	
Perfluoroundecanoic acid (PFUnDA)	mg/kg	< 0.0002			0.0002	Pass	
Perfluorododecanoic acid (PFDoDA)	mg/kg	< 0.0002			0.0002	Pass	
Perfluorotridecanoic acid (PFTrDA)	mg/kg	< 0.0002			0.0002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	< 0.0002			0.0002	Pass	
Perfluorobutane sulfonic acid (PFBS)	mg/kg	< 0.0004			0.0004	Pass	
Perfluoropentane sulfonic acid (PFPeS)	mg/kg	< 0.0004			0.0004	Pass	
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	< 0.0004			0.0004	Pass	
Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	< 0.0004			0.0004	Pass	
Perfluorooctane sulfonic acid (PFOS)	mg/kg	< 0.0004			0.0004	Pass	
Perfluorodecane sulfonic acid (PFDS)	mg/kg	< 0.0004			0.0004	Pass	
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/kg	< 0.0005			0.0005	Pass	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	mg/kg	< 0.0005			0.0005	Pass	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	mg/kg	< 0.0005			0.0005	Pass	
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	mg/kg	< 0.0005			0.0005	Pass	
Perfluorooctane sulfonamide (FOSA)	mg/kg	< 0.0004			0.0004	Pass	
N-Methyl perfluorooctane sulfonamide (Me-FOSA)	mg/kg	< 0.0004			0.0004	Pass	
N-Ethyl perfluorooctane sulfonamide (Et-FOSA)	mg/kg	< 0.0004			0.0004	Pass	
Perfluorooctane sulfonamidoacetic acid (FOSAA)	mg/kg	< 0.0004			0.0004	Pass	
N-Methyl perfluorooctane sulfonamidoacetic acid (Me-FOSAA)	mg/kg	< 0.0004			0.0004	Pass	
N-Ethyl perfluorooctane sulfonamidoacetic acid (Et-FOSAA)	mg/kg	< 0.0004			0.0004	Pass	
N-Methyl perfluorooctane sulfonamidoethanol (N-Me-FOSE)	mg/kg	< 0.0008			0.0008	Pass	
N-Ethyl perfluorooctane sulfonamidoethanol (N-Et-FOSE)	mg/kg	< 0.0008			0.0008	Pass	
Sum of PFAS	mg/kg	< 0.0002			0.0002	Pass	
Sum of PFHxS and PFOS	mg/kg	< 0.0004			0.0004	Pass	
Sum of PFAS (WA DER List)	mg/kg	< 0.0002			0.0002	Pass	
LCS - % Recovery							
Solvent Screen							
1.1.1-Trichloroethane	%	97			70-130	Pass	
Trichloroethene	%	89			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	116			70-130	Pass	
Toluene	%	116			70-130	Pass	
Ethylbenzene	%	128			70-130	Pass	
m&p-Xylenes	%	125			70-130	Pass	
Xylenes - Total*	%	126			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	120			70-130	Pass	
TRH C6-C10	%	124			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	97			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C10-C14	%	88			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	102			70-130	Pass	
Acenaphthylene	%	114			70-130	Pass	
Anthracene	%	119			70-130	Pass	
Benz(a)anthracene	%	84			70-130	Pass	
Benzo(a)pyrene	%	117			70-130	Pass	
Benzo(b&j)fluoranthene	%	107			70-130	Pass	
Benzo(g.h.i)perylene	%	125			70-130	Pass	
Benzo(k)fluoranthene	%	115			70-130	Pass	
Chrysene	%	118			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dibenz(a.h)anthracene	%	102			70-130	Pass	
Fluoranthene	%	104			70-130	Pass	
Fluorene	%	114			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	123			70-130	Pass	
Naphthalene	%	108			70-130	Pass	
Phenanthrene	%	120			70-130	Pass	
Pyrene	%	105			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	98			70-130	Pass	
4.4'-DDD	%	93			70-130	Pass	
4.4'-DDE	%	89			70-130	Pass	
4.4'-DDT	%	95			70-130	Pass	
a-HCH	%	72			70-130	Pass	
Aldrin	%	91			70-130	Pass	
b-HCH	%	79			70-130	Pass	
d-HCH	%	95			70-130	Pass	
Dieldrin	%	83			70-130	Pass	
Endosulfan I	%	77			70-130	Pass	
Endosulfan II	%	90			70-130	Pass	
Endosulfan sulphate	%	83			70-130	Pass	
Endrin	%	122			70-130	Pass	
Endrin aldehyde	%	86			70-130	Pass	
Endrin ketone	%	82			70-130	Pass	
g-HCH (Lindane)	%	79			70-130	Pass	
Heptachlor	%	71			70-130	Pass	
Heptachlor epoxide	%	78			70-130	Pass	
Hexachlorobenzene	%	72			70-130	Pass	
Methoxychlor	%	82			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	84			70-130	Pass	
LCS - % Recovery							
Acid Herbicides							
2.4-D	%	82			70-130	Pass	
2.4-DB	%	77			70-130	Pass	
2.4.5-T	%	73			70-130	Pass	
2.4.5-TP	%	95			70-130	Pass	
Actril (loxynil)	%	94			70-130	Pass	
Dicamba	%	90			70-130	Pass	
Dichlorprop	%	85			70-130	Pass	
Dinitro-o-cresol	%	90			70-130	Pass	
Dinoseb	%	99			70-130	Pass	
MCPA	%	91			70-130	Pass	
MCPB	%	87			70-130	Pass	
Mecoprop	%	74			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	96			25-140	Pass	
2.4-Dichlorophenol	%	96			25-140	Pass	
2.4.5-Trichlorophenol	%	66			25-140	Pass	
2.4.6-Trichlorophenol	%	92			25-140	Pass	
2.6-Dichlorophenol	%	85			25-140	Pass	
4-Chloro-3-methylphenol	%	83			25-140	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Pentachlorophenol	%	50			25-140	Pass	
Tetrachlorophenols - Total	%	122			25-140	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	35			25-140	Pass	
2-Methyl-4.6-dinitrophenol	%	33			25-140	Pass	
2-Nitrophenol	%	98			25-140	Pass	
2.4-Dimethylphenol	%	107			25-140	Pass	
2.4-Dinitrophenol	%	104			25-140	Pass	
2-Methylphenol (o-Cresol)	%	79			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	96			25-140	Pass	
4-Nitrophenol	%	116			25-140	Pass	
Dinoseb	%	35			25-140	Pass	
Phenol	%	94			25-140	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	82			70-130	Pass	
LCS - % Recovery							
Chromium (hexavalent)	%	71			70-130	Pass	
Fluoride (Total)	%	111			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	105			80-120	Pass	
Arsenic	%	105			80-120	Pass	
Barium	%	106			80-120	Pass	
Beryllium	%	99			80-120	Pass	
Boron	%	95			80-120	Pass	
Cadmium	%	104			80-120	Pass	
Cobalt	%	105			80-120	Pass	
Copper	%	105			80-120	Pass	
Lead	%	105			80-120	Pass	
Manganese	%	102			80-120	Pass	
Mercury	%	102			80-120	Pass	
Molybdenum	%	103			80-120	Pass	
Nickel	%	103			80-120	Pass	
Selenium	%	102			80-120	Pass	
Silver	%	106			80-120	Pass	
Vanadium	%	105			80-120	Pass	
Zinc	%	104			80-120	Pass	
LCS - % Recovery							
PFAS (Full Suite) Soil							
Perfluorobutanoic acid (PFBA)	%	92			50-130	Pass	
Perfluoropentanoic acid (PFPeA)	%	84			50-130	Pass	
Perfluorohexanoic acid (PFHxA)	%	95			50-130	Pass	
Perfluorooctanoic acid (PFOA)	%	86			50-130	Pass	
Perfluorononanoic acid (PFNA)	%	90			50-130	Pass	
Perfluorodecanoic acid (PFDA)	%	104			50-130	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	111			50-130	Pass	
Perfluorododecanoic acid (PFDoDA)	%	93			50-130	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	79			50-130	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	94			50-130	Pass	
Perfluorobutane sulfonic acid (PFBS)	%	97			50-130	Pass	
Perfluoropentane sulfonic acid (PFPeS)	%	95			50-130	Pass	
Perfluorohexane sulfonic acid (PFHxS)	%	96			50-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoroheptane sulfonic acid (PFHpS)			%	83			50-130	Pass	
Perfluorooctane sulfonic acid (PFOS)			%	89			50-130	Pass	
Perfluorodecane sulfonic acid (PFDS)			%	105			50-130	Pass	
4:2 Fluorotelomer sulfonic acid (4:2 FTS)			%	114			50-130	Pass	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)			%	115			50-130	Pass	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)			%	104			50-130	Pass	
Perfluorooctane sulfonamide (FOSA)			%	111			50-130	Pass	
N-Methyl perfluorooctane sulfonamidoacetic acid (Me-FOSAA)			%	76			50-130	Pass	
N-Ethyl perfluorooctane sulfonamidoacetic acid (Et-FOSAA)			%	89			50-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Solvent Screen				Result 1					
1.1.1-Trichloroethane	B22-Au0007119	NCP	%	90			70-130	Pass	
Trichloroethene	B22-Au0007119	NCP	%	76			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	B22-Au0007119	NCP	%	80			70-130	Pass	
Toluene	B22-Au0007119	NCP	%	76			70-130	Pass	
Ethylbenzene	B22-Au0007119	NCP	%	80			70-130	Pass	
m&p-Xylenes	B22-Au0007119	NCP	%	78			70-130	Pass	
o-Xylene	B22-Au0007119	NCP	%	80			70-130	Pass	
Xylenes - Total*	B22-Au0007119	NCP	%	79			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	B22-Au0007119	NCP	%	85			70-130	Pass	
TRH C6-C10	B22-Au0007119	NCP	%	82			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	L22-Jl0062431	CP	%	75			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	M22-Au0008121	NCP	%	85			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M22-Au0014610	NCP	%	78			70-130	Pass	
Acenaphthylene	M22-Au0014610	NCP	%	103			70-130	Pass	
Anthracene	M22-Au0014610	NCP	%	86			70-130	Pass	
Benz(a)anthracene	M22-Au0014610	NCP	%	86			70-130	Pass	
Benzo(a)pyrene	M22-Au0014610	NCP	%	119			70-130	Pass	
Benzo(b&j)fluoranthene	M22-Au0014610	NCP	%	125			70-130	Pass	
Benzo(g.h.i)perylene	M22-Au0014610	NCP	%	116			70-130	Pass	
Benzo(k)fluoranthene	M22-Au0014610	NCP	%	93			70-130	Pass	
Chrysene	M22-Au0014610	NCP	%	70			70-130	Pass	
Dibenz(a.h)anthracene	M22-Au0014610	NCP	%	100			70-130	Pass	
Fluoranthene	M22-Au0014610	NCP	%	89			70-130	Pass	
Fluorene	M22-Au0014610	NCP	%	81			70-130	Pass	
Indeno(1.2.3-cd)pyrene	M22-Au0014610	NCP	%	118			70-130	Pass	
Naphthalene	M22-Au0014610	NCP	%	82			70-130	Pass	
Phenanthrene	M22-Au0014610	NCP	%	123			70-130	Pass	
Pyrene	M22-Au0014610	NCP	%	72			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	M22-Au0007732	NCP	%	113			70-130	Pass	
4.4'-DDD	M22-Au0007732	NCP	%	102			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
4.4'-DDE	M22-Au0007732	NCP	%	118			70-130	Pass	
4.4'-DDT	M22-Au0007732	NCP	%	79			70-130	Pass	
a-HCH	M22-Au0007732	NCP	%	75			70-130	Pass	
Aldrin	M22-Au0007732	NCP	%	117			70-130	Pass	
b-HCH	M22-Au0007732	NCP	%	104			70-130	Pass	
d-HCH	M22-Au0007732	NCP	%	89			70-130	Pass	
Dieldrin	M22-Au0007732	NCP	%	123			70-130	Pass	
Endosulfan I	M22-Au0007732	NCP	%	96			70-130	Pass	
Endosulfan II	M22-Au0007732	NCP	%	125			70-130	Pass	
Endosulfan sulphate	M22-Au0007732	NCP	%	90			70-130	Pass	
Endrin	M22-Au0007732	NCP	%	91			70-130	Pass	
Endrin aldehyde	M22-Au0007732	NCP	%	118			70-130	Pass	
Endrin ketone	M22-Au0007732	NCP	%	99			70-130	Pass	
g-HCH (Lindane)	M22-Au0007732	NCP	%	98			70-130	Pass	
Heptachlor	M22-Au0007732	NCP	%	91			70-130	Pass	
Heptachlor epoxide	M22-Au0007732	NCP	%	111			70-130	Pass	
Hexachlorobenzene	M22-Au0007732	NCP	%	97			70-130	Pass	
Methoxychlor	M22-Au0007732	NCP	%	75			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	M22-Au0006226	NCP	%	95			70-130	Pass	
Aroclor-1260	M22-Au0006226	NCP	%	92			70-130	Pass	
Spike - % Recovery									
Acid Herbicides				Result 1					
2.4-D	M22-Au0012504	NCP	%	82			70-130	Pass	
Actril (loxynil)	M22-Au0012504	NCP	%	88			70-130	Pass	
Dichlorprop	M22-Au0012504	NCP	%	101			70-130	Pass	
MCPA	M22-Jl0061660	NCP	%	80			70-130	Pass	
MCPB	M22-Au0012504	NCP	%	85			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	M22-Au0014610	NCP	%	97			30-130	Pass	
2.4-Dichlorophenol	M22-Au0009976	NCP	%	72			30-130	Pass	
2.4.5-Trichlorophenol	M22-Au0009976	NCP	%	98			30-130	Pass	
2.4.6-Trichlorophenol	M22-Au0014610	NCP	%	63			30-130	Pass	
2.6-Dichlorophenol	M22-Au0009976	NCP	%	80			30-130	Pass	
4-Chloro-3-methylphenol	M22-Au0014610	NCP	%	63			30-130	Pass	
Pentachlorophenol	M22-Au0014610	NCP	%	52			30-130	Pass	
Tetrachlorophenols - Total	M22-Au0014610	NCP	%	94			30-130	Pass	
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Cyclohexyl-4.6-dinitrophenol	M22-Au0014610	NCP	%	172			30-130	Fail	Q08
2-Methyl-4.6-dinitrophenol	M22-Au0014610	NCP	%	25			30-130	Fail	Q08
2-Nitrophenol	M22-Au0014610	NCP	%	104			30-130	Pass	
2.4-Dimethylphenol	M22-Au0014610	NCP	%	118			30-130	Pass	
2-Methylphenol (o-Cresol)	M22-Au0014610	NCP	%	98			30-130	Pass	
3&4-Methylphenol (m&p-Cresol)	M22-Au0014610	NCP	%	137			30-130	Fail	Q08
4-Nitrophenol	M22-Au0014610	NCP	%	7.2			30-130	Fail	Q08
Dinoseb	M22-Au0014610	NCP	%	129			30-130	Pass	
Phenol	M22-Au0014610	NCP	%	96			30-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	M22-Au0008121	NCP	%	79			70-130	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
				Result 1					
Chromium (hexavalent)	M22-Au0006759	NCP	%	97			70-130	Pass	
Cyanide (total)	M22-Au0004201	NCP	%	84			70-130	Pass	
Fluoride (Total)	M22-Au0008183	NCP	%	87			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium	M22-Au0003974	NCP	%	128			75-125	Fail	Q08
Arsenic	M22-Au0007841	NCP	%	111			75-125	Pass	
Barium	M22-Au0007841	NCP	%	103			75-125	Pass	
Beryllium	M22-Au0006450	NCP	%	128			75-125	Fail	Q08
Boron	M22-Au0007841	NCP	%	97			75-125	Pass	
Cadmium	M22-Au0006450	NCP	%	86			75-125	Pass	
Cobalt	M22-Au0007841	NCP	%	105			75-125	Pass	
Copper	M22-Au0007841	NCP	%	106			75-125	Pass	
Lead	M22-Au0007841	NCP	%	115			75-125	Pass	
Manganese	M22-Au0006450	NCP	%	120			75-125	Pass	
Mercury	M22-Au0007841	NCP	%	110			75-125	Pass	
Molybdenum	M22-Au0007841	NCP	%	107			75-125	Pass	
Nickel	M22-Au0007841	NCP	%	105			75-125	Pass	
Selenium	M22-Au0006450	NCP	%	128			75-125	Fail	Q08
Silver	M22-Au0006450	NCP	%	84			75-125	Pass	
Vanadium	M22-Au0007841	NCP	%	106			75-125	Pass	
Zinc	M22-Au0007841	NCP	%	92			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Solvent Screen				Result 1	Result 2	RPD			
1.1.1-Trichloroethane	B22-Au0007118	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
1.1.2-Trichloroethane	B22-Au0007118	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Butanone (MEK)	B22-Au0007118	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2-Propanone (Acetone)	B22-Au0007118	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	B22-Au0007118	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Isopropanol	M22-Jl0034070	NCP	mg/kg	**	< 2.5	<1	30%	Pass	
Trichloroethene	B22-Au0007118	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	B22-Au0007118	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	B22-Au0007118	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	B22-Au0007118	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	B22-Au0007118	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	B22-Au0007118	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	B22-Au0007118	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Monocyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Isopropyl benzene (Cumene)	B22-Au0007118	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Styrene	B22-Au0007118	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	B22-Au0007118	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	B22-Au0007118	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	B22-Au0007118	NCP	mg/kg	< 20	< 20	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	M22-Au0007731	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M22-Au0007731	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M22-Au0007731	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M22-Au0014609	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	M22-Au0014609	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	M22-Au0014609	NCP	mg/kg	< 0.5	2.0	150	30%	Fail	Q15
Benz(a)anthracene	M22-Au0014609	NCP	mg/kg	0.5	1.1	72	30%	Fail	Q15
Benzo(a)pyrene	M22-Au0014609	NCP	mg/kg	< 0.5	1.4	120	30%	Fail	Q15
Benzo(b&j)fluoranthene	M22-Au0014609	NCP	mg/kg	< 0.5	2.0	130	30%	Fail	Q15
Benzo(g.h.i)perylene	M22-Au0014609	NCP	mg/kg	< 0.5	0.8	98	30%	Fail	Q15
Benzo(k)fluoranthene	M22-Au0014609	NCP	mg/kg	< 0.5	1.5	130	30%	Fail	Q15
Chrysene	M22-Au0014609	NCP	mg/kg	< 0.5	0.6	21	30%	Pass	
Dibenz(a.h)anthracene	M22-Au0014609	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	M22-Au0014609	NCP	mg/kg	0.5	3.4	150	30%	Fail	Q15
Fluorene	M22-Au0014609	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	M22-Au0014609	NCP	mg/kg	< 0.5	0.7	100	30%	Fail	Q15
Naphthalene	M22-Au0014609	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	M22-Au0014609	NCP	mg/kg	< 0.5	1.8	150	30%	Fail	Q15
Pyrene	M22-Au0014609	NCP	mg/kg	0.6	3.4	140	30%	Fail	Q15
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	M22-Au0014609	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	M22-Au0014609	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	M22-Au0014609	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	M22-Au0014609	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	M22-Au0014609	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	M22-Au0014609	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	M22-Au0014609	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	M22-Au0014609	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	M22-Au0014609	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	M22-Au0014609	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	M22-Au0014609	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	M22-Au0014609	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	M22-Au0014609	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	M22-Au0014609	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	M22-Au0014609	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	M22-Au0014609	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	M22-Au0014609	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	M22-Au0014609	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	M22-Au0014609	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	M22-Au0014609	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	M22-Au0014609	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	M22-Au0014609	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	M22-Au0014609	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	M22-Au0014609	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	M22-Au0014609	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	M22-Au0014609	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	M22-Au0014609	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	M22-Au0014609	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	M22-Au0014609	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
Acid Herbicides				Result 1	Result 2	RPD			
2.4-D	M22-Au0012503	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-DB	M22-Au0012503	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-T	M22-Au0012503	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-TP	M22-Au0012503	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Actril (loxynil)	M22-Au0012503	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dicamba	M22-Au0012503	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dichlorprop	M22-Au0012503	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinitro-o-cresol	M22-Au0012503	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dinoseb	M22-Au0012503	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPA	M22-Au0012503	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
MCPB	M22-Au0012503	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Mecoprop	M22-Au0012503	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	M22-Au0014609	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dichlorophenol	M22-Au0014609	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4.5-Trichlorophenol	M22-Au0014609	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4.6-Trichlorophenol	M22-Au0014609	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.6-Dichlorophenol	M22-Au0014609	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
4-Chloro-3-methylphenol	M22-Au0014609	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Pentachlorophenol	M22-Au0014609	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Tetrachlorophenols - Total	M22-Au0014609	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Phenols (non-Halogenated)				Result 1	Result 2	RPD			
2-Cyclohexyl-4.6-dinitrophenol	M22-Au0014609	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
2-Methyl-4.6-dinitrophenol	M22-Au0014609	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Nitrophenol	M22-Au0014609	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
2.4-Dimethylphenol	M22-Au0014609	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
2.4-Dinitrophenol	M22-Au0014609	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
2-Methylphenol (o-Cresol)	M22-Au0014609	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
3&4-Methylphenol (m&p-Cresol)	M22-Au0014609	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
4-Nitrophenol	M22-Au0014609	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Dinoseb	M22-Au0014609	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Phenol	M22-Au0014609	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	M22-Au0007731	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	M22-Au0007731	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M22-Au0007731	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chromium (hexavalent)	M22-Au0006226	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Cyanide (total)	M22-Au0004199	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Cyanide (weak acid dissoc.)	M22-Au0004199	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Fluoride (Total)	M22-Au0008320	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
pH (1:5 Aqueous extract at 25 °C as rec.)	M22-Au0006785	NCP	pH Units	6.7	6.6	pass	30%	Pass	
% Moisture	L22-Jl0061266	NCP	%	5.1	5.1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	M22-Au0006450	NCP	mg/kg	5600	5700	1.7	30%	Pass	
Arsenic	M22-Au0006450	NCP	mg/kg	54	56	2.8	30%	Pass	
Barium	M22-Au0006450	NCP	mg/kg	21	21	<1	30%	Pass	
Beryllium	M22-Au0006450	NCP	mg/kg	< 2	< 2	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Boron	M22-Au0006450	NCP	mg/kg	< 10	< 10	<1	30%	Pass	
Cadmium	M22-Au0006450	NCP	mg/kg	< 1	< 1	<1	30%	Pass	
Cobalt	M22-Au0006450	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Copper	M22-Au0006450	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Lead	M22-Au0006450	NCP	mg/kg	12	12	1.9	30%	Pass	
Manganese	M22-Au0006450	NCP	mg/kg	40	40	1.1	30%	Pass	
Mercury	M22-Au0006450	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Molybdenum	M22-Au0006450	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Nickel	M22-Au0006450	NCP	mg/kg	7.8	8.0	3.3	30%	Pass	
Selenium	M22-Au0006450	NCP	mg/kg	< 5	< 5	<1	30%	Pass	
Silver	M22-Au0006450	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Vanadium	M22-Au0006450	NCP	mg/kg	99	99	<1	30%	Pass	
Zinc	M22-Au0006450	NCP	mg/kg	11	11	1.5	30%	Pass	
Duplicate									
Acid Sulfate Soils Field pH Test				Result 1	Result 2	RPD			
pH-F (Field pH test)*	B22-Au0021562	NCP	pH Units	9.3	9.4	pass	20%	Pass	
Duplicate									
PFAS (Full Suite) Soil				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	L22-Jl0062431	CP	mg/kg	< 0.0008	< 0.0008	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	L22-Jl0062431	CP	mg/kg	< 0.0002	< 0.0002	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	L22-Jl0062431	CP	mg/kg	< 0.0004	< 0.0004	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	L22-Jl0062431	CP	mg/kg	< 0.0008	< 0.0008	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	L22-Jl0062431	CP	mg/kg	< 0.0002	< 0.0002	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	L22-Jl0062431	CP	mg/kg	< 0.0002	< 0.0002	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	L22-Jl0062431	CP	mg/kg	< 0.0002	< 0.0002	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	L22-Jl0062431	CP	mg/kg	< 0.0002	< 0.0002	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	L22-Jl0062431	CP	mg/kg	< 0.0002	< 0.0002	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	L22-Jl0062431	CP	mg/kg	< 0.0002	< 0.0002	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	L22-Jl0062431	CP	mg/kg	< 0.0002	< 0.0002	<1	30%	Pass	
Perfluorobutane sulfonic acid (PFBS)	L22-Jl0062431	CP	mg/kg	< 0.0004	< 0.0004	<1	30%	Pass	
Perfluoropentane sulfonic acid (PFPeS)	L22-Jl0062431	CP	mg/kg	< 0.0004	< 0.0004	<1	30%	Pass	
Perfluorohexane sulfonic acid (PFHxS)	L22-Jl0062431	CP	mg/kg	< 0.0004	< 0.0004	<1	30%	Pass	
Perfluoroheptane sulfonic acid (PFHpS)	L22-Jl0062431	CP	mg/kg	< 0.0004	< 0.0004	<1	30%	Pass	
Perfluorooctane sulfonic acid (PFOS)	L22-Jl0062431	CP	mg/kg	< 0.0004	< 0.0004	<1	30%	Pass	
Perfluorodecane sulfonic acid (PFDS)	L22-Jl0062431	CP	mg/kg	< 0.0004	< 0.0004	<1	30%	Pass	
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	L22-Jl0062431	CP	mg/kg	< 0.0005	< 0.0005	<1	30%	Pass	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	L22-Jl0062431	CP	mg/kg	< 0.0005	< 0.0005	<1	30%	Pass	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	L22-Jl0062431	CP	mg/kg	< 0.0005	< 0.0005	<1	30%	Pass	
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	L22-Jl0062431	CP	mg/kg	< 0.0005	< 0.0005	<1	30%	Pass	
Perfluorooctane sulfonamide (FOSA)	L22-Jl0062431	CP	mg/kg	< 0.0004	< 0.0004	<1	30%	Pass	
N-Methyl perfluorooctane sulfonamide (Me-FOSA)	L22-Jl0062431	CP	mg/kg	< 0.0004	< 0.0004	<1	30%	Pass	
N-Ethyl perfluorooctane sulfonamide (Et-FOSA)	L22-Jl0062431	CP	mg/kg	< 0.0004	< 0.0004	<1	30%	Pass	

Duplicate									
PFAS (Full Suite) Soil				Result 1	Result 2	RPD			
Perfluorooctane sulfonamidoacetic acid (FOSAA)	L22-JI0062431	CP	mg/kg	< 0.0004	< 0.0004	<1	30%	Pass	
N-Methyl perfluorooctane sulfonamidoacetic acid (Me-FOSAA)	L22-JI0062431	CP	mg/kg	< 0.0004	< 0.0004	<1	30%	Pass	
N-Ethyl perfluorooctane sulfonamidoacetic acid (Et-FOSAA)	L22-JI0062431	CP	mg/kg	< 0.0004	< 0.0004	<1	30%	Pass	
N-Methyl perfluorooctane sulfonamidoethanol (N-Me-FOSE)	L22-JI0062431	CP	mg/kg	< 0.0008	< 0.0008	<1	30%	Pass	
N-Ethyl perfluorooctane sulfonamidoethanol (N-Et-FOSE)	L22-JI0062431	CP	mg/kg	< 0.0008	< 0.0008	<1	30%	Pass	
Sum of PFAS	L22-JI0062431	CP	mg/kg	< 0.0002	< 0.0002	<1	30%	Pass	
Sum of PFHxS and PFOS	L22-JI0062431	CP	mg/kg	< 0.0004	< 0.0004	<1	30%	Pass	
Sum of PFAS (WA DER List)	L22-JI0062431	CP	mg/kg	< 0.0002	< 0.0002	<1	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	N/A
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.
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.
S02	Retained Acidity is Reported when the pHKCl is less than pH 4.5
S05	Field Screen uses the following fizz rating to classify the rate the samples reacted to the peroxide: 1.0; No reaction to slight. 2.0; Moderate reaction. 3.0; Strong reaction with persistent froth. 4.0; Extreme reaction.

Authorised by:

Elden Garrett	Analytical Services Manager
Edward Lee	Senior Analyst-Organic
Harry Bacalis	Senior Analyst-Volatile
Joseph Edouard	Senior Analyst-Organic
Joseph Edouard	Senior Analyst-Volatile
Mary Makarios	Senior Analyst-Inorganic
Myles Clark	Senior Analyst-SPOCAS
Paul Nottle	Senior Analyst-PFAS
Rhys Thomas	Senior Analyst-Asbestos
Scott Beddoes	Senior Analyst-Inorganic
Scott Beddoes	Senior Analyst-Metal
Vivian Wang	Senior Analyst-Volatile

Kim Rodgers
Business Unit 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

Aurecon Australia (WA) Pty Ltd
Level 5, 863 Hay Street
Perth
WA 6000

NATA Accredited
Accreditation Number 2377
Site Number 2370

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: **Will Dumble**

Report **917053-W**
Project name Quantem Bumbury Terminal GME
Project ID P521240
Received Date Aug 24, 2022

Client Sample ID			**QC202_220816**
Sample Matrix			**Water**
Eurofins Sample No.			**L22-Au0054398**
Date Sampled			**Aug 16, 2022**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.02	mg/L	< 0.02
TRH C15-C28	0.04	mg/L	0.08
TRH C29-C36	0.04	mg/L	0.05
TRH C10-C36 (Total)	0.04	mg/L	< 0.1
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
BTEX			
4-Bromofluorobenzene (surr.)	1	%	101
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.001	mg/L	< 0.001
TRH >C10-C16 less Naphthalene (F2)[N01]	0.02	mg/L	< 0.02
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
VOCs in Water by GCMS			
Benzene	0.5	ug/L	< 0.5
Carbon tetrachloride	0.5	ug/L	< 0.5
Chlorobenzene	0.5	ug/L	< 0.5
DCM	5	ug/L	< 5
Ethylbenzene	0.5	ug/L	< 0.5
Hexachlorobutadiene	0.5	ug/L	< 0.5
Methyl tert Butyl Ether	0.5	ug/L	< 0.5
Styrene	0.5	ug/L	< 0.5
Perchloroethene (PCE)	0.5	ug/L	< 0.5
Toluene	0.5	ug/L	< 0.5
Trichloroethylene(TCE)	0.5	ug/L	< 0.5
Vinyl Chloride	0.2	ug/L	< 0.2
Xylenes (Total)	3	ug/L	< 3
1.1-Dichloroethane	0.5	ug/L	< 0.5

Client Sample ID			QC202_220816
Sample Matrix			Water
Eurofins Sample No.			L22-Au0054398
Date Sampled			Aug 16, 2022
Test/Reference	LOR	Unit	
VOCs in Water by GCMS			
1.2-Dichloroethane	0.5	ug/L	< 0.5
1.1-Dichloroethene	0.5	ug/L	< 0.5
cis-1.2-Dichloroethene	0.5	ug/L	< 0.5
trans-1.2-Dichloroethene	2	ug/L	< 2
1.1.1-Trichloroethane	0.5	ug/L	< 0.5
1.1.1.2-Tetrachloroethane	0.5	ug/L	< 0.5
1.1.2.2-Tetrachloroethane	0.5	ug/L	< 0.5
1.2-Dichlorobenzene	0.5	ug/L	< 0.5
1.3-Dichlorobenzene	0.5	ug/L	< 0.5
1.4-Dichlorobenzene	0.5	ug/L	< 0.5
1.2.3-Trichlorobenzene	0.5	ug/L	< 0.5
1.2.4-Trichlorobenzene	0.5	ug/L	< 0.5
1.3.5-Trichlorobenzene	0.5	ug/L	< 0.5
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.001	mg/L	< 0.001
Benzo(a)pyrene TEQ (medium bound) *	0.001	mg/L	0.001
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
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	%	143
p-Terphenyl-d14 (surr.)	1	%	149
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
a-HCH	0.0002	mg/L	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002
b-HCH	0.0002	mg/L	< 0.0002
d-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

Client Sample ID			QC202_220816
Sample Matrix			Water
Eurofins Sample No.			L22-Au0054398
Date Sampled			Aug 16, 2022
Test/Reference	LOR	Unit	
Organochlorine Pesticides			
Endrin aldehyde	0.0002	mg/L	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002
g-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
Dibutylchlorendate (surr.)	1	%	122
Tetrachloro-m-xylene (surr.)	1	%	129
Aliphatic / Aromatic TRH (NEPM)			
TRH >C35 Aliphatic	0.2	mg/L	< 0.2
TRH C16-C35 Aliphatic	0.2	mg/L	< 0.2
TRH C16-C35 Aromatic	0.09	mg/L	< 0.09
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	%	30
Total Non-Halogenated Phenol*	0.1	mg/L	< 0.1
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
TRH >C10-C16	0.02	mg/L	< 0.02
TRH >C16-C34	0.05	mg/L	0.12
TRH >C34-C40	0.05	mg/L	< 0.05
TRH >C10-C40 (total)*	0.05	mg/L	0.12

Client Sample ID			QC202_220816
Sample Matrix			Water
Eurofins Sample No.			L22-Au0054398
Date Sampled			Aug 16, 2022
Test/Reference	LOR	Unit	
Acidic Herbicides in Water			
Dicamba	0.1	ug/L	< 0.1
MCPA	0.1	ug/L	< 0.1
2.4-D	0.1	ug/L	< 0.1
2.4.5-T	0.1	ug/L	< 0.1
2.4.6-T	0.1	ug/L	< 0.1
Picloram	0.2	ug/L	< 0.2
Fluazifop	0.4	ug/L	< 0.4
Clopyralid	0.4	ug/L	< 0.4
Metsulfuron Methyl	0.5	ug/L	< 0.5
Triclopyr	0.1	ug/L	< 0.1
Chromium (VI)	0.002	mg/L	< 0.002
Cyanide - Total	0.005	mg/L	< 0.005
Cyanide - WAD	0.005	mg/L	< 0.005
Fluoride	0.1	mg/L	0.7
pH	0.1	pH Units	7.9
Heavy Metals			
Aluminium	0.05	mg/L	0.13
Arsenic	0.001	mg/L	0.009
Barium	0.01	mg/L	0.03
Beryllium	0.001	mg/L	< 0.001
Boron	0.05	mg/L	0.36
Cadmium	0.0001	mg/L	< 0.0001
Chromium	0.001	mg/L	0.002
Cobalt	0.001	mg/L	< 0.001
Copper	0.001	mg/L	< 0.001
Lead	0.001	mg/L	< 0.001
Manganese	0.005	mg/L	0.14
Mercury	0.0001	mg/L	< 0.0001
Molybdenum	0.001	mg/L	0.007
Nickel	0.001	mg/L	0.002
Selenium	0.001	mg/L	< 0.001
Silver	0.001	mg/L	< 0.001
Tin	0.001	mg/L	< 0.001
Vanadium	0.005	mg/L	< 0.005
Zinc	0.005	mg/L	< 0.005
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	92

Client Sample ID			QC202_220816
Sample Matrix			Water
Eurofins Sample No.			L22-Au0054398
Date Sampled			Aug 16, 2022
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
13C5-PFPeA (surr.)	1	%	125
13C5-PFHxA (surr.)	1	%	129
13C4-PFHpA (surr.)	1	%	73
13C8-PFOA (surr.)	1	%	68
13C5-PFNA (surr.)	1	%	74
13C6-PFDA (surr.)	1	%	72
13C2-PFUnDA (surr.)	1	%	99
13C2-PFDoDA (surr.)	1	%	115
13C2-PFTeDA (surr.)	1	%	107
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)[N11]	0.05	ug/L	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)[N11]	0.05	ug/L	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05
13C8-FOSA (surr.)	1	%	108
D3-N-MeFOSA (surr.)	1	%	100
D5-N-EtFOSA (surr.)	1	%	97
D7-N-MeFOSE (surr.)	1	%	59
D9-N-EtFOSE (surr.)	1	%	65
D5-N-EtFOSAA (surr.)	1	%	166
D3-N-MeFOSAA (surr.)	1	%	102
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01
13C3-PFBS (surr.)	1	%	141
18O2-PFHxS (surr.)	1	%	136
13C8-PFOS (surr.)	1	%	87
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)[N11]	0.05	ug/L	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01
13C2-4:2 FTSA (surr.)	1	%	127
13C2-6:2 FTSA (surr.)	1	%	42

Client Sample ID			QC202_220816
Sample Matrix			**Water**
Eurofins Sample No.			**L22-Au0054398**
Date Sampled			**Aug 16, 2022**
Test/Reference	LOR	Unit	
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
13C2-8:2 FTSA (surr.)	1	%	48
13C2-10:2 FTSA (surr.)	1	%	61
PFASs Summations			
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1

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	Welshpool	Aug 24, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Welshpool	Aug 24, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Welshpool	Aug 24, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Welshpool	Aug 24, 2022	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Welshpool	Aug 24, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
VOCs in Water by GCMS	Welshpool	Aug 24, 2022	14 Days
- Method: ARL132 - Purgeable Volatile Organic Compounds in Water by GCMS			
Organochlorine Pesticides	Welshpool	Aug 24, 2022	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Aliphatic / Aromatic TRH (NEPM)	Melbourne	Aug 30, 2022	7 Days
- Method: LM-LTM-ORG-2020 Health Risk Assessment Fractionation of Petroleum Hydrocarbons			
Acidic Herbicides in Water	Welshpool	Aug 30, 2022	7 Days
- Method: ARL No. 055 - Chlorinated Acidic Herbicides in Water			
Chromium (VI)	Welshpool	Aug 24, 2022	1 Day
- Method: ARL316 - Hexavalent Chromium in Water by Discrete Analyser			
Cyanide - Total	Welshpool	Aug 24, 2022	14 Day
- Method: ARL No. 317 - Total Cyanide by Microdistillation			
Cyanide - WAD	Welshpool	Aug 24, 2022	14 Day
- Method: ARL No. 318 - Weak Acid Dissociable Cyanide by Microdistillation			
Fluoride	Welshpool	Aug 24, 2022	28 Days
- Method: ARL321 - Fluoride in Water by Discrete Analyser			
pH	Welshpool	Aug 24, 2022	1 Day
- Method: ARL014 - pH in Water			
Heavy Metals	Welshpool	Aug 24, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Phenols (Halogenated)	Welshpool	Aug 24, 2022	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water by GC MSMS			
Phenols (non-Halogenated)	Welshpool	Aug 24, 2022	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water by GC MSMS			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	Sep 05, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	Sep 05, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Brisbane	Sep 05, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	Sep 05, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

eurofins

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Company Name: Aurecon Australia (WA) Pty Ltd
Address: Level 5, 863 Hay Street
Perth
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Project Name: Quantem Bumbury Terminal GME
Project ID: P521240

Order No.: P521240
Report #: 917053
Phone: 08 6104 2816
Fax: 08 9223 1605

Received: Aug 24, 2022 9:00 AM
Due: Sep 2, 2022
Priority: 7 Day
Contact Name: Will Dumble

Eurofins Analytical Services Manager : Elden Garrett

Sample Detail						Aluminium	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium	Chromium (VI)	Cobalt	Copper	Cyanide - Total	Cyanide - WAD	Fluoride	Lead	Manganese	Mercury	Molybdenum	Nickel	pH	Selenium	Silver	Tin	Vanadium	Zinc	Organochlorine Pesticides	Polychlorinated Biphenyls	Acid Herbicides	Aliphatic / Aromatic TRH (NEPM)	Phenols (Speciated)	Eurofins Suite B4	Per- and Polyfluoroalkyl Substances (PFASs)	VOCs in Water by GCMS
Perth Laboratory - NATA # 2377 Site # 2370						X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					X	X		X
Melbourne Laboratory - NATA # 1261 Site # 1254																															X				X		
Sydney Laboratory - NATA # 1261 Site # 18217																														X		X				X	
External Laboratory																																					
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**																																
1	QC202_220816	Aug 16, 2022		Water	L22-Au0054398	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Test Counts						1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples 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

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 (*bis*-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.

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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 - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C15-C28	mg/L	< 0.04			0.04	Pass	
TRH C29-C36	mg/L	< 0.04			0.04	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	< 0.001			0.001	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
Method Blank							
VOCs in Water by GCMS							
Benzene	ug/L	< 0.5			0.5	Pass	
Carbon tetrachloride	ug/L	< 0.5			0.5	Pass	
Chlorobenzene	ug/L	< 0.5			0.5	Pass	
DCM	ug/L	< 5			5	Pass	
Ethylbenzene	ug/L	< 0.5			0.5	Pass	
Hexachlorobutadiene	ug/L	< 0.5			0.5	Pass	
Methyl tert Butyl Ether	ug/L	< 0.5			0.5	Pass	
Styrene	ug/L	< 0.5			0.5	Pass	
Perchloroethene (PCE)	ug/L	< 0.5			0.5	Pass	
Toluene	ug/L	< 0.5			0.5	Pass	
Trichloroethylene(TCE)	ug/L	< 0.5			0.5	Pass	
Vinyl Chloride	ug/L	< 0.2			0.2	Pass	
Xylenes (Total)	ug/L	< 3			3	Pass	
1.1-Dichloroethane	ug/L	< 0.5			0.5	Pass	
1.2-Dichloroethane	ug/L	< 0.5			0.5	Pass	
1.1-Dichloroethene	ug/L	< 0.5			0.5	Pass	
cis-1.2-Dichloroethene	ug/L	< 0.5			0.5	Pass	
trans-1.2-Dichloroethene	ug/L	< 2			2	Pass	
1.1.1-Trichloroethane	ug/L	< 0.5			0.5	Pass	
1.1.1.2-Tetrachloroethane	ug/L	< 0.5			0.5	Pass	
1.1.2.2-Tetrachloroethane	ug/L	< 0.5			0.5	Pass	
1.2-Dichlorobenzene	ug/L	< 0.5			0.5	Pass	
1.3-Dichlorobenzene	ug/L	< 0.5			0.5	Pass	
1.4-Dichlorobenzene	ug/L	< 0.5			0.5	Pass	
1.2.3-Trichlorobenzene	ug/L	< 0.5			0.5	Pass	
1.2.4-Trichlorobenzene	ug/L	< 0.5			0.5	Pass	
1.3.5-Trichlorobenzene	ug/L	< 0.5			0.5	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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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							
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	
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	
Phenol	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/L	0.02			0.02	Pass	
TRH >C16-C34	mg/L	< 0.05			0.05	Pass	
TRH >C34-C40	mg/L	< 0.05			0.05	Pass	
Method Blank							
Chromium (VI)	mg/L	< 0.002			0.002	Pass	
Cyanide - Total	mg/L	< 0.005			0.005	Pass	
Cyanide - WAD	mg/L	< 0.005			0.005	Pass	
Fluoride	mg/L	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Aluminium	mg/L	< 0.05			0.05	Pass	
Arsenic	mg/L	< 0.001			0.001	Pass	
Barium	mg/L	< 0.01			0.01	Pass	
Beryllium	mg/L	< 0.001			0.001	Pass	
Boron	mg/L	< 0.05			0.05	Pass	
Cadmium	mg/L	< 0.0001			0.0001	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Cobalt	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Manganese	mg/L	< 0.005			0.005	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Molybdenum	mg/L	< 0.001			0.001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Selenium	mg/L	< 0.001			0.001	Pass	
Silver	mg/L	< 0.001			0.001	Pass	
Tin	mg/L	< 0.001			0.001	Pass	
Vanadium	mg/L	< 0.005			0.005	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	88			70-130	Pass	
TRH C10-C14	%	87			70-130	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
BTEX							
Benzene	%	112			70-130	Pass	
Toluene	%	112			70-130	Pass	
Ethylbenzene	%	112			70-130	Pass	
m&p-Xylenes	%	108			70-130	Pass	
o-Xylene	%	117			70-130	Pass	
Xylenes - Total*	%	111			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	115			70-130	Pass	
TRH C6-C10	%	86			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	110			70-130	Pass	
Acenaphthylene	%	99			70-130	Pass	
Anthracene	%	119			70-130	Pass	
Benz(a)anthracene	%	114			70-130	Pass	
Benzo(a)pyrene	%	117			70-130	Pass	
Benzo(b&j)fluoranthene	%	107			70-130	Pass	
Benzo(g.h.i)perylene	%	113			70-130	Pass	
Benzo(k)fluoranthene	%	112			70-130	Pass	
Chrysene	%	114			70-130	Pass	
Dibenz(a.h)anthracene	%	117			70-130	Pass	
Fluoranthene	%	96			70-130	Pass	
Fluorene	%	107			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	109			70-130	Pass	
Naphthalene	%	114			70-130	Pass	
Phenanthrene	%	115			70-130	Pass	
Pyrene	%	111			70-130	Pass	
LCS - % Recovery							
Phenols (Halogenated)							
2-Chlorophenol	%	91			25-140	Pass	
2.4-Dichlorophenol	%	80			25-140	Pass	
2.4.5-Trichlorophenol	%	72			25-140	Pass	
2.4.6-Trichlorophenol	%	80			25-140	Pass	
2.6-Dichlorophenol	%	79			25-140	Pass	
4-Chloro-3-methylphenol	%	55			25-140	Pass	
Pentachlorophenol	%	63			25-140	Pass	
Tetrachlorophenols - Total	%	72			25-140	Pass	
LCS - % Recovery							
Phenols (non-Halogenated)							
2-Cyclohexyl-4.6-dinitrophenol	%	37			25-140	Pass	
2-Methyl-4.6-dinitrophenol	%	70			25-140	Pass	
2-Nitrophenol	%	83			25-140	Pass	
2.4-Dimethylphenol	%	69			25-140	Pass	
2.4-Dinitrophenol	%	56			25-140	Pass	
2-Methylphenol (o-Cresol)	%	65			25-140	Pass	
3&4-Methylphenol (m&p-Cresol)	%	50			25-140	Pass	
4-Nitrophenol	%	38			25-140	Pass	
Dinoseb	%	61			25-140	Pass	
Phenol	%	32			25-140	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	80			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Acidic Herbicides in Water							
Dicamba	%	92			60-120	Pass	
MCPA	%	92			60-120	Pass	
2.4-D	%	92			60-120	Pass	
2.4.5-T	%	101			60-120	Pass	
2.4.6-T	%	98			60-120	Pass	
LCS - % Recovery							
Heavy Metals							
Aluminium	%	96			80-120	Pass	
Arsenic	%	104			80-120	Pass	
Barium	%	99			80-120	Pass	
Beryllium	%	97			80-120	Pass	
Boron	%	96			80-120	Pass	
Cadmium	%	104			80-120	Pass	
Chromium	%	100			80-120	Pass	
Cobalt	%	99			80-120	Pass	
Copper	%	96			80-120	Pass	
Lead	%	98			80-120	Pass	
Manganese	%	98			80-120	Pass	
Mercury	%	96			80-120	Pass	
Molybdenum	%	105			80-120	Pass	
Nickel	%	97			80-120	Pass	
Selenium	%	101			80-120	Pass	
Silver	%	103			80-120	Pass	
Tin	%	99			80-120	Pass	
Vanadium	%	102			80-120	Pass	
Zinc	%	95			80-120	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	87			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	87			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	87			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	87			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	83			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	80			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	79			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	88			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	88			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	144			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	104			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	83			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	88			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	88			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	%	95			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	%	95			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	80			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	83			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	89			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	79			50-150	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoropropanesulfonic acid (PFPrS)			%	87			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)			%	90			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)			%	90			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)			%	100			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)			%	82			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)			%	59			50-150	Pass	
LCS - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)									
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)			%	86			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)			%	86			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)			%	83			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)			%	92			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	L22-Au0057495	NCP	%	88			70-130	Pass	
TRH C10-C14	L22-Au0056030	NCP	%	97			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	L22-Au0057495	NCP	%	101			70-130	Pass	
Toluene	L22-Au0057495	NCP	%	102			70-130	Pass	
Ethylbenzene	L22-Au0057495	NCP	%	102			70-130	Pass	
m&p-Xylenes	L22-Au0057495	NCP	%	100			70-130	Pass	
o-Xylene	L22-Au0057495	NCP	%	106			70-130	Pass	
Xylenes - Total*	L22-Au0057495	NCP	%	102			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	L22-Au0057495	NCP	%	100			70-130	Pass	
TRH C6-C10	L22-Au0057495	NCP	%	86			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	L22-Au0063342	NCP	%	93			70-130	Pass	
Acenaphthylene	L22-Au0063342	NCP	%	95			70-130	Pass	
Anthracene	L22-Au0063342	NCP	%	88			70-130	Pass	
Benz(a)anthracene	L22-Au0063342	NCP	%	113			70-130	Pass	
Benzo(a)pyrene	L22-Au0063342	NCP	%	105			70-130	Pass	
Benzo(b&j)fluoranthene	L22-Au0063342	NCP	%	108			70-130	Pass	
Benzo(g.h.i)perylene	L22-Au0072319	NCP	%	106			70-130	Pass	
Benzo(k)fluoranthene	L22-Au0063342	NCP	%	111			70-130	Pass	
Chrysene	L22-Au0063342	NCP	%	102			70-130	Pass	
Dibenz(a.h)anthracene	L22-Au0063342	NCP	%	85			70-130	Pass	
Fluoranthene	L22-Au0063342	NCP	%	77			70-130	Pass	
Fluorene	L22-Au0063342	NCP	%	84			70-130	Pass	
Indeno(1.2.3-cd)pyrene	L22-Au0063342	NCP	%	90			70-130	Pass	
Naphthalene	L22-Au0063342	NCP	%	97			70-130	Pass	
Phenanthrene	L22-Au0063342	NCP	%	90			70-130	Pass	
Pyrene	L22-Au0063342	NCP	%	78			70-130	Pass	
Spike - % Recovery									
Phenols (Halogenated)				Result 1					
2-Chlorophenol	L22-Se0010145	NCP	%	94			30-130	Pass	
2.4-Dichlorophenol	L22-Se0010145	NCP	%	103			30-130	Pass	
2.4.5-Trichlorophenol	L22-Se0010145	NCP	%	115			30-130	Pass	
2.6-Dichlorophenol	L22-Se0010145	NCP	%	118			30-130	Pass	
4-Chloro-3-methylphenol	L22-Se0010145	NCP	%	100			30-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Phenols (non-Halogenated)				Result 1					
2-Nitrophenol	L22-Se0010145	NCP	%	100			30-130	Pass	
2-Methylphenol (o-Cresol)	L22-Se0010145	NCP	%	69			30-130	Pass	
Phenol	L22-Se0010145	NCP	%	33			30-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	L22-Au0056030	NCP	%	87			70-130	Pass	
Spike - % Recovery									
				Result 1					
Chromium (VI)	L22-Au0052991	NCP	%	95			80-120	Pass	
Fluoride	L22-Au0052991	NCP	%	119			80-120	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Aluminium	L22-Au0067754	NCP	%	98			75-125	Pass	
Arsenic	L22-Au0067754	NCP	%	110			75-125	Pass	
Barium	L22-Au0067754	NCP	%	104			75-125	Pass	
Beryllium	L22-Au0067754	NCP	%	93			75-125	Pass	
Boron	L22-Au0067754	NCP	%	94			75-125	Pass	
Cadmium	L22-Au0067754	NCP	%	108			75-125	Pass	
Chromium	L22-Au0067754	NCP	%	99			75-125	Pass	
Cobalt	L22-Au0067754	NCP	%	99			75-125	Pass	
Copper	L22-Au0067754	NCP	%	97			75-125	Pass	
Lead	L22-Au0067754	NCP	%	95			75-125	Pass	
Manganese	L22-Au0067754	NCP	%	98			75-125	Pass	
Mercury	L22-Au0067754	NCP	%	93			75-125	Pass	
Molybdenum	L22-Au0067754	NCP	%	104			75-125	Pass	
Nickel	L22-Au0067754	NCP	%	97			75-125	Pass	
Selenium	L22-Au0067754	NCP	%	107			75-125	Pass	
Silver	L22-Au0067754	NCP	%	104			75-125	Pass	
Tin	L22-Au0067754	NCP	%	102			75-125	Pass	
Vanadium	L22-Au0067754	NCP	%	103			75-125	Pass	
Zinc	L22-Au0067754	NCP	%	98			75-125	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	L22-Au0054398	CP	%	89			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	L22-Au0054398	CP	%	84			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	L22-Au0054398	CP	%	86			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	L22-Au0054398	CP	%	87			50-150	Pass	
Perfluorooctanoic acid (PFOA)	L22-Au0054398	CP	%	85			50-150	Pass	
Perfluorononanoic acid (PFNA)	L22-Au0054398	CP	%	79			50-150	Pass	
Perfluorodecanoic acid (PFDA)	L22-Au0054398	CP	%	77			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	L22-Au0054398	CP	%	85			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	L22-Au0054398	CP	%	80			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	L22-Au0054398	CP	%	146			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	L22-Au0054398	CP	%	87			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	L22-Au0054398	CP	%	82			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	L22-Au0054398	CP	%	76			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	L22-Au0054398	CP	%	76			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	L22-Au0054398	CP	%	80			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	L22-Au0054398	CP	%	81			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	L22-Au0054398	CP	%	76			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	L22-Au0054398	CP	%	81			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	L22-Au0054398	CP	%	85			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	L22-Au0054398	CP	%	83			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	L22-Au0054398	CP	%	84			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	L22-Au0054398	CP	%	88			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	L22-Au0054398	CP	%	87			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	L22-Au0054398	CP	%	92			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	L22-Au0054398	CP	%	84			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	L22-Au0054398	CP	%	67			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	L22-Au0054398	CP	%	90			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	L22-Au0054398	CP	%	86			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	L22-Au0054398	CP	%	76			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	L22-Au0054398	CP	%	73			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	L22-Au0059815	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	L22-Au0051170	NCP	mg/L	< 0.02	< 0.05	<1	30%	Pass	
TRH C15-C28	L22-Au0051170	NCP	mg/L	< 0.04	< 0.1	<1	30%	Pass	
TRH C29-C36	L22-Au0051170	NCP	mg/L	< 0.04	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	L22-Au0059815	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	L22-Au0059815	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	L22-Au0059815	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	L22-Au0059815	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	L22-Au0059815	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	L22-Au0059815	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	L22-Au0059815	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	L22-Au0059815	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	L22-Au0051170	NCP	mg/L	< 0.001	**	<1	30%	Pass	
Acenaphthylene	L22-Au0051170	NCP	mg/L	< 0.001	**	<1	30%	Pass	
Anthracene	L22-Au0051170	NCP	mg/L	< 0.001	**	<1	30%	Pass	
Benz(a)anthracene	L22-Au0051170	NCP	mg/L	< 0.001	**	<1	30%	Pass	
Benzo(a)pyrene	L22-Au0051170	NCP	mg/L	< 0.001	**	<1	30%	Pass	
Benzo(b&j)fluoranthene	L22-Au0051170	NCP	mg/L	< 0.001	**	<1	30%	Pass	
Benzo(g.h.i)perylene	L22-Au0051170	NCP	mg/L	< 0.001	**	<1	30%	Pass	
Benzo(k)fluoranthene	L22-Au0051170	NCP	mg/L	< 0.001	**	<1	30%	Pass	
Chrysene	L22-Au0051170	NCP	mg/L	< 0.001	**	<1	30%	Pass	
Dibenz(a.h)anthracene	L22-Au0051170	NCP	mg/L	< 0.001	**	<1	30%	Pass	
Fluoranthene	L22-Au0051170	NCP	mg/L	< 0.001	**	<1	30%	Pass	
Fluorene	L22-Au0051170	NCP	mg/L	< 0.001	**	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	L22-Au0051170	NCP	mg/L	< 0.001	**	<1	30%	Pass	
Naphthalene	L22-Au0051170	NCP	mg/L	< 0.001	**	<1	30%	Pass	
Phenanthrene	L22-Au0051170	NCP	mg/L	< 0.001	**	<1	30%	Pass	
Pyrene	L22-Au0051170	NCP	mg/L	< 0.001	**	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Aldrin and Dieldrin (Total)*	L22-Au0054398	CP	mg/L	< 0.0002	n/a	n/a	30%	Pass	
Duplicate									
Phenols (Halogenated)				Result 1	Result 2	RPD			
2-Chlorophenol	L22-Au0051170	NCP	mg/L	**	**	<1	30%	Pass	
2.4-Dichlorophenol	L22-Au0051170	NCP	mg/L	**	**	<1	30%	Pass	
2.4.5-Trichlorophenol	L22-Au0051170	NCP	mg/L	**	**	<1	30%	Pass	
2.4.6-Trichlorophenol	L22-Au0051170	NCP	mg/L	**	**	<1	30%	Pass	
2.6-Dichlorophenol	L22-Au0051170	NCP	mg/L	**	**	<1	30%	Pass	
4-Chloro-3-methylphenol	L22-Au0051170	NCP	mg/L	**	**	<1	30%	Pass	
Pentachlorophenol	L22-Au0051170	NCP	mg/L	**	**	<1	30%	Pass	
Tetrachlorophenols - Total	L22-Au0051170	NCP	mg/L	**	**	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	L22-Au0051170	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	L22-Au0051170	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	L22-Au0051170	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Chromium (VI)	L22-Au0054141	NCP	mg/L	< 0.002	< 0.002	<1	20%	Pass	
Cyanide - Total	L22-Au0054398	CP	mg/L	< 0.005	< 0.005	<1	20%	Pass	
Cyanide - WAD	L22-Au0054398	CP	mg/L	< 0.005	< 0.005	<1	20%	Pass	
Fluoride	L22-Au0054141	NCP	mg/L	< 0.1	< 0.1	<1	20%	Pass	
pH	L22-Au0054398	CP	pH Units	7.9	7.9	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Aluminium	L22-Au0067129	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Arsenic	L22-Au0067129	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Barium	L22-Au0067129	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Beryllium	L22-Au0067129	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Boron	L22-Au0067129	NCP	mg/L	0.45	0.45	<1	30%	Pass	
Cadmium	L22-Au0067129	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Chromium	L22-Au0067129	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Cobalt	L22-Au0067129	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	L22-Au0067129	NCP	mg/L	0.031	0.028	9.3	30%	Pass	
Lead	L22-Au0067129	NCP	mg/L	0.002	0.002	6.6	30%	Pass	
Manganese	L22-Au0067129	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Mercury	L22-Au0067129	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Molybdenum	L22-Au0067129	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Nickel	L22-Au0067129	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Selenium	L22-Au0067129	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Silver	L22-Au0067129	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Tin	L22-Au0067129	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Vanadium	L22-Au0067129	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Zinc	L22-Au0067129	NCP	mg/L	0.024	0.021	10	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S22-Se0008132	NCP	ug/L	0.75	0.77	3.4	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S22-Se0008132	NCP	ug/L	0.47	0.47	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S22-Se0008132	NCP	ug/L	0.60	0.57	4.7	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S22-Se0008132	NCP	ug/L	0.10	0.10	3.0	30%	Pass	
Perfluorooctanoic acid (PFOA)	S22-Se0008132	NCP	ug/L	0.12	0.12	3.3	30%	Pass	
Perfluorononanoic acid (PFNA)	S22-Se0008132	NCP	ug/L	< 0.1	< 0.1	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S22-Se0008132	NCP	ug/L	< 0.1	< 0.1	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S22-Se0008132	NCP	ug/L	< 0.1	< 0.1	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S22-Se0008132	NCP	ug/L	< 0.1	< 0.1	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S22-Se0008132	NCP	ug/L	< 0.1	< 0.1	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S22-Se0008132	NCP	ug/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S22-Se0008132	NCP	ug/L	< 0.5	< 0.5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S22-Se0008132	NCP	ug/L	< 0.5	< 0.5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S22-Se0008132	NCP	ug/L	< 0.5	< 0.5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol(N-MeFOSE)	S22-Se0008132	NCP	ug/L	< 0.5	< 0.5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol(N-EtFOSE)	S22-Se0008132	NCP	ug/L	< 0.5	< 0.5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S22-Se0008132	NCP	ug/L	< 0.5	< 0.5	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S22-Se0008132	NCP	ug/L	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S22-Se0008132	NCP	ug/L	0.39	0.41	5.3	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S22-Se0008132	NCP	ug/L	< 0.1	< 0.1	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S22-Se0008132	NCP	ug/L	< 0.1	< 0.1	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S22-Se0008132	NCP	ug/L	0.10	0.12	19	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S22-Se0008132	NCP	ug/L	0.44	0.55	23	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluoroheptanesulfonic acid (PFHpS)	S22-Se0008132	NCP	ug/L	< 0.1	< 0.1	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S22-Se0008132	NCP	ug/L	0.70	1.2	50	30%	Fail	Q15
Perfluorodecanesulfonic acid (PFDS)	S22-Se0008132	NCP	ug/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S22-Se0008132	NCP	ug/L	< 0.1	< 0.1	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid(6:2 FTSA)	S22-Se0008132	NCP	ug/L	3.7	4.5	20	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S22-Se0008132	NCP	ug/L	0.44	0.57	26	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S22-Se0008132	NCP	ug/L	< 0.1	< 0.1	<1	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
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
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:

Elden Garrett	Analytical Services Manager
Edward Lee	Senior Analyst-Organic
Jonathon Angell	Senior Analyst-PFAS
Kim Rodgers	Senior Analyst-Metal
Patrick Patfield	Senior Analyst-Organic
Patrick Patfield	Senior Analyst-Volatile
Paul Nottle	Senior Analyst-Organic
Paul Nottle	Senior Analyst-Volatile
Sam Becker	Senior Analyst-Inorganic

Kim Rodgers
Business Unit 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

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EP2209615**	Page	: 1 of 47
Client	: **AURECON AUSTRALASIA PTY LTD**	Laboratory	: Environmental Division Perth
Contact	: Nathan Seaver	Contact	: Tyler Anderson
Address	: 1/256 ADELAIDE TC PERTH WA, AUSTRALIA 6000	Address	: 26 Rigali Way Wangara Western Australia Australia 6065
Telephone	: ----	Telephone	: +61 2 8784 8555
Project	: Bunbry Quantem Terminal	Date Samples Received	: 29-Jul-2022 17:00
Order number	: ----	Date Analysis Commenced	: 02-Aug-2022
C-O-C number	: ----	Issue Date	: 17-Aug-2022 11:08
Sampler	: ALI ANWAR		
Site	: ----		
Quote number	: EN/057 - Primary work only		
No. of samples received	: 26		
No. of samples analysed	: 26		

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

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

Signatories	*Position*	*Accreditation Category*
Alana Smylie	Team Leader - Asbestos	Newcastle - Asbestos, Mayfield West, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Canhuang Ke	Inorganics Supervisor	Perth Inorganics, Wangara, Western Australia
Daniel Fisher	Inorganics Analyst	Perth ASS, Wangara, Western Australia
Daniel Fisher	Inorganics Analyst	Perth Inorganics, Wangara, Western Australia
David Viner	SENIOR LAB TECH	Perth Organics, Wangara, Western Australia
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Jarwis Nheu	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Thomas Donovan	Senior Organic Chemist	Perth Organics, Wangara, Western Australia

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.

- Total Fluoride conducted by ALS Melbourne, NATA accreditation no. 825, site no 13778
- Asbestos conducted by ALS Newcastle, NATA accreditation no. 825, site no 1656.
- PFAS, Herbicides and Phenols conducted by ALS Sydney, NATA accreditation no. 825, site no 10911.
- EP202: Poor matrix spike recoveries for Picloram and Clopyralid due to matrix effects.
- EP202: Poor matrix spike recoveries for Clopyralid due to matrix effects.
- This guideline comparison report only provides evaluation data where chemical parameters specifically listed within the DEC Waste Classification and Waste Definitions 1996 (as amended December 2019) guideline are analysed by ALS using P-19/1 package.
- 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.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Sum of chlorinated hydrocarbons includes carbon tetrachloride, chlorobenzene, chloroform, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichloroethane, 1,1-dichloroethene, cis-1,2-dichlorothene, trans-1,2-dichlorothene, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, 1,2,4-trichlorobenzene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethene, vinyl chloride, hexachlorobutadiene and methylene chloride.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene 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.
- EP068: Sample 'BH07_2.5-3.0' (EP2209615-013) shows poor surrogate recovery due to matrix interference.
- EG048G (Hexavalent Chromium by Alkaline Digestion): LOR raised for sample #1 due to possible sample matrix interference.
- EG005: Poor duplicate precision was obtained for Al due to possible sample heterogeneity. Results have been confirmed by re-extraction and re-analysis.
- For the 'Summary of Thresholds Reached or Exceeded' to accurately function, all samples must be analysed and included in the 'Analytical Results' section of the following report. Please verify that all required sample IDs are listed and analysed.

- This Automated Guideline Comparison report assesses potential chemical 'contaminants' versus guideline criteria. Other parameters may impact classification and 95% upper control limits may also be applied - refer to EPA Regulations.
- This guideline comparison report only provides evaluation of total concentration data against upper limit thresholds for Class I-IV.
- ASS: EA029 (SPOCAS): Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA037 (Rapid Field and F(ox) screening): pH F(ox) Reaction Rate: 1 - Slight; 2 - Moderate; 3 - Strong; 4 - Extreme
- EA037 ASS Field Screening: NATA accreditation does not cover performance of this service.
- ASS: EA029 (SPOCAS): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime ($CaCO_3$) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from kg/t dry weight to kg/m3 in-situ soil, multiply reported results x wet bulk density of soil in t/m3.
- 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.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH01_0-0.5	BH01_2.5-3.0	BH02_0-0.1	BH02_2.5-3.0	BH03_0.5-1.0
			Sampling date / time	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00
Compound	CAS Number	LOR	Unit	EP2209615-001	EP2209615-002	EP2209615-003	EP2209615-004	EP2209615-005
				Result	Result	Result	Result	Result
EA002: pH 1:5 (Soils)								
pH Value	----	0.1	pH Unit	9.3	9.5	9.2	9.5	9.0
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	9.6	9.6	9.6	9.7	9.7
pH OX (23B)	----	0.1	pH Unit	7.8	7.8	8.0	8.0	7.9
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	<2	<2	<2	<2
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	<2	<2	<2	<2	<2
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	<2	<2	<2	<2	<2
sulfidic - Titratable Actual Acidity (s-23F)	----	0.005	% pyrite S	<0.005	<0.005	<0.005	<0.005	<0.005
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.005	% pyrite S	<0.005	<0.005	<0.005	<0.005	<0.005
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.005	% pyrite S	<0.005	<0.005	<0.005	<0.005	<0.005
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.005	% S	0.006	0.006	<0.005	0.009	0.005
Peroxide Sulfur (23De)	----	0.005	% S	0.076	0.007	0.044	0.015	0.006
Peroxide Oxidisable Sulfur (23E)	----	0.005	% S	0.070	<0.005	0.042	0.007	<0.005
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	5	mole H+ / t	43	<5	26	<5	<5
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.005	% Ca	0.213	0.126	0.218	0.180	0.168
Peroxide Calcium (23Wh)	----	0.005	% Ca	14.2	0.932	10.3	3.17	2.46
Acid Reacted Calcium (23X)	----	0.005	% Ca	14.0	0.806	10.1	2.99	2.29
acidity - Acid Reacted Calcium (a-23X)	----	5	mole H+ / t	6960	402	5050	1490	1140
sulfidic - Acid Reacted Calcium (s-23X)	----	0.005	% S	11.2	0.645	8.09	2.39	1.83
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.005	% Mg	0.021	<0.005	0.016	0.008	<0.005
Peroxide Magnesium (23Tm)	----	0.005	% Mg	0.531	0.015	0.324	0.058	0.018
Acid Reacted Magnesium (23U)	----	0.005	% Mg	0.510	0.012	0.308	0.050	0.014
Acidity - Acid Reacted Magnesium (a-23U)	----	5	mole H+ / t	420	10	253	41	12
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.005	% S	0.673	0.016	0.406	0.066	0.018
EA029-F: Excess Acid Neutralising Capacity								
Excess Acid Neutralising Capacity (23Q)	----	0.020	% CaCO3	36.9	2.25	26.7	7.47	6.18

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH01_0-0.5	BH01_2.5-3.0	BH02_0-0.1	BH02_2.5-3.0	BH03_0.5-1.0
			Sampling date / time	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00
Compound	CAS Number	LOR	Unit	EP2209615-001	EP2209615-002	EP2209615-003	EP2209615-004	EP2209615-005
				Result	Result	Result	Result	Result
EA029-F: Excess Acid Neutralising Capacity - Continued								
acidity - Excess Acid Neutralising Capacity (a-23Q)	----	10	mole H+ / t	7380	450	5340	1490	1230
sulfidic - Excess Acid Neutralising Capacity (s-23Q)	----	0.020	% S	11.8	0.721	8.55	2.39	1.98
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	1.5	1.5	1.5	1.5	1.5
Net Acidity (sulfur units)	----	0.02	% S	<0.02	<0.02	<0.02	<0.02	<0.02
Net Acidity (acidity units)	----	10	mole H+ / t	<10	<10	<10	<10	<10
Liming Rate	----	1	kg CaCO3/t	<1	<1	<1	<1	<1
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	0.07	<0.02	0.04	<0.02	<0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	43	<10	26	<10	<10
Liming Rate excluding ANC	----	1	kg CaCO3/t	3	<1	2	<1	<1
EA037: Ass Field Screening Analysis								
ø pH (F)	----	0.1	pH Unit	8.8	8.8	8.6	8.9	8.5
ø pH (Fox)	----	0.1	pH Unit	6.7	6.8	6.7	6.7	6.8
ø Reaction Rate	----	1	-	Moderate	Slight	Moderate	Slight	Slight
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	10.9	5.5	8.2	6.2	21.8
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	No	No	No
Asbestos Type	1332-21-4	-	--	-	-	-	-	-
Synthetic Mineral Fibre	----	0.1	g/kg	No	No	No	No	No
Organic Fibre	----	0.1	g/kg	No	No	No	No	No
Sample weight (dry)	----	0.01	g	283	410	329	304	578
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE
EG005(ED093)T: Total Metals by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	670	660	1390	740	880
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Barium	7440-39-3	10	mg/kg	30	<10	<10	<10	<10
Beryllium	7440-41-7	1	mg/kg	<1	<1	<1	<1	<1
Boron	7440-42-8	50	mg/kg	<50	<50	<50	<50	<50
Cobalt	7440-48-4	2	mg/kg	<2	<2	<2	<2	<2
Copper	7440-50-8	5	mg/kg	<5	<5	<5	<5	5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH01_0-0.5	BH01_2.5-3.0	BH02_0-0.1	BH02_2.5-3.0	BH03_0.5-1.0
			Sampling date / time	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00
Compound	CAS Number	LOR	Unit	EP2209615-001	EP2209615-002	EP2209615-003	EP2209615-004	EP2209615-005
				Result	Result	Result	Result	Result
EG005(ED093)T: Total Metals by ICP-AES - Continued								
Manganese	7439-96-5	5	mg/kg	**43**	**7**	**20**	**8**	**21**
Molybdenum	7439-98-7	2	mg/kg	<2	<2	<2	<2	<2
Nickel	7440-02-0	2	mg/kg	<2	<2	<2	<2	<2
Silver	7440-22-4	2	mg/kg	<2	<2	<2	<2	<2
Vanadium	7440-62-2	5	mg/kg	<5	<5	**6**	<5	<5
Zinc	7440-66-6	5	mg/kg	**30**	<5	**13**	<5	<5
EG020T: Total Metals by ICP-MS								
Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	7439-92-1	0.1	mg/kg	**13.6**	**1.8**	**9.2**	**0.9**	**1.2**
Selenium	7782-49-2	1	mg/kg	<1	<1	<1	<1	<1
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	<2.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	1	mg/kg	<1	<1	<1	<1	<1
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser								
Weak Acid Dissociable Cyanide	----	1	mg/kg	<1	<1	<1	<1	<1
EK040T: Fluoride Total								
Fluoride	16984-48-8	40	mg/kg	**220**	**150**	**320**	**100**	<40
EP035G: Total Phenol by Discrete Analyser								
Phenols (Total)	----	1	mg/kg	<1	<1	<1	<1	<1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	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

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH01_0-0.5	BH01_2.5-3.0	BH02_0-0.1	BH02_2.5-3.0	BH03_0.5-1.0
			Sampling date / time	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00
Compound	CAS Number	LOR	Unit	EP2209615-001	EP2209615-002	EP2209615-003	EP2209615-004	EP2209615-005
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
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
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
^ Total OCP	----	5.00	mg/kg	<5.00	<5.00	<5.00	<5.00	<5.00
EP070: Total Petroleum Hydrocarbons - Speciation								
Aliphatic C16-C35	----	100	mg/kg	<100	<100	<100	<100	<100
Aliphatic > C35	----	100	mg/kg	<100	<100	<100	<100	<100
Aromatic C16-C35	----	90	mg/kg	<90	<90	<90	<90	<90
Aromatic > C35	----	100	mg/kg	<100	<100	<100	<100	<100
EP074A: Monocyclic Aromatic Hydrocarbons								
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
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
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

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH01_0-0.5	BH01_2.5-3.0	BH02_0-0.1	BH02_2.5-3.0	BH03_0.5-1.0
			Sampling date / time	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00
Compound	CAS Number	LOR	Unit	EP2209615-001	EP2209615-002	EP2209615-003	EP2209615-004	EP2209615-005
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued								
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
Benz(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
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

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH01_0-0.5	BH01_2.5-3.0	BH02_0-0.1	BH02_2.5-3.0	BH03_0.5-1.0
			Sampling date / time	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00
Compound	CAS Number	LOR	Unit	EP2209615-001	EP2209615-002	EP2209615-003	EP2209615-004	EP2209615-005
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
>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
^ Total Xylenes	----	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
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP202A: Phenoxyacetic Acid Herbicides by LCMS								
2.4-D	94-75-7	0.02	mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	**0.0003**	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH01_0-0.5	BH01_2.5-3.0	BH02_0-0.1	BH02_2.5-3.0	BH03_0.5-1.0
			Sampling date / time	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00
Compound	CAS Number	LOR	Unit	EP2209615-001	EP2209615-002	EP2209615-003	EP2209615-004	EP2209615-005
				Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued								
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH01_0-0.5	BH01_2.5-3.0	BH02_0-0.1	BH02_2.5-3.0	BH03_0.5-1.0
				Sampling date / time	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00
Compound	CAS Number	LOR	Unit		EP2209615-001	EP2209615-002	EP2209615-003	EP2209615-004	EP2209615-005
					Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued									
Sum of PFAS	----	0.0002	mg/kg		**0.0003**	<0.0002	<0.0002	<0.0002	<0.0002
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		**0.0003**	<0.0002	<0.0002	<0.0002	<0.0002
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		**0.0003**	<0.0002	<0.0002	<0.0002	<0.0002
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**109**	**104**	**110**	**108**	**115**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**135**	**121**	**115**	**114**	**128**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**61.6**	**88.0**	**121**	**125**	**133**
EP070: Total Petroleum Hydrocarbons - Speciation									
2-Bromonaphthalene	580-13-2	1	%		**97.0**	**102**	**87.2**	**105**	**98.8**
2-Fluorobiphenyl	321-60-8	1	%		**102**	**105**	**91.2**	**109**	**102**
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		**77.2**	**79.9**	**99.4**	**89.7**	**81.0**
Toluene-D8	2037-26-5	0.5	%		**91.4**	**67.0**	**82.8**	**88.6**	**77.4**
4-Bromofluorobenzene	460-00-4	0.5	%		**87.2**	**84.7**	**87.7**	**88.2**	**82.2**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**119**	**116**	**103**	**102**	**103**
2-Chlorophenol-D4	93951-73-6	0.5	%		**108**	**106**	**96.6**	**94.3**	**94.7**
2.4.6-Tribromophenol	118-79-6	0.5	%		**101**	**97.1**	**86.7**	**82.9**	**87.9**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**104**	**104**	**94.4**	**94.1**	**96.7**
Anthracene-d10	1719-06-8	0.5	%		**104**	**103**	**94.8**	**94.1**	**98.1**
4-Terphenyl-d14	1718-51-0	0.5	%		**106**	**105**	**98.3**	**98.6**	**108**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**75.2**	**78.3**	**97.0**	**87.1**	**80.0**
Toluene-D8	2037-26-5	0.2	%		**91.9**	**67.5**	**83.6**	**89.2**	**77.9**
4-Bromofluorobenzene	460-00-4	0.2	%		**75.3**	**81.1**	**88.6**	**87.0**	**76.7**
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2.4-Dichlorophenyl Acetic Acid	19719-28-9	0.02	%		**64.5**	**61.8**	**59.2**	**58.7**	**65.8**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**91.5**	**100**	**89.5**	**96.5**	**102**
13C8-PFOA	----	0.0002	%		**92.0**	**92.5**	**93.5**	**92.5**	**89.5**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH01_0-0.5	BH01_2.5-3.0	BH02_0-0.1	BH02_2.5-3.0	BH03_0.5-1.0
			Sampling date / time	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00
Compound	CAS Number	LOR	Unit	EP2209615-001	EP2209615-002	EP2209615-003	EP2209615-004	EP2209615-005
				Result	Result	Result	Result	Result
EP231S: PFAS Surrogate - Continued								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH03_2.0-2.5	BH04_0-0.5	BH04_2.5-3.0	BH05_0-0.5	BH06_0.5-1.0
			Sampling date / time	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	29-Jul-2022 00:00	29-Jul-2022 00:00
Compound	CAS Number	LOR	Unit	EP2209615-006	EP2209615-007	EP2209615-008	EP2209615-009	EP2209615-010
				Result	Result	Result	Result	Result
EA002: pH 1:5 (Soils)								
pH Value	----	0.1	pH Unit	9.2	8.8	8.8	8.1	8.2
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	9.7	9.0	8.9	8.9	9.0
pH OX (23B)	----	0.1	pH Unit	7.9	9.1	8.9	8.3	8.5
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	<2	<2	<2	<2
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	<2	<2	<2	<2	<2
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	<2	<2	<2	<2	<2
sulfidic - Titratable Actual Acidity (s-23F)	----	0.005	% pyrite S	<0.005	<0.005	<0.005	<0.005	<0.005
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.005	% pyrite S	<0.005	<0.005	<0.005	<0.005	<0.005
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.005	% pyrite S	<0.005	<0.005	<0.005	<0.005	<0.005
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.005	% S	0.009	0.008	0.006	0.118	0.111
Peroxide Sulfur (23De)	----	0.005	% S	0.008	0.016	0.012	0.114	0.113
Peroxide Oxidisable Sulfur (23E)	----	0.005	% S	<0.005	0.008	0.006	<0.005	<0.005
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	5	mole H+ / t	<5	5	<5	<5	<5
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.005	% Ca	0.161	0.273	0.274	0.326	0.326
Peroxide Calcium (23Wh)	----	0.005	% Ca	1.93	1.50	1.50	1.37	2.53
Acid Reacted Calcium (23X)	----	0.005	% Ca	1.77	1.23	1.22	1.04	2.20
acidity - Acid Reacted Calcium (a-23X)	----	5	mole H+ / t	883	615	611	522	1100
sulfidic - Acid Reacted Calcium (s-23X)	----	0.005	% S	1.42	0.985	0.980	0.836	1.76
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.005	% Mg	0.005	0.016	0.016	0.014	0.026
Peroxide Magnesium (23Tm)	----	0.005	% Mg	0.025	0.040	0.038	0.031	0.059
Acid Reacted Magnesium (23U)	----	0.005	% Mg	0.020	0.023	0.022	0.017	0.033
Acidity - Acid Reacted Magnesium (a-23U)	----	5	mole H+ / t	16	19	18	14	27
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.005	% S	0.026	0.030	0.030	0.022	0.043
EA029-F: Excess Acid Neutralising Capacity								
Excess Acid Neutralising Capacity (23Q)	----	0.020	% CaCO3	4.88	3.71	3.63	3.12	6.10

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH03_2.0-2.5	BH04_0-0.5	BH04_2.5-3.0	BH05_0-0.5	BH06_0.5-1.0
			Sampling date / time	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	29-Jul-2022 00:00	29-Jul-2022 00:00
Compound	CAS Number	LOR	Unit	EP2209615-006	EP2209615-007	EP2209615-008	EP2209615-009	EP2209615-010
				Result	Result	Result	Result	Result
EA029-F: Excess Acid Neutralising Capacity - Continued								
acidity - Excess Acid Neutralising Capacity (a-23Q)	----	10	mole H+ / t	975	742	724	624	1220
sulfidic - Excess Acid Neutralising Capacity (s-23Q)	----	0.020	% S	1.56	1.19	1.16	0.999	1.95
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	1.5	1.5	1.5	1.5	1.5
Net Acidity (sulfur units)	----	0.02	% S	<0.02	<0.02	<0.02	<0.02	<0.02
Net Acidity (acidity units)	----	10	mole H+ / t	<10	<10	<10	<10	<10
Liming Rate	----	1	kg CaCO3/t	<1	<1	<1	<1	<1
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	<0.02	<0.02	<0.02	<0.02	<0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	<10	<10	<10	<10	<10
Liming Rate excluding ANC	----	1	kg CaCO3/t	<1	<1	<1	<1	<1
EA037: Ass Field Screening Analysis								
ø pH (F)	----	0.1	pH Unit	8.4	8.0	8.1	7.6	7.8
ø pH (Fox)	----	0.1	pH Unit	6.8	8.0	8.1	7.7	7.4
ø Reaction Rate	----	1	-	Slight	Strong	Strong	Strong	Strong
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	22.5	16.9	16.2	18.3	13.0
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	No	No	No
Asbestos Type	1332-21-4	-	--	-	-	-	-	-
Synthetic Mineral Fibre	----	0.1	g/kg	No	No	No	No	No
Organic Fibre	----	0.1	g/kg	No	No	No	No	No
Sample weight (dry)	----	0.01	g	411	468	311	409	369
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE
EG005(ED093)T: Total Metals by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	760	3740	3710	3650	4040
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Barium	7440-39-3	10	mg/kg	<10	30	30	20	20
Beryllium	7440-41-7	1	mg/kg	<1	<1	<1	<1	<1
Boron	7440-42-8	50	mg/kg	<50	<50	<50	<50	<50
Cobalt	7440-48-4	2	mg/kg	<2	3	3	3	3
Copper	7440-50-8	5	mg/kg	<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH03_2.0-2.5	BH04_0-0.5	BH04_2.5-3.0	BH05_0-0.5	BH06_0.5-1.0
			Sampling date / time	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	29-Jul-2022 00:00	29-Jul-2022 00:00
Compound	CAS Number	LOR	Unit	EP2209615-006	EP2209615-007	EP2209615-008	EP2209615-009	EP2209615-010
				Result	Result	Result	Result	Result
EG005(ED093)T: Total Metals by ICP-AES - Continued								
Manganese	7439-96-5	5	mg/kg	11	182	166	128	125
Molybdenum	7439-98-7	2	mg/kg	<2	<2	<2	<2	<2
Nickel	7440-02-0	2	mg/kg	<2	3	4	3	3
Silver	7440-22-4	2	mg/kg	<2	<2	<2	<2	<2
Vanadium	7440-62-2	5	mg/kg	<5	17	18	16	17
Zinc	7440-66-6	5	mg/kg	<5	7	7	<5	<5
EG020T: Total Metals by ICP-MS								
Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	7439-92-1	0.1	mg/kg	1.5	3.8	3.9	3.4	3.6
Selenium	7782-49-2	1	mg/kg	<1	<1	<1	<1	<1
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	1	mg/kg	<1	<1	<1	<1	<1
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser								
Weak Acid Dissociable Cyanide	----	1	mg/kg	<1	<1	<1	<1	<1
EK040T: Fluoride Total								
Fluoride	16984-48-8	40	mg/kg	<40	40	50	70	60
EP035G: Total Phenol by Discrete Analyser								
Phenols (Total)	----	1	mg/kg	<1	<1	<1	<1	<1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	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

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH03_2.0-2.5	BH04_0-0.5	BH04_2.5-3.0	BH05_0-0.5	BH06_0.5-1.0
			Sampling date / time	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	29-Jul-2022 00:00	29-Jul-2022 00:00
Compound	CAS Number	LOR	Unit	EP2209615-006	EP2209615-007	EP2209615-008	EP2209615-009	EP2209615-010
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
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
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
^ Total OCP	----	5.00	mg/kg	<5.00	<5.00	<5.00	<5.00	<5.00
EP070: Total Petroleum Hydrocarbons - Speciation								
Aliphatic C16-C35	----	100	mg/kg	<100	<100	<100	<100	<100
Aliphatic > C35	----	100	mg/kg	<100	<100	<100	<100	<100
Aromatic C16-C35	----	90	mg/kg	<90	<90	<90	<90	<90
Aromatic > C35	----	100	mg/kg	<100	<100	<100	<100	<100
EP074A: Monocyclic Aromatic Hydrocarbons								
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
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
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

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH03_2.0-2.5	BH04_0-0.5	BH04_2.5-3.0	BH05_0-0.5	BH06_0.5-1.0
			Sampling date / time	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	29-Jul-2022 00:00	29-Jul-2022 00:00
Compound	CAS Number	LOR	Unit	EP2209615-006	EP2209615-007	EP2209615-008	EP2209615-009	EP2209615-010
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued								
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
Benz(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
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

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH03_2.0-2.5	BH04_0-0.5	BH04_2.5-3.0	BH05_0-0.5	BH06_0.5-1.0
			Sampling date / time	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	29-Jul-2022 00:00	29-Jul-2022 00:00
Compound	CAS Number	LOR	Unit	EP2209615-006	EP2209615-007	EP2209615-008	EP2209615-009	EP2209615-010
				Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued								
>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
^ Total Xylenes	----	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
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP202A: Phenoxyacetic Acid Herbicides by LCMS								
2.4-D	94-75-7	0.02	mg/kg	<0.02	<0.02	<0.02	<0.02	<0.02
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH03_2.0-2.5	BH04_0-0.5	BH04_2.5-3.0	BH05_0-0.5	BH06_0.5-1.0
			Sampling date / time	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	29-Jul-2022 00:00	29-Jul-2022 00:00
Compound	CAS Number	LOR	Unit	EP2209615-006	EP2209615-007	EP2209615-008	EP2209615-009	EP2209615-010
				Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued								
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH03_2.0-2.5	BH04_0-0.5	BH04_2.5-3.0	BH05_0-0.5	BH06_0.5-1.0
			Sampling date / time	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	29-Jul-2022 00:00	29-Jul-2022 00:00
Compound	CAS Number	LOR	Unit	EP2209615-006	EP2209615-007	EP2209615-008	EP2209615-009	EP2209615-010
				Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued								
Sum of PFAS	----	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	93.0	104	105	109	112
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	88.1	110	121	120	125
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	60.4	112	115	99.7	105
EP070: Total Petroleum Hydrocarbons - Speciation								
2-Bromonaphthalene	580-13-2	1	%	97.6	99.8	101	105	104
2-Fluorobiphenyl	321-60-8	1	%	103	104	106	109	108
EP074S: VOC Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.5	%	86.5	83.3	87.8	87.4	89.5
Toluene-D8	2037-26-5	0.5	%	84.6	82.3	84.6	85.1	90.8
4-Bromofluorobenzene	460-00-4	0.5	%	88.8	88.0	81.2	86.3	89.3
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	99.3	96.7	106	98.8	86.2
2-Chlorophenol-D4	93951-73-6	0.5	%	93.6	91.5	101	95.4	84.0
2.4.6-Tribromophenol	118-79-6	0.5	%	84.4	80.6	88.2	80.9	77.0
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	95.6	94.8	105	96.5	91.0
Anthracene-d10	1719-06-8	0.5	%	96.0	93.8	103	94.6	90.8
4-Terphenyl-d14	1718-51-0	0.5	%	102	101	108	99.5	96.8
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	83.7	81.7	85.0	88.6	86.7
Toluene-D8	2037-26-5	0.2	%	84.4	83.3	85.2	86.4	91.4
4-Bromofluorobenzene	460-00-4	0.2	%	82.3	78.9	85.1	85.0	86.9
EP202S: Phenoxyacetic Acid Herbicide Surrogate								
2.4-Dichlorophenyl Acetic Acid	19719-28-9	0.02	%	68.3	72.0	62.6	57.5	62.8
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	90.5	91.0	96.5	89.0	95.5
13C8-PFOA	----	0.0002	%	95.5	94.5	93.5	92.5	93.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH03_2.0-2.5	BH04_0-0.5	BH04_2.5-3.0	BH05_0-0.5	BH06_0.5-1.0
			Sampling date / time	28-Jul-2022 00:00	28-Jul-2022 00:00	28-Jul-2022 00:00	29-Jul-2022 00:00	29-Jul-2022 00:00
Compound	CAS Number	LOR	Unit	EP2209615-006	EP2209615-007	EP2209615-008	EP2209615-009	EP2209615-010
				Result	Result	Result	Result	Result
EP231S: PFAS Surrogate - Continued								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH06_2.5-3.0	BH07_0.5-1.0	BH07_2.5-3.0	MW1_0-0.5	MW1_3-3.5
			Sampling date / time	29-Jul-2022 00:00	29-Jul-2022 08:55	29-Jul-2022 08:55	28-Jul-2022 11:00	28-Jul-2022 11:00
Compound	CAS Number	LOR	Unit	EP2209615-011	EP2209615-012	EP2209615-013	EP2209615-014	EP2209615-015
				Result	Result	Result	Result	Result
EA002: pH 1:5 (Soils)								
pH Value	----	0.1	pH Unit	8.3	8.3	8.9	9.0	9.4
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	9.1	8.7	8.8	9.7	9.6
pH OX (23B)	----	0.1	pH Unit	8.3	8.5	8.6	8.0	8.2
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	<2	<2	<2	<2
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	<2	<2	<2	<2	<2
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	<2	<2	<2	<2	<2
sulfidic - Titratable Actual Acidity (s-23F)	----	0.005	% pyrite S	<0.005	<0.005	<0.005	<0.005	<0.005
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.005	% pyrite S	<0.005	<0.005	<0.005	<0.005	<0.005
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.005	% pyrite S	<0.005	<0.005	<0.005	<0.005	<0.005
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.005	% S	0.090	0.096	0.048	0.009	0.011
Peroxide Sulfur (23De)	----	0.005	% S	0.214	0.085	0.084	0.075	0.016
Peroxide Oxidisable Sulfur (23E)	----	0.005	% S	0.124	<0.005	0.036	0.066	<0.005
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	5	mole H+ / t	77	<5	22	41	<5
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.005	% Ca	0.250	0.333	0.251	0.217	0.205
Peroxide Calcium (23Wh)	----	0.005	% Ca	2.23	1.06	1.32	13.3	4.60
Acid Reacted Calcium (23X)	----	0.005	% Ca	1.98	0.732	1.07	13.1	4.39
acidity - Acid Reacted Calcium (a-23X)	----	5	mole H+ / t	987	365	536	6540	2190
sulfidic - Acid Reacted Calcium (s-23X)	----	0.005	% S	1.58	0.585	0.859	10.5	3.52
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.005	% Mg	0.026	0.013	0.060	0.031	0.007
Peroxide Magnesium (23Tm)	----	0.005	% Mg	0.065	0.030	0.084	0.497	0.049
Acid Reacted Magnesium (23U)	----	0.005	% Mg	0.038	0.018	0.024	0.466	0.042
Acidity - Acid Reacted Magnesium (a-23U)	----	5	mole H+ / t	32	14	20	383	34
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.005	% S	0.051	0.023	0.032	0.615	0.055
EA029-F: Excess Acid Neutralising Capacity								
Excess Acid Neutralising Capacity (23Q)	----	0.020	% CaCO3	4.88	2.45	2.96	47.4	10.3

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH06_2.5-3.0	BH07_0.5-1.0	BH07_2.5-3.0	MW1_0-0.5	MW1_3-3.5
			Sampling date / time	29-Jul-2022 00:00	29-Jul-2022 08:55	29-Jul-2022 08:55	28-Jul-2022 11:00	28-Jul-2022 11:00
Compound	CAS Number	LOR	Unit	EP2209615-011	EP2209615-012	EP2209615-013	EP2209615-014	EP2209615-015
				Result	Result	Result	Result	Result
EA029-F: Excess Acid Neutralising Capacity - Continued								
acidity - Excess Acid Neutralising Capacity (a-23Q)	----	10	mole H+ / t	975	490	592	9470	2050
sulfidic - Excess Acid Neutralising Capacity (s-23Q)	----	0.020	% S	1.56	0.785	0.948	15.2	3.29
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	1.5	1.5	1.5	1.5	1.5
Net Acidity (sulfur units)	----	0.02	% S	<0.02	<0.02	<0.02	<0.02	<0.02
Net Acidity (acidity units)	----	10	mole H+ / t	<10	<10	<10	<10	<10
Liming Rate	----	1	kg CaCO3/t	<1	<1	<1	<1	<1
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	0.12	<0.02	0.04	0.07	<0.02
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	77	<10	22	41	<10
Liming Rate excluding ANC	----	1	kg CaCO3/t	6	<1	2	3	<1
EA037: Ass Field Screening Analysis								
ø pH (F)	----	0.1	pH Unit	7.5	7.6	8.2	8.7	8.5
ø pH (Fox)	----	0.1	pH Unit	7.3	7.7	7.4	6.8	6.6
ø Reaction Rate	----	1	-	Strong	Strong	Strong	Moderate	Moderate
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	12.2	12.9	12.0	10.8	9.0
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	No	No	No
Asbestos Type	1332-21-4	-	--	-	-	-	-	-
Synthetic Mineral Fibre	----	0.1	g/kg	No	No	No	No	No
Organic Fibre	----	0.1	g/kg	No	No	No	No	No
Sample weight (dry)	----	0.01	g	329	339	304	425	570
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE
EG005(ED093)T: Total Metals by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	2600	4650	4600	790	2040
Arsenic	7440-38-2	5	mg/kg	<5	11	<5	<5	<5
Barium	7440-39-3	10	mg/kg	20	30	20	20	<10
Beryllium	7440-41-7	1	mg/kg	<1	<1	<1	<1	<1
Boron	7440-42-8	50	mg/kg	<50	<50	<50	<50	<50
Cobalt	7440-48-4	2	mg/kg	<2	4	3	<2	<2
Copper	7440-50-8	5	mg/kg	<5	<5	<5	<5	<5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH06_2.5-3.0	BH07_0.5-1.0	BH07_2.5-3.0	MW1_0-0.5	MW1_3-3.5
			Sampling date / time	29-Jul-2022 00:00	29-Jul-2022 08:55	29-Jul-2022 08:55	28-Jul-2022 11:00	28-Jul-2022 11:00
Compound	CAS Number	LOR	Unit	EP2209615-011	EP2209615-012	EP2209615-013	EP2209615-014	EP2209615-015
				Result	Result	Result	Result	Result
EG005(ED093)T: Total Metals by ICP-AES - Continued								
Manganese	7439-96-5	5	mg/kg	97	153	194	38	10
Molybdenum	7439-98-7	2	mg/kg	2	2	<2	<2	<2
Nickel	7440-02-0	2	mg/kg	<2	4	3	<2	<2
Silver	7440-22-4	2	mg/kg	<2	<2	<2	<2	<2
Vanadium	7440-62-2	5	mg/kg	13	22	14	<5	9
Zinc	7440-66-6	5	mg/kg	<5	<5	<5	19	<5
EG020T: Total Metals by ICP-MS								
Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	7439-92-1	0.1	mg/kg	2.5	3.9	4.2	5.8	2.4
Selenium	7782-49-2	1	mg/kg	<1	<1	<1	<1	<1
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	1	mg/kg	<1	<1	<1	<1	<1
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser								
Weak Acid Dissociable Cyanide	----	1	mg/kg	<1	<1	<1	<1	<1
EK040T: Fluoride Total								
Fluoride	16984-48-8	40	mg/kg	<40	50	40	90	<40
EP035G: Total Phenol by Discrete Analyser								
Phenols (Total)	----	1	mg/kg	<1	<1	<1	<1	<1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	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

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH06_2.5-3.0	BH07_0.5-1.0	BH07_2.5-3.0	MW1_0-0.5	MW1_3-3.5
			Sampling date / time	29-Jul-2022 00:00	29-Jul-2022 08:55	29-Jul-2022 08:55	28-Jul-2022 11:00	28-Jul-2022 11:00
Compound	CAS Number	LOR	Unit	EP2209615-011	EP2209615-012	EP2209615-013	EP2209615-014	EP2209615-015
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
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
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
^ Total OCP	----	5.00	mg/kg	<5.00	<5.00	<5.00	<5.00	<5.00
EP070: Total Petroleum Hydrocarbons - Speciation								
Aliphatic C16-C35	----	100	mg/kg	<100	<100	<100	<100	<100
Aliphatic > C35	----	100	mg/kg	<100	<100	<100	<100	<100
Aromatic C16-C35	----	90	mg/kg	<90	<90	<90	<90	<90
Aromatic > C35	----	100	mg/kg	<100	<100	<100	<100	<100
EP074A: Monocyclic Aromatic Hydrocarbons								
Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
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
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

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH06_2.5-3.0	BH07_0.5-1.0	BH07_2.5-3.0	MW1_0-0.5	MW1_3-3.5
			Sampling date / time	29-Jul-2022 00:00	29-Jul-2022 08:55	29-Jul-2022 08:55	28-Jul-2022 11:00	28-Jul-2022 11:00
Compound	CAS Number	LOR	Unit	EP2209615-011	EP2209615-012	EP2209615-013	EP2209615-014	EP2209615-015
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued								
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
Benz(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
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

Analytical Results

Sub-Matrix: **SOIL**
(Matrix: **SOIL**)

Compound	CAS Number	LOR	Unit	Sample ID	BH06_2.5-3.0	BH07_0.5-1.0	BH07_2.5-3.0	MW1_0-0.5	MW1_3-3.5
				Sampling date / time	29-Jul-2022 00:00	29-Jul-2022 08:55	29-Jul-2022 08:55	28-Jul-2022 11:00	28-Jul-2022 11:00
					EP2209615-011	EP2209615-012	EP2209615-013	EP2209615-014	EP2209615-015
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
>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
^ **Total Xylenes**	----	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
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
2.4-D	94-75-7	0.02	mg/kg		<0.02	<0.02	<0.02	<0.02	<0.02
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0002**	<0.0002
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	<0.001	<0.001
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH06_2.5-3.0	BH07_0.5-1.0	BH07_2.5-3.0	MW1_0-0.5	MW1_3-3.5
			Sampling date / time	29-Jul-2022 00:00	29-Jul-2022 08:55	29-Jul-2022 08:55	28-Jul-2022 11:00	28-Jul-2022 11:00
Compound	CAS Number	LOR	Unit	EP2209615-011	EP2209615-012	EP2209615-013	EP2209615-014	EP2209615-015
				Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued								
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
EP231P: PFAS Sums								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH06_2.5-3.0	BH07_0.5-1.0	BH07_2.5-3.0	MW1_0-0.5	MW1_3-3.5
				Sampling date / time	29-Jul-2022 00:00	29-Jul-2022 08:55	29-Jul-2022 08:55	28-Jul-2022 11:00	28-Jul-2022 11:00
Compound	CAS Number	LOR	Unit		EP2209615-011	EP2209615-012	EP2209615-013	EP2209615-014	EP2209615-015
					Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued									
Sum of PFAS	----	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0002**	<0.0002
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0002**	<0.0002
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	**0.0002**	<0.0002
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**107**	**72.6**	**99.8**	**110**	**101**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**118**	**87.4**	**126**	**124**	**142**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**104**	**74.6**	**8.1**	**89.9**	**62.5**
EP070: Total Petroleum Hydrocarbons - Speciation									
2-Bromonaphthalene	580-13-2	1	%		**102**	**99.8**	**98.2**	**99.3**	**104**
2-Fluorobiphenyl	321-60-8	1	%		**106**	**102**	**103**	**104**	**109**
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		**90.3**	**97.6**	**88.3**	**93.3**	**81.0**
Toluene-D8	2037-26-5	0.5	%		**88.2**	**94.4**	**88.8**	**97.0**	**82.4**
4-Bromofluorobenzene	460-00-4	0.5	%		**91.6**	**88.3**	**85.8**	**94.4**	**77.1**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**97.2**	**97.0**	**85.8**	**88.4**	**86.7**
2-Chlorophenol-D4	93951-73-6	0.5	%		**99.2**	**89.0**	**94.6**	**93.5**	**94.8**
2.4.6-Tribromophenol	118-79-6	0.5	%		**89.1**	**95.6**	**78.0**	**78.9**	**67.4**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**107**	**89.9**	**104**	**101**	**97.5**
Anthracene-d10	1719-06-8	0.5	%		**108**	**85.7**	**100**	**98.3**	**96.0**
4-Terphenyl-d14	1718-51-0	0.5	%		**113**	**72.3**	**124**	**121**	**117**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**87.3**	**110**	**85.6**	**90.6**	**78.7**
Toluene-D8	2037-26-5	0.2	%		**89.0**	**98.3**	**89.5**	**97.8**	**81.8**
4-Bromofluorobenzene	460-00-4	0.2	%		**85.5**	**120**	**85.8**	**96.0**	**77.7**
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2.4-Dichlorophenyl Acetic Acid	19719-28-9	0.02	%		**75.1**	**55.5**	**56.7**	**55.6**	**78.8**
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		**93.5**	**98.5**	**93.5**	**94.5**	**85.5**
13C8-PFOA	----	0.0002	%		**99.0**	**93.0**	**92.0**	**97.0**	**95.0**

Analytical Results

Sub-Matrix: **SOIL** (Matrix: **SOIL**)			Sample ID	**BH06_2.5-3.0**	**BH07_0.5-1.0**	**BH07_2.5-3.0**	**MW1_0-0.5**	**MW1_3-3.5**
			Sampling date / time	29-Jul-2022 00:00	29-Jul-2022 08:55	29-Jul-2022 08:55	28-Jul-2022 11:00	28-Jul-2022 11:00
Compound	*CAS Number*	*LOR*	*Unit*	**EP2209615-011**	**EP2209615-012**	**EP2209615-013**	**EP2209615-014**	**EP2209615-015**
				Result	Result	Result	Result	Result
EP231S: PFAS Surrogate - Continued								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	MW2_0-0.5	MW2_3-3.5	QC101	MW1_4.0-4.5	MW2_4.5-5.0
			Sampling date / time	28-Jul-2022 11:00	28-Jul-2022 11:00	29-Jul-2022 00:00	28-Jul-2022 11:20	28-Jul-2022 12:35
Compound	CAS Number	LOR	Unit	EP2209615-016	EP2209615-017	EP2209615-018	EP2209615-019	EP2209615-020
				Result	Result	Result	Result	Result
EA002: pH 1:5 (Soils)								
pH Value	----	0.1	pH Unit	8.8	8.8	9.1	----	----
EA029-A: pH Measurements								
pH KCl (23A)	----	0.1	pH Unit	9.0	9.6	9.5	9.5	9.2
pH OX (23B)	----	0.1	pH Unit	8.6	8.0	8.0	8.1	8.1
EA029-B: Acidity Trail								
Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	<2	<2	<2	<2
Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	<2	<2	<2	<2	<2
Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	<2	<2	<2	<2	<2
sulfidic - Titratable Actual Acidity (s-23F)	----	0.005	% pyrite S	<0.005	<0.005	<0.005	<0.005	<0.005
sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.005	% pyrite S	<0.005	<0.005	<0.005	<0.005	<0.005
sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.005	% pyrite S	<0.005	<0.005	<0.005	<0.005	<0.005
EA029-C: Sulfur Trail								
KCl Extractable Sulfur (23Ce)	----	0.005	% S	<0.005	0.028	<0.005	0.111	0.127
Peroxide Sulfur (23De)	----	0.005	% S	0.017	0.049	0.031	0.267	0.774
Peroxide Oxidisable Sulfur (23E)	----	0.005	% S	0.017	0.022	0.027	0.156	0.647
acidity - Peroxide Oxidisable Sulfur (a-23E)	----	5	mole H+ / t	10	14	16	97	404
EA029-D: Calcium Values								
KCl Extractable Calcium (23Vh)	----	0.005	% Ca	0.254	0.192	0.235	0.223	0.308
Peroxide Calcium (23Wh)	----	0.005	% Ca	2.12	2.21	6.51	3.54	25.1
Acid Reacted Calcium (23X)	----	0.005	% Ca	1.86	2.02	6.28	3.32	24.8
acidity - Acid Reacted Calcium (a-23X)	----	5	mole H+ / t	929	1010	3130	1660	12400
sulfidic - Acid Reacted Calcium (s-23X)	----	0.005	% S	1.49	1.62	5.02	2.65	19.9
EA029-E: Magnesium Values								
KCl Extractable Magnesium (23Sm)	----	0.005	% Mg	0.012	0.008	0.016	0.016	0.046
Peroxide Magnesium (23Tm)	----	0.005	% Mg	0.034	0.044	0.193	0.064	0.432
Acid Reacted Magnesium (23U)	----	0.005	% Mg	0.022	0.036	0.177	0.048	0.386
Acidity - Acid Reacted Magnesium (a-23U)	----	5	mole H+ / t	18	29	146	39	318
sulfidic - Acid Reacted Magnesium (s-23U)	----	0.005	% S	0.028	0.047	0.234	0.063	0.510
EA029-F: Excess Acid Neutralising Capacity								
Excess Acid Neutralising Capacity (23Q)	----	0.020	% CaCO3	4.88	4.81	16.7	7.80	55.7

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	MW2_0-0.5	MW2_3-3.5	QC101	MW1_4.0-4.5	MW2_4.5-5.0
			Sampling date / time	28-Jul-2022 11:00	28-Jul-2022 11:00	29-Jul-2022 00:00	28-Jul-2022 11:20	28-Jul-2022 12:35
Compound	CAS Number	LOR	Unit	EP2209615-016	EP2209615-017	EP2209615-018	EP2209615-019	EP2209615-020
				Result	Result	Result	Result	Result
EA029-F: Excess Acid Neutralising Capacity - Continued								
acidity - Excess Acid Neutralising Capacity (a-23Q)	----	10	mole H+ / t	976	962	3330	1560	11100
sulfidic - Excess Acid Neutralising Capacity (s-23Q)	----	0.020	% S	1.56	1.54	5.34	2.50	17.8
EA029-H: Acid Base Accounting								
ANC Fineness Factor	----	0.5	-	1.5	1.5	1.5	1.5	1.5
Net Acidity (sulfur units)	----	0.02	% S	<0.02	<0.02	<0.02	<0.02	<0.02
Net Acidity (acidity units)	----	10	mole H+ / t	<10	<10	<10	<10	<10
Liming Rate	----	1	kg CaCO3/t	<1	<1	<1	<1	<1
Net Acidity excluding ANC (sulfur units)	----	0.02	% S	0.02	0.02	0.03	0.16	0.65
Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	10	14	17	97	404
Liming Rate excluding ANC	----	1	kg CaCO3/t	1	1	1	7	30
EA037: Ass Field Screening Analysis								
ø pH (F)	----	0.1	pH Unit	7.8	8.1	8.6	8.5	8.1
ø pH (Fox)	----	0.1	pH Unit	8.1	5.7	6.5	6.0	6.2
ø Reaction Rate	----	1	-	Strong	Moderate	Moderate	Moderate	Moderate
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	10.3	25.4	11.1	----	----
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	----	0.1	g/kg	No	No	No	----	----
Organic Fibre	----	0.1	g/kg	No	No	No	----	----
Sample weight (dry)	----	0.01	g	396	502	377	----	----
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	A. SMYLIE	A. SMYLIE	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Aluminium	7429-90-5	50	mg/kg	3160	1840	860	----	----
Arsenic	7440-38-2	5	mg/kg	<5	7	<5	----	----
Barium	7440-39-3	10	mg/kg	30	<10	<10	----	----
Beryllium	7440-41-7	1	mg/kg	<1	<1	<1	----	----
Boron	7440-42-8	50	mg/kg	<50	<50	<50	----	----
Cobalt	7440-48-4	2	mg/kg	3	<2	<2	----	----
Copper	7440-50-8	5	mg/kg	<5	<5	<5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	MW2_0-0.5	MW2_3-3.5	QC101	MW1_4.0-4.5	MW2_4.5-5.0
			Sampling date / time	28-Jul-2022 11:00	28-Jul-2022 11:00	29-Jul-2022 00:00	28-Jul-2022 11:20	28-Jul-2022 12:35
Compound	CAS Number	LOR	Unit	EP2209615-016	EP2209615-017	EP2209615-018	EP2209615-019	EP2209615-020
				Result	Result	Result	Result	Result
EG005(ED093)T: Total Metals by ICP-AES - Continued								
Manganese	7439-96-5	5	mg/kg	**130**	**91**	**16**	----	----
Molybdenum	7439-98-7	2	mg/kg	<2	<2	<2	----	----
Nickel	7440-02-0	2	mg/kg	**2**	<2	<2	----	----
Silver	7440-22-4	2	mg/kg	<2	<2	<2	----	----
Vanadium	7440-62-2	5	mg/kg	**15**	**12**	<5	----	----
Zinc	7440-66-6	5	mg/kg	<5	<5	**10**	----	----
EG020T: Total Metals by ICP-MS								
Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
Lead	7439-92-1	0.1	mg/kg	**2.9**	**1.5**	**7.5**	----	----
Selenium	7782-49-2	1	mg/kg	<1	<1	<1	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	----	----
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	1	mg/kg	<1	<1	<1	----	----
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser								
Weak Acid Dissociable Cyanide	----	1	mg/kg	<1	<1	<1	----	----
EK040T: Fluoride Total								
Fluoride	16984-48-8	40	mg/kg	**50**	<40	**80**	----	----
EP035G: Total Phenol by Discrete Analyser								
Phenols (Total)	----	1	mg/kg	<1	<1	<1	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	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	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	MW2_0-0.5	MW2_3-3.5	QC101	MW1_4.0-4.5	MW2_4.5-5.0
				Sampling date / time	28-Jul-2022 11:00	28-Jul-2022 11:00	29-Jul-2022 00:00	28-Jul-2022 11:20	28-Jul-2022 12:35
Compound	CAS Number	LOR	Unit		EP2209615-016	EP2209615-017	EP2209615-018	EP2209615-019	EP2209615-020
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
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	----	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
^ Total OCP	----	5.00	mg/kg		<5.00	<5.00	<5.00	----	----
EP070: Total Petroleum Hydrocarbons - Speciation									
Aliphatic C16-C35	----	100	mg/kg		<100	<100	<100	----	----
Aliphatic > C35	----	100	mg/kg		<100	<100	<100	----	----
Aromatic C16-C35	----	90	mg/kg		<90	<90	<90	----	----
Aromatic > C35	----	100	mg/kg		<100	<100	<100	----	----
EP074A: Monocyclic Aromatic Hydrocarbons									
Styrene	100-42-5	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
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	----	----
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	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	MW2_0-0.5	MW2_3-3.5	QC101	MW1_4.0-4.5	MW2_4.5-5.0
			Sampling date / time	28-Jul-2022 11:00	28-Jul-2022 11:00	29-Jul-2022 00:00	28-Jul-2022 11:20	28-Jul-2022 12:35
Compound	CAS Number	LOR	Unit	EP2209615-016	EP2209615-017	EP2209615-018	EP2209615-019	EP2209615-020
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued								
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	----	----
Benz(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	----	----
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	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	MW2_0-0.5	MW2_3-3.5	QC101	MW1_4.0-4.5	MW2_4.5-5.0
				Sampling date / time	28-Jul-2022 11:00	28-Jul-2022 11:00	29-Jul-2022 00:00	28-Jul-2022 11:20	28-Jul-2022 12:35
Compound	CAS Number	LOR	Unit		EP2209615-016	EP2209615-017	EP2209615-018	EP2209615-019	EP2209615-020
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
>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	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	----	----
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
2.4-D	94-75-7	0.02	mg/kg		<0.02	<0.02	<0.02	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg		<0.001	<0.001	<0.001	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	MW2_0-0.5	MW2_3-3.5	QC101	MW1_4.0-4.5	MW2_4.5-5.0
			Sampling date / time	28-Jul-2022 11:00	28-Jul-2022 11:00	29-Jul-2022 00:00	28-Jul-2022 11:20	28-Jul-2022 12:35
Compound	CAS Number	LOR	Unit	EP2209615-016	EP2209615-017	EP2209615-018	EP2209615-019	EP2209615-020
				Result	Result	Result	Result	Result
EP231B: Perfluoroalkyl Carboxylic Acids - Continued								
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	<0.0002	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	<0.0005	----	----
EP231P: PFAS Sums								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	MW2_0-0.5	MW2_3-3.5	QC101	MW1_4.0-4.5	MW2_4.5-5.0
				Sampling date / time	28-Jul-2022 11:00	28-Jul-2022 11:00	29-Jul-2022 00:00	28-Jul-2022 11:20	28-Jul-2022 12:35
Compound	CAS Number	LOR	Unit		EP2209615-016	EP2209615-017	EP2209615-018	EP2209615-019	EP2209615-020
					Result	Result	Result	Result	Result
EP231P: PFAS Sums - Continued									
Sum of PFAS	----	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg		<0.0002	<0.0002	<0.0002	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		108	106	109	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		127	134	132	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		80.8	63.9	95.5	----	----
EP070: Total Petroleum Hydrocarbons - Speciation									
2-Bromonaphthalene	580-13-2	1	%		101	117	98.1	----	----
2-Fluorobiphenyl	321-60-8	1	%		106	123	102	----	----
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.5	%		88.9	86.8	89.3	----	----
Toluene-D8	2037-26-5	0.5	%		87.1	85.8	86.6	----	----
4-Bromofluorobenzene	460-00-4	0.5	%		87.4	85.5	85.4	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		87.4	86.8	88.0	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		101	97.1	100.0	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		67.9	71.6	71.8	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		105	101	106	----	----
Anthracene-d10	1719-06-8	0.5	%		102	99.3	99.8	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		124	121	124	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		87.0	84.7	86.9	----	----
Toluene-D8	2037-26-5	0.2	%		88.4	87.0	87.4	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		85.4	82.2	83.8	----	----
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2.4-Dichlorophenyl Acetic Acid	19719-28-9	0.02	%		81.0	72.6	67.8	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		96.0	87.5	95.5	----	----
13C8-PFOA	----	0.0002	%		92.5	100	96.5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	MW2_0-0.5	MW2_3-3.5	QC101	MW1_4.0-4.5	MW2_4.5-5.0
			Sampling date / time	28-Jul-2022 11:00	28-Jul-2022 11:00	29-Jul-2022 00:00	28-Jul-2022 11:20	28-Jul-2022 12:35
Compound	CAS Number	LOR	Unit	EP2209615-016	EP2209615-017	EP2209615-018	EP2209615-019	EP2209615-020
				Result	Result	Result	Result	Result
EP231S: PFAS Surrogate - Continued								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	QC102	----	----	----	----
			Sampling date / time	28-Jul-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EP2209615-026	--------	--------	--------	--------
				Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	**18.1**	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	QC102	----	----	----	----
			Sampling date / time	28-Jul-2022 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EP2209615-026	--------	--------	--------	--------
				Result	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides - Continued								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	----	----	----	----
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	----	----	----	----
EP231P: PFAS Sums								
Sum of PFAS	----	0.0002	mg/kg	<0.0002	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	<0.0002	----	----	----	----
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	<0.0002	----	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.0002	%	**100**	----	----	----	----
13C8-PFOA	----	0.0002	%	**101**	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	RN01	RN02	TBW 865	TSW 041	TSW 041 Control
			Sampling date / time	29-Jul-2022 00:00	29-Jul-2022 00:00	28-Jul-2022 00:00	27-Jul-2022 00:00	27-Jul-2022 00:00
Compound	CAS Number	LOR	Unit	EP2209615-021	EP2209615-022	EP2209615-023	EP2209615-024	EP2209615-025
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**6.04**	**5.56**	----	----	----
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	----	----	----
Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	----	----	----
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	----	----	----
Barium	7440-39-3	0.001	mg/L	<0.001	<0.001	----	----	----
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	----	----	----
Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	----	----	----
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	----	----	----
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	----	----	----
Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	----	----	----
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	----	----	----
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	----	----	----
Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	----	----	----
Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	----	----	----
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	----	----	----
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	----	----	----
Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	----	----	----
Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	----	----	----
EG050T: Total Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	----	----	----
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	0.004	mg/L	<0.004	<0.004	----	----	----
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser								
Weak Acid Dissociable Cyanide	----	0.004	mg/L	<0.004	<0.004	----	----	----
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	<0.1	<0.1	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
^ Total Polychlorinated biphenyls	----	1	µg/L	<1	<1	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	RN01	RN02	TBW 865	TSW 041	TSW 041 Control
				Sampling date / time	29-Jul-2022 00:00	29-Jul-2022 00:00	28-Jul-2022 00:00	27-Jul-2022 00:00	27-Jul-2022 00:00
Compound	CAS Number	LOR	Unit		EP2209615-021	EP2209615-022	EP2209615-023	EP2209615-024	EP2209615-025
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
beta-BHC	319-85-7	0.5	µg/L		<0.5	<0.5	----	----	----
gamma-BHC	58-89-9	0.5	µg/L		<0.5	<0.5	----	----	----
delta-BHC	319-86-8	0.5	µg/L		<0.5	<0.5	----	----	----
Heptachlor	76-44-8	0.5	µg/L		<0.5	<0.5	----	----	----
Aldrin	309-00-2	0.5	µg/L		<0.5	<0.5	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L		<0.5	<0.5	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L		<0.5	<0.5	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L		<0.5	<0.5	----	----	----
cis-Chlordane	5103-71-9	0.5	µg/L		<0.5	<0.5	----	----	----
Dieldrin	60-57-1	0.5	µg/L		<0.5	<0.5	----	----	----
4.4`-DDE	72-55-9	0.5	µg/L		<0.5	<0.5	----	----	----
Endrin	72-20-8	0.5	µg/L		<0.5	<0.5	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L		<0.5	<0.5	----	----	----
4.4`-DDD	72-54-8	0.5	µg/L		<0.5	<0.5	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L		<0.5	<0.5	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L		<0.5	<0.5	----	----	----
4.4`-DDT	50-29-3	2.0	µg/L		<2.0	<2.0	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L		<0.5	<0.5	----	----	----
Methoxychlor	72-43-5	2.0	µg/L		<2.0	<2.0	----	----	----
^ Total Chlordane (sum)	----	0.5	µg/L		<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	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L		<0.5	<0.5	----	----	----
EP070: Total Petroleum Hydrocarbons - Speciation									
Aromatic C10-C14	----	50	µg/L		<50	<50	----	----	----
Aromatic C15-C28	----	100	µg/L		<100	<100	----	----	----
Aromatic C29-C36	----	50	µg/L		<50	<50	----	----	----
Aliphatic C10-C14	----	50	µg/L		<50	<50	----	----	----
Aliphatic C15-C28	----	100	µg/L		<100	<100	----	----	----
Aliphatic C29-C36	----	50	µg/L		<50	<50	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	<20	<20	230	260
C10 - C14 Fraction	----	50	µg/L		<50	<50	----	----	----
C15 - C28 Fraction	----	100	µg/L		<100	<100	----	----	----
C29 - C36 Fraction	----	50	µg/L		<50	<50	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	RN01	RN02	TBW 865	TSW 041	TSW 041 Control
				Sampling date / time	29-Jul-2022 00:00	29-Jul-2022 00:00	28-Jul-2022 00:00	27-Jul-2022 00:00	27-Jul-2022 00:00
Compound	CAS Number	LOR	Unit		EP2209615-021	EP2209615-022	EP2209615-023	EP2209615-024	EP2209615-025
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	280	330
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	170	220
>C10 - C16 Fraction	----	100	µg/L		<100	<100	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	<100	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	<100	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	18	19
Toluene	108-88-3	2	µg/L		<2	<2	<2	18	19
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	18	18
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	36	37
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	18	19
^ Total Xylenes	----	2	µg/L		<2	<2	<2	54	56
^ Sum of BTEX	----	1	µg/L		<1	<1	<1	108	112
Naphthalene	91-20-3	5	µg/L		<5	<5	<5	<5	<5
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%		67.7	57.7	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%		65.5	56.1	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%		80.4	72.3	----	----	----
EP070S:TPH Surrogates - Speciation									
2-Fluorobiphenyl	321-60-8	1	%		114	120	----	----	----
2-Bromonaphthalene	580-13-2	1	%		117	126	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		111	102	110	110	108
Toluene-D8	2037-26-5	2	%		104	97.9	102	98.8	100.0
4-Bromofluorobenzene	460-00-4	2	%		95.8	93.9	96.5	98.8	97.9

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	BH01_0-0.5 - 28-Jul-2022 00:00	Soil sample.
EA200: Description	BH01_2.5-3.0 - 28-Jul-2022 00:00	Soil sample.
EA200: Description	BH02_0-0.1 - 28-Jul-2022 00:00	Soil sample.
EA200: Description	BH02_2.5-3.0 - 28-Jul-2022 00:00	Soil sample.
EA200: Description	BH03_0.5-1.0 - 28-Jul-2022 00:00	Soil sample.
EA200: Description	BH03_2.0-2.5 - 28-Jul-2022 00:00	Soil sample.
EA200: Description	BH04_0-0.5 - 28-Jul-2022 00:00	Soil sample.
EA200: Description	BH04_2.5-3.0 - 28-Jul-2022 00:00	Soil sample.
EA200: Description	BH05_0-0.5 - 29-Jul-2022 00:00	Soil sample.
EA200: Description	BH06_0.5-1.0 - 29-Jul-2022 00:00	Soil sample.
EA200: Description	BH06_2.5-3.0 - 29-Jul-2022 00:00	Soil sample.
EA200: Description	BH07_0.5-1.0 - 29-Jul-2022 08:55	Soil sample.
EA200: Description	BH07_2.5-3.0 - 29-Jul-2022 08:55	Soil sample.
EA200: Description	MW1_0-0.5 - 28-Jul-2022 11:00	Soil sample.
EA200: Description	MW1_3-3.5 - 28-Jul-2022 11:00	Soil sample.
EA200: Description	MW2_0-0.5 - 28-Jul-2022 11:00	Soil sample.
EA200: Description	MW2_3-3.5 - 28-Jul-2022 11:00	Soil sample.
EA200: Description	QC101 - 29-Jul-2022 00:00	Soil sample.

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	43	119
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	53	152
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	28	152
EP070: Total Petroleum Hydrocarbons - Speciation			
2-Bromonaphthalene	580-13-2	70	130
2-Fluorobiphenyl	321-60-8	70	130
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	66	127
Toluene-D8	2037-26-5	66	126
4-Bromofluorobenzene	460-00-4	60	115
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	57	119
2-Chlorophenol-D4	93951-73-6	52	130
2.4.6-Tribromophenol	118-79-6	40	132
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	53	139
Anthracene-d10	1719-06-8	68	124
4-Terphenyl-d14	1718-51-0	66	132
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	63	132
Toluene-D8	2037-26-5	66	125
4-Bromofluorobenzene	460-00-4	60	124
EP202S: Phenoxyacetic Acid Herbicide Surrogate			
2.4-Dichlorophenyl Acetic Acid	19719-28-9	45	139
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	27	136
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	50	146
EP068T: Organophosphorus Pesticide Surrogate			

Sub-Matrix: **WATER**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP068T: Organophosphorus Pesticide Surrogate - Continued			
DEF	78-48-8	27	153
EP070S:TPH Surrogates - Speciation			
2-Fluorobiphenyl	321-60-8	70	130
2-Bromonaphthalene	580-13-2	70	130
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	61	141
Toluene-D8	2037-26-5	73	126
4-Bromofluorobenzene	460-00-4	60	125

Inter-Laboratory Testing

Analysis conducted by ALS Melbourne, NATA accreditation no. 825, site no. 13778 (Chemistry).

(SOIL) EK040T: Fluoride Total

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

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology).

(SOIL) EP202A: Phenoxyacetic Acid Herbicides by LCMS

(SOIL) EP202S: Phenoxyacetic Acid Herbicide Surrogate

(SOIL) EP035G: Total Phenol by Discrete Analyser

(SOIL) EP231B: Perfluoroalkyl Carboxylic Acids

(SOIL) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(SOIL) EP231C: Perfluoroalkyl Sulfonamides

(SOIL) EP231A: Perfluoroalkyl Sulfonic Acids

(SOIL) EP231S: PFAS Surrogate

(SOIL) EP231P: PFAS Sums

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology). Only applies to samples EP2209615 (026).

(SOIL) EA055: Moisture Content (Dried @ 105-110°C)

Automated Guideline Comparison Report

WA DWER Landfill Waste Classification and Waste Definitions 1996 (As amended December 2019)

Work Order	: **EP2209615**	Page	: 1 of 83
Client	: **AURECON AUSTRALASIA PTY LTD**	Laboratory	: Environmental Division Perth
Contact	: Nathan Seaver		
Address	: 1/256 ADELAIDE TC PERTH WA, AUSTRALIA 6000	Address	: 26 Rigali Way Wangara Western Australia Australia 6065
E-mail	: Nathan.Seaver@aurecongroup.com	E-mail	: Tyler.Anderson@ALSGlobal.com
Telephone	: ----	Telephone	: +61 2 8784 8555
Facsimile	: ----	Facsimile	: +61-8-9406 1399
Project	: Bunbry Quantem Terminal	Date Received	: 29-Jul-2022 17:00
Order number	: ----	Date Analysed	: 02-Aug-2022
C-O-C number	: ----	Date Issued	: 17-Aug-2022 11:10
No. of samples received	: 26		
No. of samples analysed	: 26	Quote number	: EN/057 - Primary work only

General Comments

This guideline comparison report only provides comparison data for parameters, specifically listed within a guideline, that are analysed by ALS. ALS does not warrant that all analytes within any guideline have been tested.

Where a result is required to meet compliance limits the associated uncertainty **must be** considered. Refer to the ALS Contract Terms and Conditions for details, and EnviroMail 53 for a guide on how to interpret the measurement of uncertainty (MU).

- Total Fluoride conducted by ALS Melbourne, NATA accreditation no. 825, site no 13778
- Asbestos conducted by ALS Newcastle, NATA accreditation no. 825, site no 1656.
- PFAS, Herbicides and Phenols conducted by ALS Sydney, NATA accreditation no. 825, site no 10911.
- EP202: Poor matrix spike recoveries for Picloram and Clopyralid due to matrix effects.
- EP202: Poor matrix spike recoveries for Clopyralid due to matrix effects.
- This guideline comparison report only provides evaluation data where chemical parameters specifically listed within the DEC Waste Classification and Waste Definitions 1996 (as amended December 2019) guideline are analysed by ALS using P-19/1 package.
- 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.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP074: Where reported, Sum of chlorinated hydrocarbons includes carbon tetrachloride, chlorobenzene, chloroform, 1,2-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichloroethane, 1,1-dichloroethene, cis-1,2-dichlorothene, trans-1,2-dichlorothene, 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, 1,2,4-trichlorobenzene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethene, vinyl chloride, hexachlorobutadiene and methylene chloride.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene 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.
- EP068: Sample 'BH07_2.5-3.0' (EP2209615-013) shows poor surrogate recovery due to matrix interference.
- EG048G (Hexavalent Chromium by Alkaline Digestion): LOR raised for sample #1 due to possible sample matrix interference.
- EG005: Poor duplicate precision was obtained for Al due to possible sample heterogeneity. Results have been confirmed by re-extraction and re-analysis.
- For the 'Summary of Thresholds Reached or Exceeded' to accurately function, all samples must be analysed and included in the 'Analytical Results' section of the following report. Please verify that all required sample IDs are listed and analysed.
- This Automated Guideline Comparison report assesses potential chemical 'contaminants' versus guideline criteria. Other parameters may impact classification and 95% upper control limits may also be applied - refer to EPA Regulations.
- This guideline comparison report only provides evaluation of total concentration data against upper limit thresholds for Class I-IV.
- ASS: EA029 (SPOCAS): Retained Acidity not required because pH KCl greater than or equal to 4.5
- ASS: EA037 (Rapid Field and F(ox) screening): pH F(ox) Reaction Rate: 1 - Slight; 2 - Moderate; 3 - Strong; 4 - Extreme
- EA037 ASS Field Screening: NATA accreditation does not cover performance of this service.
- ASS: EA029 (SPOCAS): Liming rate is calculated and reported on a dry weight basis assuming use of fine agricultural lime ($CaCO_3$) and using a safety factor of 1.5 to allow for non-homogeneous mixing and poor reactivity of lime. For conversion of Liming Rate from kg/t dry weight to kg/m3 in-situ soil, multiply reported results x wet bulk density of soil in t/m3.
- 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.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

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

Summary of Thresholds Reached or Exceeded

WA DWER Landfill Waste Classification and Waste Definitions 1996 (As amended December 2019)

Class II - Table 3 Contaminant threshold (CT2) values for waste not requiring leachate

Client Sample ID	ALS Sample ID	Compound	Method	LOR	Limits	Result
BH01_0-0.5	**EP2209615-001**	Lead	EG020T	0.1	*< 2 mg/kg*	**13.6 mg/kg**
MW1_3-3.5	**EP2209615-015**	Lead	EG020T	0.1	*< 2 mg/kg*	**2.4 mg/kg**
BH06_2.5-3.0	**EP2209615-011**	Lead	EG020T	0.1	*< 2 mg/kg*	**2.5 mg/kg**
MW2_0-0.5	**EP2209615-016**	Lead	EG020T	0.1	*< 2 mg/kg*	**2.9 mg/kg**
BH05_0-0.5	**EP2209615-009**	Lead	EG020T	0.1	*< 2 mg/kg*	**3.4 mg/kg**
BH06_0.5-1.0	**EP2209615-010**	Lead	EG020T	0.1	*< 2 mg/kg*	**3.6 mg/kg**
BH04_0-0.5	**EP2209615-007**	Lead	EG020T	0.1	*< 2 mg/kg*	**3.8 mg/kg**
BH04_2.5-3.0	**EP2209615-008**	Lead	EG020T	0.1	*< 2 mg/kg*	**3.9 mg/kg**
BH07_0.5-1.0	**EP2209615-012**	Lead	EG020T	0.1	*< 2 mg/kg*	**3.9 mg/kg**
BH02_0-0.1	**EP2209615-003**	Fluoride	EK040T	40	*< 300 mg/kg*	**320 mg/kg**
BH04_2.5-3.0	**EP2209615-008**	Nickel	EG005T	2	*< 4 mg/kg*	**4 mg/kg**
BH07_0.5-1.0	**EP2209615-012**	Nickel	EG005T	2	*< 4 mg/kg*	**4 mg/kg**
BH07_2.5-3.0	**EP2209615-013**	Lead	EG020T	0.1	*< 2 mg/kg*	**4.2 mg/kg**
MW1_0-0.5	**EP2209615-014**	Lead	EG020T	0.1	*< 2 mg/kg*	**5.8 mg/kg**
QC101	**EP2209615-018**	Lead	EG020T	0.1	*< 2 mg/kg*	**7.5 mg/kg**
BH02_0-0.1	**EP2209615-003**	Lead	EG020T	0.1	*< 2 mg/kg*	**9.2 mg/kg**

WA DWER Landfill Waste Classification and Waste Definitions 1996 (As amended December 2019)

Class I - Table 3 Contaminant threshold (CT1) values for waste not requiring leachate

Client Sample ID	ALS Sample ID	Compound	Method	LOR	Limits	Result
BH01_0-0.5	**EP2209615-001**	Lead	EG020T	0.1	*< 2 mg/kg*	**13.6 mg/kg**
MW1_3-3.5	**EP2209615-015**	Lead	EG020T	0.1	*< 2 mg/kg*	**2.4 mg/kg**
BH06_2.5-3.0	**EP2209615-011**	Lead	EG020T	0.1	*< 2 mg/kg*	**2.5 mg/kg**
MW2_0-0.5	**EP2209615-016**	Lead	EG020T	0.1	*< 2 mg/kg*	**2.9 mg/kg**
BH05_0-0.5	**EP2209615-009**	Lead	EG020T	0.1	*< 2 mg/kg*	**3.4 mg/kg**
BH06_0.5-1.0	**EP2209615-010**	Lead	EG020T	0.1	*< 2 mg/kg*	**3.6 mg/kg**
BH04_0-0.5	**EP2209615-007**	Lead	EG020T	0.1	*< 2 mg/kg*	**3.8 mg/kg**
BH04_2.5-3.0	**EP2209615-008**	Lead	EG020T	0.1	*< 2 mg/kg*	**3.9 mg/kg**
BH07_0.5-1.0	**EP2209615-012**	Lead	EG020T	0.1	*< 2 mg/kg*	**3.9 mg/kg**
BH02_0-0.1	**EP2209615-003**	Fluoride	EK040T	40	*< 300 mg/kg*	**320 mg/kg**
BH04_2.5-3.0	**EP2209615-008**	Nickel	EG005T	2	*< 4 mg/kg*	**4 mg/kg**
BH07_0.5-1.0	**EP2209615-012**	Nickel	EG005T	2	*< 4 mg/kg*	**4 mg/kg**
BH07_2.5-3.0	**EP2209615-013**	Lead	EG020T	0.1	*< 2 mg/kg*	**4.2 mg/kg**
MW1_0-0.5	**EP2209615-014**	Lead	EG020T	0.1	*< 2 mg/kg*	**5.8 mg/kg**
QC101	**EP2209615-018**	Lead	EG020T	0.1	*< 2 mg/kg*	**7.5 mg/kg**
BH02_0-0.1	**EP2209615-003**	Lead	EG020T	0.1	*< 2 mg/kg*	**9.2 mg/kg**

Analytical Results

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 1 - Table 4 Concentration limit (CL1) values for waste classification

Sub-Matrix: **SOIL**

Compound	Method	LOR	Unit	Guideline Lower Limit	Guideline Upper Limit	BH01_0-0.5 28-Jul-2022 15:00 EP2209615-001	MU	BH01_2.5-3.0 28-Jul-2022 15:00 EP2209615-002	MU	BH02_0-0.1 28-Jul-2022 15:00 EP2209615-003	MU	BH02_2.5-3.0 28-Jul-2022 15:00 EP2209615-004	MU	BH03_0.5-1.0 28-Jul-2022 15:00 EP2209615-005	MU
EG005(ED093)T: Total Metals by ICP-AES															
Aluminium	EG005T	50	mg/kg	----	50000	**670**	± 90	**660**	± 90	**1390**	± 190	**740**	± 100	**880**	± 120
Arsenic	EG005T	5	mg/kg	----	500	<5	--	<5	--	<5	--	<5	--	<5	--
Barium	EG005T	10	mg/kg	----	50000	**30**	± 2	<10	--	<10	--	<10	--	<10	--
Beryllium	EG005T	1	mg/kg	----	100	<1		<1		<1		<1		<1	
Boron	EG005T	50	mg/kg	----	50000	<50	--	<50	--	<50	--	<50	--	<50	--
Cobalt	EG005T	2	mg/kg	----	50000	<2	--	<2	--	<2	--	<2	--	<2	--
Copper	EG005T	5	mg/kg	----	50000	<5	--	<5	--	<5	--	<5	--	**5**	± 0.5
Manganese	EG005T	5	mg/kg	----	50000	**43**	± 6	**7**	± 1	**20**	± 3	**8**	± 1	**21**	± 3
Molybdenum	EG005T	2	mg/kg	----	1000	<2		<2		<2		<2		<2	
Nickel	EG005T	2	mg/kg	----	3000	<2	--	<2	--	<2	--	<2	--	<2	--
Silver	EG005T	2	mg/kg	----	180	<2		<2		<2		<2		<2	
Vanadium	EG005T	5	mg/kg	----	50000	<5	--	<5	--	**6**	± 0.6	<5	--	<5	--
Zinc	EG005T	5	mg/kg	----	50000	**30**	± 3	<5	--	**13**	± 1	<5	--	<5	--
EG020T: Total Metals by ICP-MS															
Cadmium	EG020T	0.1	mg/kg	----	100	<0.1		<0.1		<0.1		<0.1		<0.1	
Lead	EG020T	0.1	mg/kg	----	1500	**13.6**		**1.8**		**9.2**		**0.9**		**1.2**	
Selenium	EG020T	1	mg/kg	----	50	<1		<1		<1		<1		<1	
EG035T: Total Recoverable Mercury by FIMS															
Mercury	EG035T	0.1	mg/kg	----	75	<0.1	--	<0.1	--	<0.1	--	<0.1	--	<0.1	--
EG048: Hexavalent Chromium (Alkaline Digest)															
Hexavalent Chromium	EG048G	0.5	mg/kg	----	500	<2.5		<0.5		<0.5		<0.5		<0.5	
EK026SF: Total CN by Segmented Flow Analyser															
Total Cyanide	EK026SF	1	mg/kg	----	2500	<1		<1		<1		<1		<1	
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser															
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	1250	<1	--	<1	--	<1	--	<1	--	<1	--
EK040T: Fluoride Total															
Fluoride	EK040T	40	mg/kg	----	10000	**220**	± 40	**150**	± 40	**320**	± 60	**100**	± 30	<40	--
EP035G: Total Phenol by Discrete Analyser															
Phenols (Total)	EP035SF	1	mg/kg	----	42500	<1		<1		<1		<1		<1	
EP066: Polychlorinated Biphenyls (PCB)															
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1		<0.1		<0.1		<0.1		<0.1	
EP068A: Organochlorine Pesticides (OC)															
Total OCP	EP068	5.00	mg/kg	----	50	<5.00		<5.00		<5.00		<5.00		<5.00	

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 1 - Table 4 Concentration limit (CL1) values for waste classification

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time* BH01_0-0.5 28-Jul-2022 15:00 EP2209615-001 MU	BH01_2.5-3.0 28-Jul-2022 15:00 EP2209615-002 MU	BH02_0-0.1 28-Jul-2022 15:00 EP2209615-003 MU	BH02_2.5-3.0 28-Jul-2022 15:00 EP2209615-004 MU	BH03_0.5-1.0 28-Jul-2022 15:00 EP2209615-005 MU
EP068A: Organochlorine Pesticides (OC) - Continued										
EP070: Total Petroleum Hydrocarbons - Speciation										
Aliphatic C16-C35	EP070	100	mg/kg	----	28000	<100	<100	<100	<100	<100
Aromatic C16-C35	EP070	90	mg/kg	----	450	<90	<90	<90	<90	<90
EP074A: Monocyclic Aromatic Hydrocarbons										
Styrene	EP074	0.5	mg/kg	----	108	<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	100	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP080	10	mg/kg	----	2800	<10	<10	<10	<10	<10
EP080: BTEXN										
Benzene	EP080	0.2	mg/kg	----	18	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	EP080	0.5	mg/kg	----	518	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	EP080	0.5	mg/kg	----	1080	<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes	EP080	0.5	mg/kg	----	1800	<0.5	<0.5	<0.5	<0.5	<0.5
EP202A: Phenoxyacetic Acid Herbicides by LCMS										
2.4-D	EP202	0.02	mg/kg	----	360	<0.02	<0.02	<0.02	<0.02	<0.02

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 2 - Table 4 Concentration limit (CL2) values for waste classification

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time* BH01_0-0.5 28-Jul-2022 15:00 EP2209615-001 MU	BH01_2.5-3.0 28-Jul-2022 15:00 EP2209615-002 MU	BH02_0-0.1 28-Jul-2022 15:00 EP2209615-003 MU	BH02_2.5-3.0 28-Jul-2022 15:00 EP2209615-004 MU	BH03_0.5-1.0 28-Jul-2022 15:00 EP2209615-005 MU
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	50000	**670** ± 90	**660** ± 90	**1390** ± 190	**740** ± 100	**880** ± 120
Arsenic	EG005T	5	mg/kg	----	500	<5 --	<5 --	<5 --	<5 --	<5 --
Barium	EG005T	10	mg/kg	----	50000	**30** ± 2	<10 --	<10 --	<10 --	<10 --
Beryllium	EG005T	1	mg/kg	----	100	<1	<1	<1	<1	<1
Boron	EG005T	50	mg/kg	----	50000	<50 --	<50 --	<50 --	<50 --	<50 --
Cobalt	EG005T	2	mg/kg	----	50000	<2 --	<2 --	<2 --	<2 --	<2 --
Copper	EG005T	5	mg/kg	----	50000	<5 --	<5 --	<5 --	<5 --	**5** ± 0.5
Manganese	EG005T	5	mg/kg	----	50000	**43** ± 6	**7** ± 1	**20** ± 3	**8** ± 1	**21** ± 3
Molybdenum	EG005T	2	mg/kg	----	1000	<2	<2	<2	<2	<2
Nickel	EG005T	2	mg/kg	----	3000	<2 --	<2 --	<2 --	<2 --	<2 --
Silver	EG005T	2	mg/kg	----	180	<2	<2	<2	<2	<2
Vanadium	EG005T	5	mg/kg	----	50000	<5 --	<5 --	**6** ± 0.6	<5 --	<5 --
Zinc	EG005T	5	mg/kg	----	50000	**30** ± 3	<5 --	**13** ± 1	<5 --	<5 --
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	100	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	EG020T	0.1	mg/kg	----	1500	**13.6**	**1.8**	**9.2**	**0.9**	**1.2**
Selenium	EG020T	1	mg/kg	----	50	<1	<1	<1	<1	<1
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	75	<0.1 --	<0.1 --	<0.1 --	<0.1 --	<0.1 --
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	500	<2.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	2500	<1	<1	<1	<1	<1
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	1250	<1 --	<1 --	<1 --	<1 --	<1 --
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	10000	**220** ± 40	**150** ± 40	**320** ± 60	**100** ± 30	<40 --
EP035G: Total Phenol by Discrete Analyser										
Phenols (Total)	EP035SF	1	mg/kg	----	42500	<1	<1	<1	<1	<1
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	50	<5.00	<5.00	<5.00	<5.00	<5.00
EP070: Total Petroleum Hydrocarbons - Speciation										

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 2 - Table 4 Concentration limit (CL2) values for waste classification

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time*	**BH01_0-0.5** 28-Jul-2022 15:00	**BH01_2.5-3.0** 28-Jul-2022 15:00	**BH02_0-0.1** 28-Jul-2022 15:00	**BH02_2.5-3.0** 28-Jul-2022 15:00	**BH03_0.5-1.0** 28-Jul-2022 15:00
							EP2209615-001 MU	**EP2209615-002** MU	**EP2209615-003** MU	**EP2209615-004** MU	**EP2209615-005** MU
EP070: Total Petroleum Hydrocarbons - Speciation - Continued											
Aliphatic C16-C35	EP070	100	mg/kg	----	28000		<100	<100	<100	<100	<100
Aromatic C16-C35	EP070	90	mg/kg	----	450		<90	<90	<90	<90	<90
EP074A: Monocyclic Aromatic Hydrocarbons											
Styrene	EP074	0.5	mg/kg	----	108		<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	5		<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	100		<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP080	10	mg/kg	----	2800		<10	<10	<10	<10	<10
EP080: BTEXN											
Benzene	EP080	0.2	mg/kg	----	18		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	EP080	0.5	mg/kg	----	518		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	EP080	0.5	mg/kg	----	1080		<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes	EP080	0.5	mg/kg	----	1800		<0.5	<0.5	<0.5	<0.5	<0.5
EP202A: Phenoxyacetic Acid Herbicides by LCMS											
2.4-D	EP202	0.02	mg/kg	----	360		<0.02	<0.02	<0.02	<0.02	<0.02

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 3 - Table 4 Concentration limit (CL3) values for waste classification

Sub-Matrix: **SOIL**

				Sample ID		BH01_0-0.5	BH01_2.5-3.0	BH02_0-0.1	BH02_2.5-3.0	BH03_0.5-1.0
				Sampling date/time		28-Jul-2022 15:00	28-Jul-2022 15:00	28-Jul-2022 15:00	28-Jul-2022 15:00	28-Jul-2022 15:00
Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	EP2209615-001 MU	EP2209615-002 MU	EP2209615-003 MU	EP2209615-004 MU	EP2209615-005 MU
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	100000	**670** ± 90	**660** ± 90	**1390** ± 190	**740** ± 100	**880** ± 120
Arsenic	EG005T	5	mg/kg	----	5000	<5 --	<5 --	<5 --	<5 --	<5 --
Barium	EG005T	10	mg/kg	----	100000	**30** ± 2	<10 --	<10 --	<10 --	<10 --
Beryllium	EG005T	1	mg/kg	----	1000	<1	<1	<1	<1	<1
Boron	EG005T	50	mg/kg	----	100000	<50 --	<50 --	<50 --	<50 --	<50 --
Cobalt	EG005T	2	mg/kg	----	100000	<2 --	<2 --	<2 --	<2 --	<2 --
Copper	EG005T	5	mg/kg	----	100000	<5 --	<5 --	<5 --	<5 --	**5** ± 0.5
Manganese	EG005T	5	mg/kg	----	100000	**43** ± 6	**7** ± 1	**20** ± 3	**8** ± 1	**21** ± 3
Molybdenum	EG005T	2	mg/kg	----	10000	<2	<2	<2	<2	<2
Nickel	EG005T	2	mg/kg	----	30000	<2 --	<2 --	<2 --	<2 --	<2 --
Silver	EG005T	2	mg/kg	----	1800	<2	<2	<2	<2	<2
Vanadium	EG005T	5	mg/kg	----	100000	<5 --	<5 --	**6** ± 0.6	<5 --	<5 --
Zinc	EG005T	5	mg/kg	----	100000	**30** ± 3	<5 --	**13** ± 1	<5 --	<5 --
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	1000	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	EG020T	0.1	mg/kg	----	15000	**13.6**	**1.8**	**9.2**	**0.9**	**1.2**
Selenium	EG020T	1	mg/kg	----	500	<1	<1	<1	<1	<1
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	750	<0.1 --	<0.1 --	<0.1 --	<0.1 --	<0.1 --
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	5000	<2.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	25000	<1	<1	<1	<1	<1
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	12500	<1 --	<1 --	<1 --	<1 --	<1 --
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	100000	**220** ± 40	**150** ± 40	**320** ± 60	**100** ± 30	<40 --
EP035G: Total Phenol by Discrete Analyser										
Phenols (Total)	EP035SF	1	mg/kg	----	425000	<1	<1	<1	<1	<1
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	50	<5.00	<5.00	<5.00	<5.00	<5.00
EP070: Total Petroleum Hydrocarbons - Speciation										

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 3 - Table 4 Concentration limit (CL3) values for waste classification

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time*	**BH01_0-0.5** 28-Jul-2022 15:00	**BH01_2.5-3.0** 28-Jul-2022 15:00	**BH02_0-0.1** 28-Jul-2022 15:00	**BH02_2.5-3.0** 28-Jul-2022 15:00	**BH03_0.5-1.0** 28-Jul-2022 15:00
							EP2209615-001 MU	**EP2209615-002** MU	**EP2209615-003** MU	**EP2209615-004** MU	**EP2209615-005** MU
EP070: Total Petroleum Hydrocarbons - Speciation - Continued											
Aliphatic C16-C35	EP070	100	mg/kg	----	280000		<100	<100	<100	<100	<100
Aromatic C16-C35	EP070	90	mg/kg	----	4500		<90	<90	<90	<90	<90
EP074A: Monocyclic Aromatic Hydrocarbons											
Styrene	EP074	0.5	mg/kg	----	1080		<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	50		<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	1000		<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP080	10	mg/kg	----	28000		<10	<10	<10	<10	<10
EP080: BTEXN											
Benzene	EP080	0.2	mg/kg	----	180		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	EP080	0.5	mg/kg	----	5180		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	EP080	0.5	mg/kg	----	10800		<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes	EP080	0.5	mg/kg	----	18000		<0.5	<0.5	<0.5	<0.5	<0.5
EP202A: Phenoxyacetic Acid Herbicides by LCMS											
2.4-D	EP202	0.02	mg/kg	----	1440		<0.02	<0.02	<0.02	<0.02	<0.02

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class I - Table 3 Contaminant threshold (CT1) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time* BH01_0-0.5 28-Jul-2022 15:00 EP2209615-001 MU	BH01_2.5-3.0 28-Jul-2022 15:00 EP2209615-002 MU	BH02_0-0.1 28-Jul-2022 15:00 EP2209615-003 MU	BH02_2.5-3.0 28-Jul-2022 15:00 EP2209615-004 MU	BH03_0.5-1.0 28-Jul-2022 15:00 EP2209615-005 MU
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	50000	**670** ± 90	**660** ± 90	**1390** ± 190	**740** ± 100	**880** ± 120
Arsenic	EG005T	5	mg/kg	----	14	<5 --	<5 --	<5 --	<5 --	<5 --
Barium	EG005T	10	mg/kg	----	50000	**30** ± 2	<10 --	<10 --	<10 --	<10 --
Beryllium	EG005T	1	mg/kg	----	2	<1	<1	<1	<1	<1
Boron	EG005T	50	mg/kg	----	50000	<50 --	<50 --	<50 --	<50 --	<50 --
Cobalt	EG005T	2	mg/kg	----	50000	<2 --	<2 --	<2 --	<2 --	<2 --
Copper	EG005T	5	mg/kg	----	50000	<5 --	<5 --	<5 --	<5 --	**5** ± 0.5
Manganese	EG005T	5	mg/kg	----	50000	**43** ± 6	**7** ± 1	**20** ± 3	**8** ± 1	**21** ± 3
Molybdenum	EG005T	2	mg/kg	----	10	<2	<2	<2	<2	<2
Nickel	EG005T	2	mg/kg	----	4	<2 --	<2 --	<2 --	<2 --	<2 --
Silver	EG005T	2	mg/kg	----	20	<2	<2	<2	<2	<2
Vanadium	EG005T	5	mg/kg	----	50000	<5 --	<5 --	**6** ± 0.6	<5 --	<5 --
Zinc	EG005T	5	mg/kg	----	50000	**30** ± 3	<5 --	**13** ± 1	<5 --	<5 --
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	0.4	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	EG020T	0.1	mg/kg	----	2	**13.6**	**1.8**	**9.2**	**0.9**	**1.2**
Selenium	EG020T	1	mg/kg	----	2	<1	<1	<1	<1	<1
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	0.2	<0.1 --	<0.1 --	<0.1 --	<0.1 --	<0.1 --
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	10	<2.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	16	<1	<1	<1	<1	<1
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	7	<1 --	<1 --	<1 --	<1 --	<1 --
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	300	**220** ± 40	**150** ± 40	**320** ± 60	**100** ± 30	<40 --
EP035G: Total Phenol by Discrete Analyser										
Phenols (Total)	EP035SF	1	mg/kg	----	28.8	<1	<1	<1	<1	<1
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	50	<5.00	<5.00	<5.00	<5.00	<5.00

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class I - Table 3 Contaminant threshold (CT1) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	**BH01_0-0.5** 28-Jul-2022 15:00 **EP2209615-001** MU	**BH01_2.5-3.0** 28-Jul-2022 15:00 **EP2209615-002** MU	**BH02_0-0.1** 28-Jul-2022 15:00 **EP2209615-003** MU	**BH02_2.5-3.0** 28-Jul-2022 15:00 **EP2209615-004** MU	**BH03_0.5-1.0** 28-Jul-2022 15:00 **EP2209615-005** MU
EP070: Total Petroleum Hydrocarbons - Speciation										
Aliphatic C16-C35	EP070	100	mg/kg	----	28000	<100	<100	<100	<100	<100
Aromatic C16-C35	EP070	90	mg/kg	----	450	<90	<90	<90	<90	<90
EP074A: Monocyclic Aromatic Hydrocarbons										
Styrene	EP074	0.5	mg/kg	----	6	<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	100	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP080	10	mg/kg	----	2800	<10	<10	<10	<10	<10
EP080: BTEXN										
Benzene	EP080	0.2	mg/kg	----	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	EP080	0.5	mg/kg	----	160	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	EP080	0.5	mg/kg	----	60	<0.5	<0.5	<0.5	<0.5	<0.5
EP202A: Phenoxyacetic Acid Herbicides by LCMS										
2.4-D	EP202	0.02	mg/kg	----	0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class II - Table 3 Contaminant threshold (CT2) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	**BH01_0-0.5** 28-Jul-2022 15:00 **EP2209615-001** MU	**BH01_2.5-3.0** 28-Jul-2022 15:00 **EP2209615-002** MU	**BH02_0-0.1** 28-Jul-2022 15:00 **EP2209615-003** MU	**BH02_2.5-3.0** 28-Jul-2022 15:00 **EP2209615-004** MU	**BH03_0.5-1.0** 28-Jul-2022 15:00 **EP2209615-005** MU
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	50000	**670** ± 90	**660** ± 90	**1390** ± 190	**740** ± 100	**880** ± 120
Arsenic	EG005T	5	mg/kg	----	14	<5 --	<5 --	<5 --	<5 --	<5 --
Barium	EG005T	10	mg/kg	----	50000	**30** ± 2	<10 --	<10 --	<10 --	<10 --
Beryllium	EG005T	1	mg/kg	----	2	<1	<1	<1	<1	<1
Boron	EG005T	50	mg/kg	----	50000	<50 --	<50 --	<50 --	<50 --	<50 --
Cobalt	EG005T	2	mg/kg	----	50000	<2 --	<2 --	<2 --	<2 --	<2 --
Copper	EG005T	5	mg/kg	----	50000	<5 --	<5 --	<5 --	<5 --	**5** ± 0.5
Manganese	EG005T	5	mg/kg	----	50000	**43** ± 6	**7** ± 1	**20** ± 3	**8** ± 1	**21** ± 3
Molybdenum	EG005T	2	mg/kg	----	10	<2	<2	<2	<2	<2
Nickel	EG005T	2	mg/kg	----	4	<2 --	<2 --	<2 --	<2 --	<2 --
Silver	EG005T	2	mg/kg	----	20	<2	<2	<2	<2	<2
Vanadium	EG005T	5	mg/kg	----	50000	<5 --	<5 --	**6** ± 0.6	<5 --	<5 --
Zinc	EG005T	5	mg/kg	----	50000	**30** ± 3	<5 --	**13** ± 1	<5 --	<5 --
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	0.4	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	EG020T	0.1	mg/kg	----	2	**13.6**	**1.8**	**9.2**	**0.9**	**1.2**
Selenium	EG020T	1	mg/kg	----	2	<1	<1	<1	<1	<1
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	0.2	<0.1 --	<0.1 --	<0.1 --	<0.1 --	<0.1 --
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	10	<2.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	16	<1	<1	<1	<1	<1
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	7	<1 --	<1 --	<1 --	<1 --	<1 --
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	300	**220** ± 40	**150** ± 40	**320** ± 60	**100** ± 30	<40 --
EP035G: Total Phenol by Discrete Analyser										
Phenols (Total)	EP035SF	1	mg/kg	----	28.8	<1	<1	<1	<1	<1
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	50	<5.00	<5.00	<5.00	<5.00	<5.00

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class II - Table 3 Contaminant threshold (CT2) values for waste not requiring leachate

Sub-Matrix: **SOIL**

				Sample ID	Guideline	Guideline	BH01_0-0.5	BH01_2.5-3.0	BH02_0-0.1	BH02_2.5-3.0	BH03_0.5-1.0
				Sampling date/time			28-Jul-2022 15:00	28-Jul-2022 15:00	28-Jul-2022 15:00	28-Jul-2022 15:00	28-Jul-2022 15:00
Compound	*Method*	*LOR*	*Unit*		Lower Limit	Upper Limit	EP2209615-001 MU	EP2209615-002 MU	EP2209615-003 MU	EP2209615-004 MU	EP2209615-005 MU
EP070: Total Petroleum Hydrocarbons - Speciation											
Aliphatic C16-C35	EP070	100	mg/kg		----	28000	<100	<100	<100	<100	<100
Aromatic C16-C35	EP070	90	mg/kg		----	450	<90	<90	<90	<90	<90
EP074A: Monocyclic Aromatic Hydrocarbons											
Styrene	EP074	0.5	mg/kg		----	6	<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg		----	5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg		----	100	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP080	10	mg/kg		----	2800	<10	<10	<10	<10	<10
EP080: BTEXN											
Benzene	EP080	0.2	mg/kg		----	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	EP080	0.5	mg/kg		----	160	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	EP080	0.5	mg/kg		----	60	<0.5	<0.5	<0.5	<0.5	<0.5
EP202A: Phenoxyacetic Acid Herbicides by LCMS											
2.4-D	EP202	0.02	mg/kg		----	0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class III - Table 3 Contaminant threshold (CT3) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time* BH01_0-0.5 28-Jul-2022 15:00 EP2209615-001 MU	BH01_2.5-3.0 28-Jul-2022 15:00 EP2209615-002 MU	BH02_0-0.1 28-Jul-2022 15:00 EP2209615-003 MU	BH02_2.5-3.0 28-Jul-2022 15:00 EP2209615-004 MU	BH03_0.5-1.0 28-Jul-2022 15:00 EP2209615-005 MU
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	100000	**670** ± 90	**660** ± 90	**1390** ± 190	**740** ± 100	**880** ± 120
Arsenic	EG005T	5	mg/kg	----	140	<5 --	<5 --	<5 --	<5 --	<5 --
Barium	EG005T	10	mg/kg	----	100000	**30** ± 2	<10 --	<10 --	<10 --	<10 --
Beryllium	EG005T	1	mg/kg	----	20	<1	<1	<1	<1	<1
Boron	EG005T	50	mg/kg	----	100000	<50 --	<50 --	<50 --	<50 --	<50 --
Cobalt	EG005T	2	mg/kg	----	100000	<2 --	<2 --	<2 --	<2 --	<2 --
Copper	EG005T	5	mg/kg	----	100000	<5 --	<5 --	<5 --	<5 --	**5** ± 0.5
Manganese	EG005T	5	mg/kg	----	100000	**43** ± 6	**7** ± 1	**20** ± 3	**8** ± 1	**21** ± 3
Molybdenum	EG005T	2	mg/kg	----	100	<2	<2	<2	<2	<2
Nickel	EG005T	2	mg/kg	----	40	<2 --	<2 --	<2 --	<2 --	<2 --
Silver	EG005T	2	mg/kg	----	200	<2	<2	<2	<2	<2
Vanadium	EG005T	5	mg/kg	----	100000	<5 --	<5 --	**6** ± 0.6	<5 --	<5 --
Zinc	EG005T	5	mg/kg	----	100000	**30** ± 3	<5 --	**13** ± 1	<5 --	<5 --
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	4	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	EG020T	0.1	mg/kg	----	20	**13.6**	**1.8**	**9.2**	**0.9**	**1.2**
Selenium	EG020T	1	mg/kg	----	20	<1	<1	<1	<1	<1
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	2	<0.1 --	<0.1 --	<0.1 --	<0.1 --	<0.1 --
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	100	<2.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	160	<1	<1	<1	<1	<1
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	70	<1 --	<1 --	<1 --	<1 --	<1 --
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	3000	**220** ± 40	**150** ± 40	**320** ± 60	**100** ± 30	<40 --
EP035G: Total Phenol by Discrete Analyser										
Phenols (Total)	EP035SF	1	mg/kg	----	288	<1	<1	<1	<1	<1
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	50	<5.00	<5.00	<5.00	<5.00	<5.00

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class III - Table 3 Contaminant threshold (CT3) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	**BH01_0-0.5** 28-Jul-2022 15:00 **EP2209615-001** MU	**BH01_2.5-3.0** 28-Jul-2022 15:00 **EP2209615-002** MU	**BH02_0-0.1** 28-Jul-2022 15:00 **EP2209615-003** MU	**BH02_2.5-3.0** 28-Jul-2022 15:00 **EP2209615-004** MU	**BH03_0.5-1.0** 28-Jul-2022 15:00 **EP2209615-005** MU
EP070: Total Petroleum Hydrocarbons - Speciation										
Aliphatic C16-C35	EP070	100	mg/kg	----	280000	<100	<100	<100	<100	<100
Aromatic C16-C35	EP070	90	mg/kg	----	4500	<90	<90	<90	<90	<90
EP074A: Monocyclic Aromatic Hydrocarbons										
Styrene	EP074	0.5	mg/kg	----	60	<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	50	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	1000	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP080	10	mg/kg	----	28000	<10	<10	<10	<10	<10
EP080: BTEXN										
Benzene	EP080	0.2	mg/kg	----	2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	EP080	0.5	mg/kg	----	1600	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	EP080	0.5	mg/kg	----	600	<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes	EP080	0.5	mg/kg	----	1200	<0.5	<0.5	<0.5	<0.5	<0.5
EP202A: Phenoxyacetic Acid Herbicides by LCMS										
2.4-D	EP202	0.02	mg/kg	----	0.2	<0.02	<0.02	<0.02	<0.02	<0.02

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class IV - Table 3 Contaminant threshold (CT4) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	**BH01_0-0.5** 28-Jul-2022 15:00 **EP2209615-001** MU	**BH01_2.5-3.0** 28-Jul-2022 15:00 **EP2209615-002** MU	**BH02_0-0.1** 28-Jul-2022 15:00 **EP2209615-003** MU	**BH02_2.5-3.0** 28-Jul-2022 15:00 **EP2209615-004** MU	**BH03_0.5-1.0** 28-Jul-2022 15:00 **EP2209615-005** MU
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	200000	**670** ± 90	**660** ± 90	**1390** ± 190	**740** ± 100	**880** ± 120
Arsenic	EG005T	5	mg/kg	----	1400	<5 --	<5 --	<5 --	<5 --	<5 --
Barium	EG005T	10	mg/kg	----	200000	**30** ± 2	<10 --	<10 --	<10 --	<10 --
Beryllium	EG005T	1	mg/kg	----	200	<1	<1	<1	<1	<1
Boron	EG005T	50	mg/kg	----	200000	<50 --	<50 --	<50 --	<50 --	<50 --
Cobalt	EG005T	2	mg/kg	----	200000	<2 --	<2 --	<2 --	<2 --	<2 --
Copper	EG005T	5	mg/kg	----	200000	<5 --	<5 --	<5 --	<5 --	**5** ± 0.5
Manganese	EG005T	5	mg/kg	----	200000	**43** ± 6	**7** ± 1	**20** ± 3	**8** ± 1	**21** ± 3
Molybdenum	EG005T	2	mg/kg	----	1000	<2	<2	<2	<2	<2
Nickel	EG005T	2	mg/kg	----	400	<2 --	<2 --	<2 --	<2 --	<2 --
Silver	EG005T	2	mg/kg	----	2000	<2	<2	<2	<2	<2
Vanadium	EG005T	5	mg/kg	----	200000	<5 --	<5 --	**6** ± 0.6	<5 --	<5 --
Zinc	EG005T	5	mg/kg	----	200000	**30** ± 3	<5 --	**13** ± 1	<5 --	<5 --
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	40	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	EG020T	0.1	mg/kg	----	200	**13.6**	**1.8**	**9.2**	**0.9**	**1.2**
Selenium	EG020T	1	mg/kg	----	200	<1	<1	<1	<1	<1
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	20	<0.1 --	<0.1 --	<0.1 --	<0.1 --	<0.1 --
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	1000	<2.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	1600	<1	<1	<1	<1	<1
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	700	<1 --	<1 --	<1 --	<1 --	<1 --
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	30000	**220** ± 40	**150** ± 40	**320** ± 60	**100** ± 30	<40 --
EP035G: Total Phenol by Discrete Analyser										
Phenols (Total)	EP035SF	1	mg/kg	----	2880	<1	<1	<1	<1	<1
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	50	<5.00	<5.00	<5.00	<5.00	<5.00

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class IV - Table 3 Contaminant threshold (CT4) values for waste not requiring leachate

Sub-Matrix: **SOIL**

				Sample ID	Guideline	Guideline	BH01_0-0.5	BH01_2.5-3.0	BH02_0-0.1	BH02_2.5-3.0	BH03_0.5-1.0
				Sampling date/time			28-Jul-2022 15:00	28-Jul-2022 15:00	28-Jul-2022 15:00	28-Jul-2022 15:00	28-Jul-2022 15:00
Compound	*Method*	*LOR*	*Unit*		Lower Limit	Upper Limit	EP2209615-001 MU	EP2209615-002 MU	EP2209615-003 MU	EP2209615-004 MU	EP2209615-005 MU
EP070: Total Petroleum Hydrocarbons - Speciation											
Aromatic C16-C35	EP070	90	mg/kg		----	18000	<90	<90	<90	<90	<90
EP074A: Monocyclic Aromatic Hydrocarbons											
Styrene	EP074	0.5	mg/kg		----	600	<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg		----	200	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg		----	4000	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP080	10	mg/kg		----	112000	<10	<10	<10	<10	<10
EP080: BTEXN											
Benzene	EP080	0.2	mg/kg		----	20	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	EP080	0.5	mg/kg		----	16000	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	EP080	0.5	mg/kg		----	6000	<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes	EP080	0.5	mg/kg		----	12000	<0.5	<0.5	<0.5	<0.5	<0.5
EP202A: Phenoxyacetic Acid Herbicides by LCMS											
2.4-D	EP202	0.02	mg/kg		----	2	<0.02	<0.02	<0.02	<0.02	<0.02

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (As amended December 2019): Class 4 - Table 4 Concentration limit (CL4) values for waste classification

Sub-Matrix: **SOIL**

				Sample ID		**BH01_0-0.5**	**BH01_2.5-3.0**	**BH02_0-0.1**	**BH02_2.5-3.0**	**BH03_0.5-1.0**
				Sampling date/time	Guideline	28-Jul-2022 15:00	28-Jul-2022 15:00	28-Jul-2022 15:00	28-Jul-2022 15:00	28-Jul-2022 15:00
Compound	*Method*	*LOR*	*Unit*		Lower Limit	**EP2209615-001** MU	**EP2209615-002** MU	**EP2209615-003** MU	**EP2209615-004** MU	**EP2209615-005** MU
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	200000	**670** ± 90	**660** ± 90	**1390** ± 190	**740** ± 100	**880** ± 120
Arsenic	EG005T	5	mg/kg	----	20000	<5 --	<5 --	<5 --	<5 --	<5 --
Barium	EG005T	10	mg/kg	----	200000	**30** ± 2	<10 --	<10 --	<10 --	<10 --
Beryllium	EG005T	1	mg/kg	----	4000	<1	<1	<1	<1	<1
Boron	EG005T	50	mg/kg	----	200000	<50 --	<50 --	<50 --	<50 --	<50 --
Cobalt	EG005T	2	mg/kg	----	200000	<2 --	<2 --	<2 --	<2 --	<2 --
Copper	EG005T	5	mg/kg	----	200000	<5 --	<5 --	<5 --	<5 --	**5** ± 0.5
Manganese	EG005T	5	mg/kg	----	200000	**43** ± 6	**7** ± 1	**20** ± 3	**8** ± 1	**21** ± 3
Molybdenum	EG005T	2	mg/kg	----	40000	<2	<2	<2	<2	<2
Nickel	EG005T	2	mg/kg	----	120000	<2 --	<2 --	<2 --	<2 --	<2 --
Silver	EG005T	2	mg/kg	----	7200	<2	<2	<2	<2	<2
Vanadium	EG005T	5	mg/kg	----	200000	<5 --	<5 --	**6** ± 0.6	<5 --	<5 --
Zinc	EG005T	5	mg/kg	----	200000	**30** ± 3	<5 --	**13** ± 1	<5 --	<5 --
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	4000	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	EG020T	0.1	mg/kg	----	60000	**13.6**	**1.8**	**9.2**	**0.9**	**1.2**
Selenium	EG020T	1	mg/kg	----	2000	<1	<1	<1	<1	<1
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	3000	<0.1 --	<0.1 --	<0.1 --	<0.1 --	<0.1 --
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	2000	<2.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	100000	<1	<1	<1	<1	<1
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	50000	<1 --	<1 --	<1 --	<1 --	<1 --
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	400000	**220** ± 40	**150** ± 40	**320** ± 60	**100** ± 30	<40 --
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	50	<5.00	<5.00	<5.00	<5.00	<5.00
EP070: Total Petroleum Hydrocarbons - Speciation										
Aromatic C16-C35	EP070	90	mg/kg	----	18000	<90	<90	<90	<90	<90
EP074A: Monocyclic Aromatic Hydrocarbons										

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (As amended December 2019): Class 4 - Table 4 Concentration limit (CL4) values for waste classification

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	**BH01_0-0.5** 28-Jul-2022 15:00 **EP2209615-001** MU	**BH01_2.5-3.0** 28-Jul-2022 15:00 **EP2209615-002** MU	**BH02_0-0.1** 28-Jul-2022 15:00 **EP2209615-003** MU	**BH02_2.5-3.0** 28-Jul-2022 15:00 **EP2209615-004** MU	**BH03_0.5-1.0** 28-Jul-2022 15:00 **EP2209615-005** MU
Sample ID										
Sampling date/time										
EP074A: Monocyclic Aromatic Hydrocarbons - Continued										
Styrene	EP074	0.5	mg/kg	----	4320	<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	200	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	4000	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP080	10	mg/kg	----	112000	<10	<10	<10	<10	<10
EP080: BTEXN										
Benzene	EP080	0.2	mg/kg	----	720	<0.2	<0.2	<0.2	<0.2	<0.2
EP202A: Phenoxyacetic Acid Herbicides by LCMS										
2.4-D	EP202	0.02	mg/kg	----	5760	<0.02	<0.02	<0.02	<0.02	<0.02

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 1 - Table 4 Concentration limit (CL1) values for waste classification

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time* BH03_2.0-2.5 28-Jul-2022 15:00 EP2209615-006	MU	BH04_0-0.5 28-Jul-2022 15:00 EP2209615-007	MU	BH04_2.5-3.0 28-Jul-2022 15:00 EP2209615-008	MU	BH05_0-0.5 29-Jul-2022 15:00 EP2209615-009	MU	BH06_0.5-1.0 29-Jul-2022 15:00 EP2209615-010	MU
EG005(ED093)T: Total Metals by ICP-AES															
Aluminium	EG005T	50	mg/kg	----	50000	**760**	± 100	**3740**	± 520	**3710**	± 510	**3650**	± 500	**4040**	± 560
Arsenic	EG005T	5	mg/kg	----	500	<5	--	<5	--	<5	--	<5	--	<5	--
Barium	EG005T	10	mg/kg	----	50000	<10	--	**30**	± 3	**30**	± 2	**20**	± 2	**20**	± 2
Beryllium	EG005T	1	mg/kg	----	100	<1		<1		<1		<1		<1	
Boron	EG005T	50	mg/kg	----	50000	<50	--	<50	--	<50	--	<50	--	<50	--
Cobalt	EG005T	2	mg/kg	----	50000	<2	--	**3**	± 0.3	**3**	± 0.3	**3**	± 0.3	**3**	± 0.3
Copper	EG005T	5	mg/kg	----	50000	<5	--	<5	--	<5	--	<5	--	<5	--
Manganese	EG005T	5	mg/kg	----	50000	**11**	± 2	**182**	± 28	**166**	± 25	**128**	± 20	**125**	± 19
Molybdenum	EG005T	2	mg/kg	----	1000	<2		<2		<2		<2		<2	
Nickel	EG005T	2	mg/kg	----	3000	<2	--	**3**	± 0.4	**4**	± 0.4	**3**	± 0.3	**3**	± 0.3
Silver	EG005T	2	mg/kg	----	180	<2		<2		<2		<2		<2	
Vanadium	EG005T	5	mg/kg	----	50000	<5	--	**17**	± 2	**18**	± 2	**16**	± 1	**17**	± 1
Zinc	EG005T	5	mg/kg	----	50000	<5	--	**7**	± 0.7	**7**	± 0.8	<5	--	<5	--
EG020T: Total Metals by ICP-MS															
Cadmium	EG020T	0.1	mg/kg	----	100	<0.1		<0.1		<0.1		<0.1		<0.1	
Lead	EG020T	0.1	mg/kg	----	1500	**1.5**		**3.8**		**3.9**		**3.4**		**3.6**	
Selenium	EG020T	1	mg/kg	----	50	<1		<1		<1		<1		<1	
EG035T: Total Recoverable Mercury by FIMS															
Mercury	EG035T	0.1	mg/kg	----	75	<0.1	--	<0.1	--	<0.1	--	<0.1	--	<0.1	--
EG048: Hexavalent Chromium (Alkaline Digest)															
Hexavalent Chromium	EG048G	0.5	mg/kg	----	500	<0.5		<0.5		<0.5		<0.5		<0.5	
EK026SF: Total CN by Segmented Flow Analyser															
Total Cyanide	EK026SF	1	mg/kg	----	2500	<1		<1		<1		<1		<1	
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser															
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	1250	<1	--	<1	--	<1	--	<1	--	<1	--
EK040T: Fluoride Total															
Fluoride	EK040T	40	mg/kg	----	10000	<40	--	**40**	± 30	**50**	± 30	**70**	± 30	**60**	± 30
EP035G: Total Phenol by Discrete Analyser															
Phenols (Total)	EP035SF	1	mg/kg	----	42500	<1		<1		<1		<1		<1	
EP066: Polychlorinated Biphenyls (PCB)															
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1		<0.1		<0.1		<0.1		<0.1	
EP068A: Organochlorine Pesticides (OC)															
Total OCP	EP068	5.00	mg/kg	----	50	<5.00		<5.00		<5.00		<5.00		<5.00	
EP070: Total Petroleum Hydrocarbons - Speciation															

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 1 - Table 4 Concentration limit (CL1) values for waste classification

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time*	**BH03_2.0-2.5** 28-Jul-2022 15:00	**BH04_0-0.5** 28-Jul-2022 15:00	**BH04_2.5-3.0** 28-Jul-2022 15:00	**BH05_0-0.5** 29-Jul-2022 15:00	**BH06_0.5-1.0** 29-Jul-2022 15:00
							EP2209615-006 MU	**EP2209615-007** MU	**EP2209615-008** MU	**EP2209615-009** MU	**EP2209615-010** MU
EP070: Total Petroleum Hydrocarbons - Speciation - Continued											
Aliphatic C16-C35	EP070	100	mg/kg	----	28000		<100	<100	<100	<100	<100
Aromatic C16-C35	EP070	90	mg/kg	----	450		<90	<90	<90	<90	<90
EP074A: Monocyclic Aromatic Hydrocarbons											
Styrene	EP074	0.5	mg/kg	----	108		<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	5		<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	100		<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP080	10	mg/kg	----	2800		<10	<10	<10	<10	<10
EP080: BTEXN											
Benzene	EP080	0.2	mg/kg	----	18		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	EP080	0.5	mg/kg	----	518		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	EP080	0.5	mg/kg	----	1080		<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes	EP080	0.5	mg/kg	----	1800		<0.5	<0.5	<0.5	<0.5	<0.5
EP202A: Phenoxyacetic Acid Herbicides by LCMS											
2.4-D	EP202	0.02	mg/kg	----	360		<0.02	<0.02	<0.02	<0.02	<0.02

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 2 - Table 4 Concentration limit (CL2) values for waste classification

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time* BH03_2.0-2.5 28-Jul-2022 15:00 EP2209615-006 MU	BH04_0-0.5 28-Jul-2022 15:00 EP2209615-007 MU	BH04_2.5-3.0 28-Jul-2022 15:00 EP2209615-008 MU	BH05_0-0.5 29-Jul-2022 15:00 EP2209615-009 MU	BH06_0.5-1.0 29-Jul-2022 15:00 EP2209615-010 MU
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	50000	**760** ± 100	**3740** ± 520	**3710** ± 510	**3650** ± 500	**4040** ± 560
Arsenic	EG005T	5	mg/kg	----	500	<5 --	<5 --	<5 --	<5 --	<5 --
Barium	EG005T	10	mg/kg	----	50000	<10 --	**30** ± 3	**30** ± 2	**20** ± 2	**20** ± 2
Beryllium	EG005T	1	mg/kg	----	100	<1	<1	<1	<1	<1
Boron	EG005T	50	mg/kg	----	50000	<50 --	<50 --	<50 --	<50 --	<50 --
Cobalt	EG005T	2	mg/kg	----	50000	<2 --	**3** ± 0.3	**3** ± 0.3	**3** ± 0.3	**3** ± 0.3
Copper	EG005T	5	mg/kg	----	50000	<5 --	<5 --	<5 --	<5 --	<5 --
Manganese	EG005T	5	mg/kg	----	50000	**11** ± 2	**182** ± 28	**166** ± 25	**128** ± 20	**125** ± 19
Molybdenum	EG005T	2	mg/kg	----	1000	<2	<2	<2	<2	<2
Nickel	EG005T	2	mg/kg	----	3000	<2 --	**3** ± 0.4	**4** ± 0.4	**3** ± 0.3	**3** ± 0.3
Silver	EG005T	2	mg/kg	----	180	<2	<2	<2	<2	<2
Vanadium	EG005T	5	mg/kg	----	50000	<5 --	**17** ± 2	**18** ± 2	**16** ± 1	**17** ± 1
Zinc	EG005T	5	mg/kg	----	50000	<5 --	**7** ± 0.7	**7** ± 0.8	<5 --	<5 --
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	100	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	EG020T	0.1	mg/kg	----	1500	**1.5**	**3.8**	**3.9**	**3.4**	**3.6**
Selenium	EG020T	1	mg/kg	----	50	<1	<1	<1	<1	<1
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	75	<0.1 --	<0.1 --	<0.1 --	<0.1 --	<0.1 --
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	500	<0.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	2500	<1	<1	<1	<1	<1
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	1250	<1 --	<1 --	<1 --	<1 --	<1 --
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	10000	<40 --	**40** ± 30	**50** ± 30	**70** ± 30	**60** ± 30
EP035G: Total Phenol by Discrete Analyser										
Phenols (Total)	EP035SF	1	mg/kg	----	42500	<1	<1	<1	<1	<1
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	50	<5.00	<5.00	<5.00	<5.00	<5.00
EP070: Total Petroleum Hydrocarbons - Speciation										

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 2 - Table 4 Concentration limit (CL2) values for waste classification

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time*	**BH03_2.0-2.5** 28-Jul-2022 15:00	**BH04_0-0.5** 28-Jul-2022 15:00	**BH04_2.5-3.0** 28-Jul-2022 15:00	**BH05_0-0.5** 29-Jul-2022 15:00	**BH06_0.5-1.0** 29-Jul-2022 15:00
							EP2209615-006 MU	**EP2209615-007** MU	**EP2209615-008** MU	**EP2209615-009** MU	**EP2209615-010** MU
EP070: Total Petroleum Hydrocarbons - Speciation - Continued											
Aliphatic C16-C35	EP070	100	mg/kg	----	28000		<100	<100	<100	<100	<100
Aromatic C16-C35	EP070	90	mg/kg	----	450		<90	<90	<90	<90	<90
EP074A: Monocyclic Aromatic Hydrocarbons											
Styrene	EP074	0.5	mg/kg	----	108		<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	5		<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	100		<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP080	10	mg/kg	----	2800		<10	<10	<10	<10	<10
EP080: BTEXN											
Benzene	EP080	0.2	mg/kg	----	18		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	EP080	0.5	mg/kg	----	518		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	EP080	0.5	mg/kg	----	1080		<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes	EP080	0.5	mg/kg	----	1800		<0.5	<0.5	<0.5	<0.5	<0.5
EP202A: Phenoxyacetic Acid Herbicides by LCMS											
2.4-D	EP202	0.02	mg/kg	----	360		<0.02	<0.02	<0.02	<0.02	<0.02

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 3 - Table 4 Concentration limit (CL3) values for waste classification

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time* BH03_2.0-2.5 28-Jul-2022 15:00 EP2209615-006	MU	BH04_0-0.5 28-Jul-2022 15:00 EP2209615-007	MU	BH04_2.5-3.0 28-Jul-2022 15:00 EP2209615-008	MU	BH05_0-0.5 29-Jul-2022 15:00 EP2209615-009	MU	BH06_0.5-1.0 29-Jul-2022 15:00 EP2209615-010	MU
EG005(ED093)T: Total Metals by ICP-AES															
Aluminium	EG005T	50	mg/kg	----	100000	**760**	± 100	**3740**	± 520	**3710**	± 510	**3650**	± 500	**4040**	± 560
Arsenic	EG005T	5	mg/kg	----	5000	<5	--	<5	--	<5	--	<5	--	<5	--
Barium	EG005T	10	mg/kg	----	100000	<10	--	**30**	± 3	**30**	± 2	**20**	± 2	**20**	± 2
Beryllium	EG005T	1	mg/kg	----	1000	<1		<1		<1		<1		<1	
Boron	EG005T	50	mg/kg	----	100000	<50	--	<50	--	<50	--	<50	--	<50	--
Cobalt	EG005T	2	mg/kg	----	100000	<2	--	**3**	± 0.3	**3**	± 0.3	**3**	± 0.3	**3**	± 0.3
Copper	EG005T	5	mg/kg	----	100000	<5	--	<5	--	<5	--	<5	--	<5	--
Manganese	EG005T	5	mg/kg	----	100000	**11**	± 2	**182**	± 28	**166**	± 25	**128**	± 20	**125**	± 19
Molybdenum	EG005T	2	mg/kg	----	10000	<2		<2		<2		<2		<2	
Nickel	EG005T	2	mg/kg	----	30000	<2	--	**3**	± 0.4	**4**	± 0.4	**3**	± 0.3	**3**	± 0.3
Silver	EG005T	2	mg/kg	----	1800	<2		<2		<2		<2		<2	
Vanadium	EG005T	5	mg/kg	----	100000	<5	--	**17**	± 2	**18**	± 2	**16**	± 1	**17**	± 1
Zinc	EG005T	5	mg/kg	----	100000	<5	--	**7**	± 0.7	**7**	± 0.8	<5	--	<5	--
EG020T: Total Metals by ICP-MS															
Cadmium	EG020T	0.1	mg/kg	----	1000	<0.1		<0.1		<0.1		<0.1		<0.1	
Lead	EG020T	0.1	mg/kg	----	15000	**1.5**		**3.8**		**3.9**		**3.4**		**3.6**	
Selenium	EG020T	1	mg/kg	----	500	<1		<1		<1		<1		<1	
EG035T: Total Recoverable Mercury by FIMS															
Mercury	EG035T	0.1	mg/kg	----	750	<0.1	--	<0.1	--	<0.1	--	<0.1	--	<0.1	--
EG048: Hexavalent Chromium (Alkaline Digest)															
Hexavalent Chromium	EG048G	0.5	mg/kg	----	5000	<0.5		<0.5		<0.5		<0.5		<0.5	
EK026SF: Total CN by Segmented Flow Analyser															
Total Cyanide	EK026SF	1	mg/kg	----	25000	<1		<1		<1		<1		<1	
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser															
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	12500	<1	--	<1	--	<1	--	<1	--	<1	--
EK040T: Fluoride Total															
Fluoride	EK040T	40	mg/kg	----	100000	<40	--	**40**	± 30	**50**	± 30	**70**	± 30	**60**	± 30
EP035G: Total Phenol by Discrete Analyser															
Phenols (Total)	EP035SF	1	mg/kg	----	425000	<1		<1		<1		<1		<1	
EP066: Polychlorinated Biphenyls (PCB)															
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1		<0.1		<0.1		<0.1		<0.1	
EP068A: Organochlorine Pesticides (OC)															
Total OCP	EP068	5.00	mg/kg	----	50	<5.00		<5.00		<5.00		<5.00		<5.00	
EP070: Total Petroleum Hydrocarbons - Speciation															

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 3 - Table 4 Concentration limit (CL3) values for waste classification

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time*	**BH03_2.0-2.5** 28-Jul-2022 15:00	**BH04_0-0.5** 28-Jul-2022 15:00	**BH04_2.5-3.0** 28-Jul-2022 15:00	**BH05_0-0.5** 29-Jul-2022 15:00	**BH06_0.5-1.0** 29-Jul-2022 15:00
							EP2209615-006 MU	**EP2209615-007** MU	**EP2209615-008** MU	**EP2209615-009** MU	**EP2209615-010** MU
EP070: Total Petroleum Hydrocarbons - Speciation - Continued											
Aliphatic C16-C35	EP070	100	mg/kg	----	280000		<100	<100	<100	<100	<100
Aromatic C16-C35	EP070	90	mg/kg	----	4500		<90	<90	<90	<90	<90
EP074A: Monocyclic Aromatic Hydrocarbons											
Styrene	EP074	0.5	mg/kg	----	1080		<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	50		<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	1000		<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP080	10	mg/kg	----	28000		<10	<10	<10	<10	<10
EP080: BTEXN											
Benzene	EP080	0.2	mg/kg	----	180		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	EP080	0.5	mg/kg	----	5180		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	EP080	0.5	mg/kg	----	10800		<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes	EP080	0.5	mg/kg	----	18000		<0.5	<0.5	<0.5	<0.5	<0.5
EP202A: Phenoxyacetic Acid Herbicides by LCMS											
2.4-D	EP202	0.02	mg/kg	----	1440		<0.02	<0.02	<0.02	<0.02	<0.02

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class I - Table 3 Contaminant threshold (CT1) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time* BH03_2.0-2.5 28-Jul-2022 15:00 EP2209615-006	MU	BH04_0-0.5 28-Jul-2022 15:00 EP2209615-007	MU	BH04_2.5-3.0 28-Jul-2022 15:00 EP2209615-008	MU	BH05_0-0.5 29-Jul-2022 15:00 EP2209615-009	MU	BH06_0.5-1.0 29-Jul-2022 15:00 EP2209615-010	MU
EG005(ED093)T: Total Metals by ICP-AES															
Aluminium	EG005T	50	mg/kg	----	50000	**760**	± 100	**3740**	± 520	**3710**	± 510	**3650**	± 500	**4040**	± 560
Arsenic	EG005T	5	mg/kg	----	14	<5	--	<5	--	<5	--	<5	--	<5	--
Barium	EG005T	10	mg/kg	----	50000	<10	--	**30**	± 3	**30**	± 2	**20**	± 2	**20**	± 2
Beryllium	EG005T	1	mg/kg	----	2	<1		<1		<1		<1		<1	
Boron	EG005T	50	mg/kg	----	50000	<50	--	<50	--	<50	--	<50	--	<50	--
Cobalt	EG005T	2	mg/kg	----	50000	<2	--	**3**	± 0.3	**3**	± 0.3	**3**	± 0.3	**3**	± 0.3
Copper	EG005T	5	mg/kg	----	50000	<5	--	<5	--	<5	--	<5	--	<5	--
Manganese	EG005T	5	mg/kg	----	50000	**11**	± 2	**182**	± 28	**166**	± 25	**128**	± 20	**125**	± 19
Molybdenum	EG005T	2	mg/kg	----	10	<2		<2		<2		<2		<2	
Nickel	EG005T	2	mg/kg	----	4	<2	--	**3**	± 0.4	**4**	± 0.4	**3**	± 0.3	**3**	± 0.3
Silver	EG005T	2	mg/kg	----	20	<2		<2		<2		<2		<2	
Vanadium	EG005T	5	mg/kg	----	50000	<5	--	**17**	± 2	**18**	± 2	**16**	± 1	**17**	± 1
Zinc	EG005T	5	mg/kg	----	50000	<5	--	**7**	± 0.7	**7**	± 0.8	<5	--	<5	--
EG020T: Total Metals by ICP-MS															
Cadmium	EG020T	0.1	mg/kg	----	0.4	<0.1		<0.1		<0.1		<0.1		<0.1	
Lead	EG020T	0.1	mg/kg	----	2	**1.5**		**3.8**		**3.9**		**3.4**		**3.6**	
Selenium	EG020T	1	mg/kg	----	2	<1		<1		<1		<1		<1	
EG035T: Total Recoverable Mercury by FIMS															
Mercury	EG035T	0.1	mg/kg	----	0.2	<0.1	--	<0.1	--	<0.1	--	<0.1	--	<0.1	--
EG048: Hexavalent Chromium (Alkaline Digest)															
Hexavalent Chromium	EG048G	0.5	mg/kg	----	10	<0.5		<0.5		<0.5		<0.5		<0.5	
EK026SF: Total CN by Segmented Flow Analyser															
Total Cyanide	EK026SF	1	mg/kg	----	16	<1		<1		<1		<1		<1	
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser															
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	7	<1	--	<1	--	<1	--	<1	--	<1	--
EK040T: Fluoride Total															
Fluoride	EK040T	40	mg/kg	----	300	<40	--	**40**	± 30	**50**	± 30	**70**	± 30	**60**	± 30
EP035G: Total Phenol by Discrete Analyser															
Phenols (Total)	EP035SF	1	mg/kg	----	28.8	<1		<1		<1		<1		<1	
EP066: Polychlorinated Biphenyls (PCB)															
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1		<0.1		<0.1		<0.1		<0.1	
EP068A: Organochlorine Pesticides (OC)															
Total OCP	EP068	5.00	mg/kg	----	50	<5.00		<5.00		<5.00		<5.00		<5.00	

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class I - Table 3 Contaminant threshold (CT1) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	**BH03_2.0-2.5** 28-Jul-2022 15:00 **EP2209615-006** MU	**BH04_0-0.5** 28-Jul-2022 15:00 **EP2209615-007** MU	**BH04_2.5-3.0** 28-Jul-2022 15:00 **EP2209615-008** MU	**BH05_0-0.5** 29-Jul-2022 15:00 **EP2209615-009** MU	**BH06_0.5-1.0** 29-Jul-2022 15:00 **EP2209615-010** MU
EP070: Total Petroleum Hydrocarbons - Speciation										
Aliphatic C16-C35	EP070	100	mg/kg	----	28000	<100	<100	<100	<100	<100
Aromatic C16-C35	EP070	90	mg/kg	----	450	<90	<90	<90	<90	<90
EP074A: Monocyclic Aromatic Hydrocarbons										
Styrene	EP074	0.5	mg/kg	----	6	<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	100	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP080	10	mg/kg	----	2800	<10	<10	<10	<10	<10
EP080: BTEXN										
Benzene	EP080	0.2	mg/kg	----	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	EP080	0.5	mg/kg	----	160	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	EP080	0.5	mg/kg	----	60	<0.5	<0.5	<0.5	<0.5	<0.5
EP202A: Phenoxyacetic Acid Herbicides by LCMS										
2.4-D	EP202	0.02	mg/kg	----	0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class II - Table 3 Contaminant threshold (CT2) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time* BH03_2.0-2.5 28-Jul-2022 15:00 EP2209615-006	MU	BH04_0-0.5 28-Jul-2022 15:00 EP2209615-007	MU	BH04_2.5-3.0 28-Jul-2022 15:00 EP2209615-008	MU	BH05_0-0.5 29-Jul-2022 15:00 EP2209615-009	MU	BH06_0.5-1.0 29-Jul-2022 15:00 EP2209615-010	MU
EG005(ED093)T: Total Metals by ICP-AES															
Aluminium	EG005T	50	mg/kg	----	50000	**760**	± 100	**3740**	± 520	**3710**	± 510	**3650**	± 500	**4040**	± 560
Arsenic	EG005T	5	mg/kg	----	14	<5	--	<5	--	<5	--	<5	--	<5	--
Barium	EG005T	10	mg/kg	----	50000	<10	--	**30**	± 3	**30**	± 2	**20**	± 2	**20**	± 2
Beryllium	EG005T	1	mg/kg	----	2	<1		<1		<1		<1		<1	
Boron	EG005T	50	mg/kg	----	50000	<50	--	<50	--	<50	--	<50	--	<50	--
Cobalt	EG005T	2	mg/kg	----	50000	<2	--	**3**	± 0.3	**3**	± 0.3	**3**	± 0.3	**3**	± 0.3
Copper	EG005T	5	mg/kg	----	50000	<5	--	<5	--	<5	--	<5	--	<5	--
Manganese	EG005T	5	mg/kg	----	50000	**11**	± 2	**182**	± 28	**166**	± 25	**128**	± 20	**125**	± 19
Molybdenum	EG005T	2	mg/kg	----	10	<2		<2		<2		<2		<2	
Nickel	EG005T	2	mg/kg	----	4	<2	--	**3**	± 0.4	**4**	± 0.4	**3**	± 0.3	**3**	± 0.3
Silver	EG005T	2	mg/kg	----	20	<2		<2		<2		<2		<2	
Vanadium	EG005T	5	mg/kg	----	50000	<5	--	**17**	± 2	**18**	± 2	**16**	± 1	**17**	± 1
Zinc	EG005T	5	mg/kg	----	50000	<5	--	**7**	± 0.7	**7**	± 0.8	<5	--	<5	--
EG020T: Total Metals by ICP-MS															
Cadmium	EG020T	0.1	mg/kg	----	0.4	<0.1		<0.1		<0.1		<0.1		<0.1	
Lead	EG020T	0.1	mg/kg	----	2	**1.5**		**3.8**		**3.9**		**3.4**		**3.6**	
Selenium	EG020T	1	mg/kg	----	2	<1		<1		<1		<1		<1	
EG035T: Total Recoverable Mercury by FIMS															
Mercury	EG035T	0.1	mg/kg	----	0.2	<0.1	--	<0.1	--	<0.1	--	<0.1	--	<0.1	--
EG048: Hexavalent Chromium (Alkaline Digest)															
Hexavalent Chromium	EG048G	0.5	mg/kg	----	10	<0.5		<0.5		<0.5		<0.5		<0.5	
EK026SF: Total CN by Segmented Flow Analyser															
Total Cyanide	EK026SF	1	mg/kg	----	16	<1		<1		<1		<1		<1	
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser															
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	7	<1	--	<1	--	<1	--	<1	--	<1	--
EK040T: Fluoride Total															
Fluoride	EK040T	40	mg/kg	----	300	<40	--	**40**	± 30	**50**	± 30	**70**	± 30	**60**	± 30
EP035G: Total Phenol by Discrete Analyser															
Phenols (Total)	EP035SF	1	mg/kg	----	28.8	<1		<1		<1		<1		<1	
EP066: Polychlorinated Biphenyls (PCB)															
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1		<0.1		<0.1		<0.1		<0.1	
EP068A: Organochlorine Pesticides (OC)															
Total OCP	EP068	5.00	mg/kg	----	50	<5.00		<5.00		<5.00		<5.00		<5.00	

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class II - Table 3 Contaminant threshold (CT2) values for waste not requiring leachate

Sub-Matrix: **SOIL**

				Sample ID	Guideline	Guideline	BH03_2.0-2.5	BH04_0-0.5	BH04_2.5-3.0	BH05_0-0.5	BH06_0.5-1.0
				Sampling date/time			28-Jul-2022 15:00	28-Jul-2022 15:00	28-Jul-2022 15:00	29-Jul-2022 15:00	29-Jul-2022 15:00
Compound	*Method*	*LOR*	*Unit*		Lower Limit	Upper Limit	EP2209615-006 MU	EP2209615-007 MU	EP2209615-008 MU	EP2209615-009 MU	EP2209615-010 MU
EP070: Total Petroleum Hydrocarbons - Speciation											
Aliphatic C16-C35	EP070	100	mg/kg		----	28000	<100	<100	<100	<100	<100
Aromatic C16-C35	EP070	90	mg/kg		----	450	<90	<90	<90	<90	<90
EP074A: Monocyclic Aromatic Hydrocarbons											
Styrene	EP074	0.5	mg/kg		----	6	<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg		----	5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg		----	100	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP080	10	mg/kg		----	2800	<10	<10	<10	<10	<10
EP080: BTEXN											
Benzene	EP080	0.2	mg/kg		----	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	EP080	0.5	mg/kg		----	160	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	EP080	0.5	mg/kg		----	60	<0.5	<0.5	<0.5	<0.5	<0.5
EP202A: Phenoxyacetic Acid Herbicides by LCMS											
2.4-D	EP202	0.02	mg/kg		----	0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class III - Table 3 Contaminant threshold (CT3) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	**BH03_2.0-2.5** 28-Jul-2022 15:00 **EP2209615-006** MU	**BH04_0-0.5** 28-Jul-2022 15:00 **EP2209615-007** MU	**BH04_2.5-3.0** 28-Jul-2022 15:00 **EP2209615-008** MU	**BH05_0-0.5** 29-Jul-2022 15:00 **EP2209615-009** MU	**BH06_0.5-1.0** 29-Jul-2022 15:00 **EP2209615-010** MU
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	100000	**760** ± 100	**3740** ± 520	**3710** ± 510	**3650** ± 500	**4040** ± 560
Arsenic	EG005T	5	mg/kg	----	140	<5 --	<5 --	<5 --	<5 --	<5 --
Barium	EG005T	10	mg/kg	----	100000	<10 --	**30** ± 3	**30** ± 2	**20** ± 2	**20** ± 2
Beryllium	EG005T	1	mg/kg	----	20	<1	<1	<1	<1	<1
Boron	EG005T	50	mg/kg	----	100000	<50 --	<50 --	<50 --	<50 --	<50 --
Cobalt	EG005T	2	mg/kg	----	100000	<2 --	**3** ± 0.3	**3** ± 0.3	**3** ± 0.3	**3** ± 0.3
Copper	EG005T	5	mg/kg	----	100000	<5 --	<5 --	<5 --	<5 --	<5 --
Manganese	EG005T	5	mg/kg	----	100000	**11** ± 2	**182** ± 28	**166** ± 25	**128** ± 20	**125** ± 19
Molybdenum	EG005T	2	mg/kg	----	100	<2	<2	<2	<2	<2
Nickel	EG005T	2	mg/kg	----	40	<2 --	**3** ± 0.4	**4** ± 0.4	**3** ± 0.3	**3** ± 0.3
Silver	EG005T	2	mg/kg	----	200	<2	<2	<2	<2	<2
Vanadium	EG005T	5	mg/kg	----	100000	<5 --	**17** ± 2	**18** ± 2	**16** ± 1	**17** ± 1
Zinc	EG005T	5	mg/kg	----	100000	<5 --	**7** ± 0.7	**7** ± 0.8	<5 --	<5 --
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	4	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	EG020T	0.1	mg/kg	----	20	**1.5**	**3.8**	**3.9**	**3.4**	**3.6**
Selenium	EG020T	1	mg/kg	----	20	<1	<1	<1	<1	<1
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	2	<0.1 --	<0.1 --	<0.1 --	<0.1 --	<0.1 --
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	100	<0.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	160	<1	<1	<1	<1	<1
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	70	<1 --	<1 --	<1 --	<1 --	<1 --
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	3000	<40 --	**40** ± 30	**50** ± 30	**70** ± 30	**60** ± 30
EP035G: Total Phenol by Discrete Analyser										
Phenols (Total)	EP035SF	1	mg/kg	----	288	<1	<1	<1	<1	<1
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	50	<5.00	<5.00	<5.00	<5.00	<5.00

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class III - Table 3 Contaminant threshold (CT3) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	**BH03_2.0-2.5** 28-Jul-2022 15:00 **EP2209615-006** MU	**BH04_0-0.5** 28-Jul-2022 15:00 **EP2209615-007** MU	**BH04_2.5-3.0** 28-Jul-2022 15:00 **EP2209615-008** MU	**BH05_0-0.5** 29-Jul-2022 15:00 **EP2209615-009** MU	**BH06_0.5-1.0** 29-Jul-2022 15:00 **EP2209615-010** MU
EP070: Total Petroleum Hydrocarbons - Speciation										
Aliphatic C16-C35	EP070	100	mg/kg	----	280000	<100	<100	<100	<100	<100
Aromatic C16-C35	EP070	90	mg/kg	----	4500	<90	<90	<90	<90	<90
EP074A: Monocyclic Aromatic Hydrocarbons										
Styrene	EP074	0.5	mg/kg	----	60	<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	50	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	1000	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP080	10	mg/kg	----	28000	<10	<10	<10	<10	<10
EP080: BTEXN										
Benzene	EP080	0.2	mg/kg	----	2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	EP080	0.5	mg/kg	----	1600	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	EP080	0.5	mg/kg	----	600	<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes	EP080	0.5	mg/kg	----	1200	<0.5	<0.5	<0.5	<0.5	<0.5
EP202A: Phenoxyacetic Acid Herbicides by LCMS										
2.4-D	EP202	0.02	mg/kg	----	0.2	<0.02	<0.02	<0.02	<0.02	<0.02

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class IV - Table 3 Contaminant threshold (CT4) values for waste not requiring leachate

Sub-Matrix: **SOIL**

				Sample ID	Guideline	Guideline	BH03_2.0-2.5	BH04_0-0.5	BH04_2.5-3.0	BH05_0-0.5	BH06_0.5-1.0
				Sampling date/time			28-Jul-2022 15:00	28-Jul-2022 15:00	28-Jul-2022 15:00	29-Jul-2022 15:00	29-Jul-2022 15:00
Compound	*Method*	*LOR*	*Unit*		Lower Limit	Upper Limit	EP2209615-006 MU	EP2209615-007 MU	EP2209615-008 MU	EP2209615-009 MU	EP2209615-010 MU
EG005(ED093)T: Total Metals by ICP-AES											
Aluminium	EG005T	50	mg/kg		----	200000	**760** ± 100	**3740** ± 520	**3710** ± 510	**3650** ± 500	**4040** ± 560
Arsenic	EG005T	5	mg/kg		----	1400	<5 --	<5 --	<5 --	<5 --	<5 --
Barium	EG005T	10	mg/kg		----	200000	<10 --	**30** ± 3	**30** ± 2	**20** ± 2	**20** ± 2
Beryllium	EG005T	1	mg/kg		----	200	<1	<1	<1	<1	<1
Boron	EG005T	50	mg/kg		----	200000	<50 --	<50 --	<50 --	<50 --	<50 --
Cobalt	EG005T	2	mg/kg		----	200000	<2 --	**3** ± 0.3	**3** ± 0.3	**3** ± 0.3	**3** ± 0.3
Copper	EG005T	5	mg/kg		----	200000	<5 --	<5 --	<5 --	<5 --	<5 --
Manganese	EG005T	5	mg/kg		----	200000	**11** ± 2	**182** ± 28	**166** ± 25	**128** ± 20	**125** ± 19
Molybdenum	EG005T	2	mg/kg		----	1000	<2	<2	<2	<2	<2
Nickel	EG005T	2	mg/kg		----	400	<2 --	**3** ± 0.4	**4** ± 0.4	**3** ± 0.3	**3** ± 0.3
Silver	EG005T	2	mg/kg		----	2000	<2	<2	<2	<2	<2
Vanadium	EG005T	5	mg/kg		----	200000	<5 --	**17** ± 2	**18** ± 2	**16** ± 1	**17** ± 1
Zinc	EG005T	5	mg/kg		----	200000	<5 --	**7** ± 0.7	**7** ± 0.8	<5 --	<5 --
EG020T: Total Metals by ICP-MS											
Cadmium	EG020T	0.1	mg/kg		----	40	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	EG020T	0.1	mg/kg		----	200	**1.5**	**3.8**	**3.9**	**3.4**	**3.6**
Selenium	EG020T	1	mg/kg		----	200	<1	<1	<1	<1	<1
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg		----	20	<0.1 --	<0.1 --	<0.1 --	<0.1 --	<0.1 --
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg		----	1000	<0.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser											
Total Cyanide	EK026SF	1	mg/kg		----	1600	<1	<1	<1	<1	<1
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser											
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg		----	700	<1 --	<1 --	<1 --	<1 --	<1 --
EK040T: Fluoride Total											
Fluoride	EK040T	40	mg/kg		----	30000	<40 --	**40** ± 30	**50** ± 30	**70** ± 30	**60** ± 30
EP035G: Total Phenol by Discrete Analyser											
Phenols (Total)	EP035SF	1	mg/kg		----	2880	<1	<1	<1	<1	<1
EP066: Polychlorinated Biphenyls (PCB)											
Total Polychlorinated biphenyls	EP066	0.1	mg/kg		----	50	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)											
Total OCP	EP068	5.00	mg/kg		----	50	<5.00	<5.00	<5.00	<5.00	<5.00

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class IV - Table 3 Contaminant threshold (CT4) values for waste not requiring leachate

Sub-Matrix: **SOIL**

				Sample ID	Guideline	Guideline	BH03_2.0-2.5	BH04_0-0.5	BH04_2.5-3.0	BH05_0-0.5	BH06_0.5-1.0
				Sampling date/time			28-Jul-2022 15:00	28-Jul-2022 15:00	28-Jul-2022 15:00	29-Jul-2022 15:00	29-Jul-2022 15:00
Compound	*Method*	*LOR*	*Unit*		Lower Limit	Upper Limit	EP2209615-006 MU	EP2209615-007 MU	EP2209615-008 MU	EP2209615-009 MU	EP2209615-010 MU
EP070: Total Petroleum Hydrocarbons - Speciation											
Aromatic C16-C35	EP070	90	mg/kg		----	18000	<90	<90	<90	<90	<90
EP074A: Monocyclic Aromatic Hydrocarbons											
Styrene	EP074	0.5	mg/kg		----	600	<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg		----	200	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg		----	4000	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP080	10	mg/kg		----	112000	<10	<10	<10	<10	<10
EP080: BTEXN											
Benzene	EP080	0.2	mg/kg		----	20	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	EP080	0.5	mg/kg		----	16000	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	EP080	0.5	mg/kg		----	6000	<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes	EP080	0.5	mg/kg		----	12000	<0.5	<0.5	<0.5	<0.5	<0.5
EP202A: Phenoxyacetic Acid Herbicides by LCMS											
2.4-D	EP202	0.02	mg/kg		----	2	<0.02	<0.02	<0.02	<0.02	<0.02

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (As amended December 2019): Class 4 - Table 4 Concentration limit (CL4) values for waste classification

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time* BH03_2.0-2.5 28-Jul-2022 15:00 EP2209615-006 MU	BH04_0-0.5 28-Jul-2022 15:00 EP2209615-007 MU	BH04_2.5-3.0 28-Jul-2022 15:00 EP2209615-008 MU	BH05_0-0.5 29-Jul-2022 15:00 EP2209615-009 MU	BH06_0.5-1.0 29-Jul-2022 15:00 EP2209615-010 MU
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	200000	**760** ± 100	**3740** ± 520	**3710** ± 510	**3650** ± 500	**4040** ± 560
Arsenic	EG005T	5	mg/kg	----	20000	<5 --	<5 --	<5 --	<5 --	<5 --
Barium	EG005T	10	mg/kg	----	200000	<10 --	**30** ± 3	**30** ± 2	**20** ± 2	**20** ± 2
Beryllium	EG005T	1	mg/kg	----	4000	<1	<1	<1	<1	<1
Boron	EG005T	50	mg/kg	----	200000	<50 --	<50 --	<50 --	<50 --	<50 --
Cobalt	EG005T	2	mg/kg	----	200000	<2 --	**3** ± 0.3	**3** ± 0.3	**3** ± 0.3	**3** ± 0.3
Copper	EG005T	5	mg/kg	----	200000	<5 --	<5 --	<5 --	<5 --	<5 --
Manganese	EG005T	5	mg/kg	----	200000	**11** ± 2	**182** ± 28	**166** ± 25	**128** ± 20	**125** ± 19
Molybdenum	EG005T	2	mg/kg	----	40000	<2	<2	<2	<2	<2
Nickel	EG005T	2	mg/kg	----	120000	<2 --	**3** ± 0.4	**4** ± 0.4	**3** ± 0.3	**3** ± 0.3
Silver	EG005T	2	mg/kg	----	7200	<2	<2	<2	<2	<2
Vanadium	EG005T	5	mg/kg	----	200000	<5 --	**17** ± 2	**18** ± 2	**16** ± 1	**17** ± 1
Zinc	EG005T	5	mg/kg	----	200000	<5 --	**7** ± 0.7	**7** ± 0.8	<5 --	<5 --
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	4000	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	EG020T	0.1	mg/kg	----	60000	**1.5**	**3.8**	**3.9**	**3.4**	**3.6**
Selenium	EG020T	1	mg/kg	----	2000	<1	<1	<1	<1	<1
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	3000	<0.1 --	<0.1 --	<0.1 --	<0.1 --	<0.1 --
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	2000	<0.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	100000	<1	<1	<1	<1	<1
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	50000	<1 --	<1 --	<1 --	<1 --	<1 --
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	400000	<40 --	**40** ± 30	**50** ± 30	**70** ± 30	**60** ± 30
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	50	<5.00	<5.00	<5.00	<5.00	<5.00
EP070: Total Petroleum Hydrocarbons - Speciation										
Aromatic C16-C35	EP070	90	mg/kg	----	18000	<90	<90	<90	<90	<90
EP074A: Monocyclic Aromatic Hydrocarbons										

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (As amended December 2019): Class 4 - Table 4 Concentration limit (CL4) values for waste classification

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	*Sample ID* / *Sampling date/time* / Guideline Lower Limit	Guideline Upper Limit	**BH03_2.0-2.5** 28-Jul-2022 15:00 **EP2209615-006** MU	**BH04_0-0.5** 28-Jul-2022 15:00 **EP2209615-007** MU	**BH04_2.5-3.0** 28-Jul-2022 15:00 **EP2209615-008** MU	**BH05_0-0.5** 29-Jul-2022 15:00 **EP2209615-009** MU	**BH06_0.5-1.0** 29-Jul-2022 15:00 **EP2209615-010** MU
EP074A: Monocyclic Aromatic Hydrocarbons - Continued										
Styrene	EP074	0.5	mg/kg	----	4320	<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	200	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	4000	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP080	10	mg/kg	----	112000	<10	<10	<10	<10	<10
EP080: BTEXN										
Benzene	EP080	0.2	mg/kg	----	720	<0.2	<0.2	<0.2	<0.2	<0.2
EP202A: Phenoxyacetic Acid Herbicides by LCMS										
2.4-D	EP202	0.02	mg/kg	----	5760	<0.02	<0.02	<0.02	<0.02	<0.02

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 1 - Table 4 Concentration limit (CL1) values for waste classification

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* **BH06_2.5-3.0**	**BH07_0.5-1.0**	**BH07_2.5-3.0**	**MW1_0-0.5**	**MW1_3-3.5**
						Sampling date/time 29-Jul-2022 15:00	29-Jul-2022 08:55	29-Jul-2022 08:55	28-Jul-2022 11:00	28-Jul-2022 11:00
						EP2209615-011 MU	**EP2209615-012** MU	**EP2209615-013** MU	**EP2209615-014** MU	**EP2209615-015** MU
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	50000	**2600** ± 360	**4650** ± 640	**4600** ± 630	**790** ± 110	**2040** ± 280
Arsenic	EG005T	5	mg/kg	----	500	<5 --	**11** ± 1	<5 --	<5 --	<5 --
Barium	EG005T	10	mg/kg	----	50000	**20** ± 1	**30** ± 3	**20** ± 2	**20** ± 2	<10 --
Beryllium	EG005T	1	mg/kg	----	100	<1	<1	<1	<1	<1
Boron	EG005T	50	mg/kg	----	50000	<50 --	<50 --	<50 --	<50 --	<50 --
Cobalt	EG005T	2	mg/kg	----	50000	<2 --	**4** ± 0.4	**3** ± 0.3	<2 --	<2 --
Copper	EG005T	5	mg/kg	----	50000	<5 --	<5 --	<5 --	<5 --	<5 --
Manganese	EG005T	5	mg/kg	----	50000	**97** ± 15	**153** ± 23	**194** ± 30	**38** ± 6	**10** ± 2
Molybdenum	EG005T	2	mg/kg	----	1000	**2**	**2**	<2	<2	<2
Nickel	EG005T	2	mg/kg	----	3000	<2 --	**4** ± 0.4	**3** ± 0.3	<2 --	<2 --
Silver	EG005T	2	mg/kg	----	180	<2	<2	<2	<2	<2
Vanadium	EG005T	5	mg/kg	----	50000	**13** ± 1	**22** ± 2	**14** ± 1	<5 --	**9** ± 0.8
Zinc	EG005T	5	mg/kg	----	50000	<5 --	<5 --	<5 --	**19** ± 2	<5 --
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	100	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	EG020T	0.1	mg/kg	----	1500	**2.5**	**3.9**	**4.2**	**5.8**	**2.4**
Selenium	EG020T	1	mg/kg	----	50	<1	<1	<1	<1	<1
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	75	<0.1 --	<0.1 --	<0.1 --	<0.1 --	<0.1 --
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	500	<0.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	2500	<1	<1	<1	<1	<1
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	1250	<1 --	<1 --	<1 --	<1 --	<1 --
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	10000	<40 --	**50** ± 30	**40** ± 30	**90** ± 30	<40 --
EP035G: Total Phenol by Discrete Analyser										
Phenols (Total)	EP035SF	1	mg/kg	----	42500	<1	<1	<1	<1	<1
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	50	<5.00	<5.00	<5.00	<5.00	<5.00
EP070: Total Petroleum Hydrocarbons - Speciation										

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 1 - Table 4 Concentration limit (CL1) values for waste classification

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time*	**BH06_2.5-3.0** 29-Jul-2022 15:00	**BH07_0.5-1.0** 29-Jul-2022 08:55	**BH07_2.5-3.0** 29-Jul-2022 08:55	**MW1_0-0.5** 28-Jul-2022 11:00	**MW1_3-3.5** 28-Jul-2022 11:00
							EP2209615-011 MU	**EP2209615-012** MU	**EP2209615-013** MU	**EP2209615-014** MU	**EP2209615-015** MU
EP070: Total Petroleum Hydrocarbons - Speciation - Continued											
Aliphatic C16-C35	EP070	100	mg/kg	----	28000		<100	<100	<100	<100	<100
Aromatic C16-C35	EP070	90	mg/kg	----	450		<90	<90	<90	<90	<90
EP074A: Monocyclic Aromatic Hydrocarbons											
Styrene	EP074	0.5	mg/kg	----	108		<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	5		<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	100		<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP080	10	mg/kg	----	2800		<10	<10	<10	<10	<10
EP080: BTEXN											
Benzene	EP080	0.2	mg/kg	----	18		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	EP080	0.5	mg/kg	----	518		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	EP080	0.5	mg/kg	----	1080		<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes	EP080	0.5	mg/kg	----	1800		<0.5	<0.5	<0.5	<0.5	<0.5
EP202A: Phenoxyacetic Acid Herbicides by LCMS											
2.4-D	EP202	0.02	mg/kg	----	360		<0.02	<0.02	<0.02	<0.02	<0.02

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 2 - Table 4 Concentration limit (CL2) values for waste classification

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* **BH06_2.5-3.0**	**BH07_0.5-1.0**	**BH07_2.5-3.0**	**MW1_0-0.5**	**MW1_3-3.5**
						Sampling date/time 29-Jul-2022 15:00	29-Jul-2022 08:55	29-Jul-2022 08:55	28-Jul-2022 11:00	28-Jul-2022 11:00
						EP2209615-011 MU	**EP2209615-012** MU	**EP2209615-013** MU	**EP2209615-014** MU	**EP2209615-015** MU
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	50000	**2600** ± 360	**4650** ± 640	**4600** ± 630	**790** ± 110	**2040** ± 280
Arsenic	EG005T	5	mg/kg	----	500	<5 --	**11** ± 1	<5 --	<5 --	<5 --
Barium	EG005T	10	mg/kg	----	50000	**20** ± 1	**30** ± 3	**20** ± 2	**20** ± 2	<10 --
Beryllium	EG005T	1	mg/kg	----	100	<1	<1	<1	<1	<1
Boron	EG005T	50	mg/kg	----	50000	<50 --	<50 --	<50 --	<50 --	<50 --
Cobalt	EG005T	2	mg/kg	----	50000	<2 --	**4** ± 0.4	**3** ± 0.3	<2 --	<2 --
Copper	EG005T	5	mg/kg	----	50000	<5 --	<5 --	<5 --	<5 --	<5 --
Manganese	EG005T	5	mg/kg	----	50000	**97** ± 15	**153** ± 23	**194** ± 30	**38** ± 6	**10** ± 2
Molybdenum	EG005T	2	mg/kg	----	1000	**2**	**2**	<2	<2	<2
Nickel	EG005T	2	mg/kg	----	3000	<2 --	**4** ± 0.4	**3** ± 0.3	<2 --	<2 --
Silver	EG005T	2	mg/kg	----	180	<2	<2	<2	<2	<2
Vanadium	EG005T	5	mg/kg	----	50000	**13** ± 1	**22** ± 2	**14** ± 1	<5 --	**9** ± 0.8
Zinc	EG005T	5	mg/kg	----	50000	<5 --	<5 --	<5 --	**19** ± 2	<5 --
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	100	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	EG020T	0.1	mg/kg	----	1500	**2.5**	**3.9**	**4.2**	**5.8**	**2.4**
Selenium	EG020T	1	mg/kg	----	50	<1	<1	<1	<1	<1
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	75	<0.1 --	<0.1 --	<0.1 --	<0.1 --	<0.1 --
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	500	<0.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	2500	<1	<1	<1	<1	<1
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	1250	<1 --	<1 --	<1 --	<1 --	<1 --
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	10000	<40 --	**50** ± 30	**40** ± 30	**90** ± 30	<40 --
EP035G: Total Phenol by Discrete Analyser										
Phenols (Total)	EP035SF	1	mg/kg	----	42500	<1	<1	<1	<1	<1
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	50	<5.00	<5.00	<5.00	<5.00	<5.00
EP070: Total Petroleum Hydrocarbons - Speciation										

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 2 - Table 4 Concentration limit (CL2) values for waste classification

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time*	**BH06_2.5-3.0** 29-Jul-2022 15:00	**BH07_0.5-1.0** 29-Jul-2022 08:55	**BH07_2.5-3.0** 29-Jul-2022 08:55	**MW1_0-0.5** 28-Jul-2022 11:00	**MW1_3-3.5** 28-Jul-2022 11:00
							EP2209615-011 MU	**EP2209615-012** MU	**EP2209615-013** MU	**EP2209615-014** MU	**EP2209615-015** MU
EP070: Total Petroleum Hydrocarbons - Speciation - Continued											
Aliphatic C16-C35	EP070	100	mg/kg	----	28000		<100	<100	<100	<100	<100
Aromatic C16-C35	EP070	90	mg/kg	----	450		<90	<90	<90	<90	<90
EP074A: Monocyclic Aromatic Hydrocarbons											
Styrene	EP074	0.5	mg/kg	----	108		<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	5		<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	100		<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP080	10	mg/kg	----	2800		<10	<10	<10	<10	<10
EP080: BTEXN											
Benzene	EP080	0.2	mg/kg	----	18		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	EP080	0.5	mg/kg	----	518		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	EP080	0.5	mg/kg	----	1080		<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes	EP080	0.5	mg/kg	----	1800		<0.5	<0.5	<0.5	<0.5	<0.5
EP202A: Phenoxyacetic Acid Herbicides by LCMS											
2.4-D	EP202	0.02	mg/kg	----	360		<0.02	<0.02	<0.02	<0.02	<0.02

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 3 - Table 4 Concentration limit (CL3) values for waste classification

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* **BH06_2.5-3.0**	**BH07_0.5-1.0**	**BH07_2.5-3.0**	**MW1_0-0.5**	**MW1_3-3.5**
						Sampling date/time 29-Jul-2022 15:00	29-Jul-2022 08:55	29-Jul-2022 08:55	28-Jul-2022 11:00	28-Jul-2022 11:00
						EP2209615-011 MU	**EP2209615-012** MU	**EP2209615-013** MU	**EP2209615-014** MU	**EP2209615-015** MU
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	100000	**2600** ± 360	**4650** ± 640	**4600** ± 630	**790** ± 110	**2040** ± 280
Arsenic	EG005T	5	mg/kg	----	5000	<5 --	**11** ± 1	<5 --	<5 --	<5 --
Barium	EG005T	10	mg/kg	----	100000	**20** ± 1	**30** ± 3	**20** ± 2	**20** ± 2	<10 --
Beryllium	EG005T	1	mg/kg	----	1000	<1	<1	<1	<1	<1
Boron	EG005T	50	mg/kg	----	100000	<50 --	<50 --	<50 --	<50 --	<50 --
Cobalt	EG005T	2	mg/kg	----	100000	<2 --	**4** ± 0.4	**3** ± 0.3	<2 --	<2 --
Copper	EG005T	5	mg/kg	----	100000	<5 --	<5 --	<5 --	<5 --	<5 --
Manganese	EG005T	5	mg/kg	----	100000	**97** ± 15	**153** ± 23	**194** ± 30	**38** ± 6	**10** ± 2
Molybdenum	EG005T	2	mg/kg	----	10000	**2**	**2**	<2	<2	<2
Nickel	EG005T	2	mg/kg	----	30000	<2 --	**4** ± 0.4	**3** ± 0.3	<2 --	<2 --
Silver	EG005T	2	mg/kg	----	1800	<2	<2	<2	<2	<2
Vanadium	EG005T	5	mg/kg	----	100000	**13** ± 1	**22** ± 2	**14** ± 1	<5 --	**9** ± 0.8
Zinc	EG005T	5	mg/kg	----	100000	<5 --	<5 --	<5 --	**19** ± 2	<5 --
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	1000	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	EG020T	0.1	mg/kg	----	15000	**2.5**	**3.9**	**4.2**	**5.8**	**2.4**
Selenium	EG020T	1	mg/kg	----	500	<1	<1	<1	<1	<1
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	750	<0.1 --	<0.1 --	<0.1 --	<0.1 --	<0.1 --
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	5000	<0.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	25000	<1	<1	<1	<1	<1
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	12500	<1 --	<1 --	<1 --	<1 --	<1 --
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	100000	<40 --	**50** ± 30	**40** ± 30	**90** ± 30	<40 --
EP035G: Total Phenol by Discrete Analyser										
Phenols (Total)	EP035SF	1	mg/kg	----	425000	<1	<1	<1	<1	<1
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	50	<5.00	<5.00	<5.00	<5.00	<5.00
EP070: Total Petroleum Hydrocarbons - Speciation										

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 3 - Table 4 Concentration limit (CL3) values for waste classification

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time*	**BH06_2.5-3.0** 29-Jul-2022 15:00	**BH07_0.5-1.0** 29-Jul-2022 08:55	**BH07_2.5-3.0** 29-Jul-2022 08:55	**MW1_0-0.5** 28-Jul-2022 11:00	**MW1_3-3.5** 28-Jul-2022 11:00
							EP2209615-011 MU	**EP2209615-012** MU	**EP2209615-013** MU	**EP2209615-014** MU	**EP2209615-015** MU
EP070: Total Petroleum Hydrocarbons - Speciation - Continued											
Aliphatic C16-C35	EP070	100	mg/kg	----	280000		<100	<100	<100	<100	<100
Aromatic C16-C35	EP070	90	mg/kg	----	4500		<90	<90	<90	<90	<90
EP074A: Monocyclic Aromatic Hydrocarbons											
Styrene	EP074	0.5	mg/kg	----	1080		<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	50		<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	1000		<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP080	10	mg/kg	----	28000		<10	<10	<10	<10	<10
EP080: BTEXN											
Benzene	EP080	0.2	mg/kg	----	180		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	EP080	0.5	mg/kg	----	5180		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	EP080	0.5	mg/kg	----	10800		<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes	EP080	0.5	mg/kg	----	18000		<0.5	<0.5	<0.5	<0.5	<0.5
EP202A: Phenoxyacetic Acid Herbicides by LCMS											
2.4-D	EP202	0.02	mg/kg	----	1440		<0.02	<0.02	<0.02	<0.02	<0.02

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class I - Table 3 Contaminant threshold (CT1) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time* BH06_2.5-3.0 29-Jul-2022 15:00 EP2209615-011	MU	BH07_0.5-1.0 29-Jul-2022 08:55 EP2209615-012	MU	BH07_2.5-3.0 29-Jul-2022 08:55 EP2209615-013	MU	MW1_0-0.5 28-Jul-2022 11:00 EP2209615-014	MU	MW1_3-3.5 28-Jul-2022 11:00 EP2209615-015	MU
EG005(ED093)T: Total Metals by ICP-AES															
Aluminium	EG005T	50	mg/kg	----	50000	**2600**	± 360	**4650**	± 640	**4600**	± 630	**790**	± 110	**2040**	± 280
Arsenic	EG005T	5	mg/kg	----	14	<5	--	**11**	± 1	<5	--	<5	--	<5	--
Barium	EG005T	10	mg/kg	----	50000	**20**	± 1	**30**	± 3	**20**	± 2	**20**	± 2	<10	--
Beryllium	EG005T	1	mg/kg	----	2	<1		<1		<1		<1		<1	
Boron	EG005T	50	mg/kg	----	50000	<50	--	<50	--	<50	--	<50	--	<50	--
Cobalt	EG005T	2	mg/kg	----	50000	<2	--	**4**	± 0.4	**3**	± 0.3	<2	--	<2	--
Copper	EG005T	5	mg/kg	----	50000	<5	--	<5	--	<5	--	<5	--	<5	--
Manganese	EG005T	5	mg/kg	----	50000	**97**	± 15	**153**	± 23	**194**	± 30	**38**	± 6	**10**	± 2
Molybdenum	EG005T	2	mg/kg	----	10	**2**		**2**		<2		<2		<2	
Nickel	EG005T	2	mg/kg	----	4	<2	--	**4**	± 0.4	**3**	± 0.3	<2	--	<2	--
Silver	EG005T	2	mg/kg	----	20	<2		<2		<2		<2		<2	
Vanadium	EG005T	5	mg/kg	----	50000	**13**	± 1	**22**	± 2	**14**	± 1	<5	--	**9**	± 0.8
Zinc	EG005T	5	mg/kg	----	50000	<5	--	<5	--	<5	--	**19**	± 2	<5	--
EG020T: Total Metals by ICP-MS															
Cadmium	EG020T	0.1	mg/kg	----	0.4	<0.1		<0.1		<0.1		<0.1		<0.1	
Lead	EG020T	0.1	mg/kg	----	2	**2.5**		**3.9**		**4.2**		**5.8**		**2.4**	
Selenium	EG020T	1	mg/kg	----	2	<1		<1		<1		<1		<1	
EG035T: Total Recoverable Mercury by FIMS															
Mercury	EG035T	0.1	mg/kg	----	0.2	<0.1	--	<0.1	--	<0.1	--	<0.1	--	<0.1	--
EG048: Hexavalent Chromium (Alkaline Digest)															
Hexavalent Chromium	EG048G	0.5	mg/kg	----	10	<0.5		<0.5		<0.5		<0.5		<0.5	
EK026SF: Total CN by Segmented Flow Analyser															
Total Cyanide	EK026SF	1	mg/kg	----	16	<1		<1		<1		<1		<1	
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser															
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	7	<1	--	<1	--	<1	--	<1	--	<1	--
EK040T: Fluoride Total															
Fluoride	EK040T	40	mg/kg	----	300	<40	--	**50**	± 30	**40**	± 30	**90**	± 30	<40	--
EP035G: Total Phenol by Discrete Analyser															
Phenols (Total)	EP035SF	1	mg/kg	----	28.8	<1		<1		<1		<1		<1	
EP066: Polychlorinated Biphenyls (PCB)															
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1		<0.1		<0.1		<0.1		<0.1	
EP068A: Organochlorine Pesticides (OC)															
Total OCP	EP068	5.00	mg/kg	----	50	<5.00		<5.00		<5.00		<5.00		<5.00	

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class I - Table 3 Contaminant threshold (CT1) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	**BH06_2.5-3.0** 29-Jul-2022 15:00 **EP2209615-011** MU	**BH07_0.5-1.0** 29-Jul-2022 08:55 **EP2209615-012** MU	**BH07_2.5-3.0** 29-Jul-2022 08:55 **EP2209615-013** MU	**MW1_0-0.5** 28-Jul-2022 11:00 **EP2209615-014** MU	**MW1_3-3.5** 28-Jul-2022 11:00 **EP2209615-015** MU
EP070: Total Petroleum Hydrocarbons - Speciation										
Aliphatic C16-C35	EP070	100	mg/kg	----	28000	<100	<100	<100	<100	<100
Aromatic C16-C35	EP070	90	mg/kg	----	450	<90	<90	<90	<90	<90
EP074A: Monocyclic Aromatic Hydrocarbons										
Styrene	EP074	0.5	mg/kg	----	6	<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	100	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP080	10	mg/kg	----	2800	<10	<10	<10	<10	<10
EP080: BTEXN										
Benzene	EP080	0.2	mg/kg	----	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	EP080	0.5	mg/kg	----	160	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	EP080	0.5	mg/kg	----	60	<0.5	<0.5	<0.5	<0.5	<0.5
EP202A: Phenoxyacetic Acid Herbicides by LCMS										
2.4-D	EP202	0.02	mg/kg	----	0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class II - Table 3 Contaminant threshold (CT2) values for waste not requiring leachate

Sub-Matrix: **SOIL**

				Sample ID		BH06_2.5-3.0	BH07_0.5-1.0	BH07_2.5-3.0	MW1_0-0.5	MW1_3-3.5
				Sampling date/time		29-Jul-2022 15:00	29-Jul-2022 08:55	29-Jul-2022 08:55	28-Jul-2022 11:00	28-Jul-2022 11:00
Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	EP2209615-011 MU	EP2209615-012 MU	EP2209615-013 MU	EP2209615-014 MU	EP2209615-015 MU
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	50000	**2600** ± 360	**4650** ± 640	**4600** ± 630	**790** ± 110	**2040** ± 280
Arsenic	EG005T	5	mg/kg	----	14	<5 --	**11** ± 1	<5 --	<5 --	<5 --
Barium	EG005T	10	mg/kg	----	50000	**20** ± 1	**30** ± 3	**20** ± 2	**20** ± 2	<10 --
Beryllium	EG005T	1	mg/kg	----	2	<1	<1	<1	<1	<1
Boron	EG005T	50	mg/kg	----	50000	<50 --	<50 --	<50 --	<50 --	<50 --
Cobalt	EG005T	2	mg/kg	----	50000	<2 --	**4** ± 0.4	**3** ± 0.3	<2 --	<2 --
Copper	EG005T	5	mg/kg	----	50000	<5 --	<5 --	<5 --	<5 --	<5 --
Manganese	EG005T	5	mg/kg	----	50000	**97** ± 15	**153** ± 23	**194** ± 30	**38** ± 6	**10** ± 2
Molybdenum	EG005T	2	mg/kg	----	10	**2**	**2**	<2	<2	<2
Nickel	EG005T	2	mg/kg	----	4	<2 --	**4** ± 0.4	**3** ± 0.3	<2 --	<2 --
Silver	EG005T	2	mg/kg	----	20	<2	<2	<2	<2	<2
Vanadium	EG005T	5	mg/kg	----	50000	**13** ± 1	**22** ± 2	**14** ± 1	<5 --	**9** ± 0.8
Zinc	EG005T	5	mg/kg	----	50000	<5 --	<5 --	<5 --	**19** ± 2	<5 --
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	0.4	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	EG020T	0.1	mg/kg	----	2	**2.5**	**3.9**	**4.2**	**5.8**	**2.4**
Selenium	EG020T	1	mg/kg	----	2	<1	<1	<1	<1	<1
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	0.2	<0.1 --	<0.1 --	<0.1 --	<0.1 --	<0.1 --
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	10	<0.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	16	<1	<1	<1	<1	<1
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	7	<1 --	<1 --	<1 --	<1 --	<1 --
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	300	<40 --	**50** ± 30	**40** ± 30	**90** ± 30	<40 --
EP035G: Total Phenol by Discrete Analyser										
Phenols (Total)	EP035SF	1	mg/kg	----	28.8	<1	<1	<1	<1	<1
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	50	<5.00	<5.00	<5.00	<5.00	<5.00

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class II - Table 3 Contaminant threshold (CT2) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	**BH06_2.5-3.0** 29-Jul-2022 15:00 **EP2209615-011** MU	**BH07_0.5-1.0** 29-Jul-2022 08:55 **EP2209615-012** MU	**BH07_2.5-3.0** 29-Jul-2022 08:55 **EP2209615-013** MU	**MW1_0-0.5** 28-Jul-2022 11:00 **EP2209615-014** MU	**MW1_3-3.5** 28-Jul-2022 11:00 **EP2209615-015** MU
EP070: Total Petroleum Hydrocarbons - Speciation										
Aliphatic C16-C35	EP070	100	mg/kg	----	28000	<100	<100	<100	<100	<100
Aromatic C16-C35	EP070	90	mg/kg	----	450	<90	<90	<90	<90	<90
EP074A: Monocyclic Aromatic Hydrocarbons										
Styrene	EP074	0.5	mg/kg	----	6	<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	5	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	100	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP080	10	mg/kg	----	2800	<10	<10	<10	<10	<10
EP080: BTEXN										
Benzene	EP080	0.2	mg/kg	----	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	EP080	0.5	mg/kg	----	160	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	EP080	0.5	mg/kg	----	60	<0.5	<0.5	<0.5	<0.5	<0.5
EP202A: Phenoxyacetic Acid Herbicides by LCMS										
2.4-D	EP202	0.02	mg/kg	----	0.02	<0.02	<0.02	<0.02	<0.02	<0.02

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class III - Table 3 Contaminant threshold (CT3) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time* BH06_2.5-3.0 29-Jul-2022 15:00 EP2209615-011 MU	BH07_0.5-1.0 29-Jul-2022 08:55 EP2209615-012 MU	BH07_2.5-3.0 29-Jul-2022 08:55 EP2209615-013 MU	MW1_0-0.5 28-Jul-2022 11:00 EP2209615-014 MU	MW1_3-3.5 28-Jul-2022 11:00 EP2209615-015 MU
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	100000	**2600** ± 360	**4650** ± 640	**4600** ± 630	**790** ± 110	**2040** ± 280
Arsenic	EG005T	5	mg/kg	----	140	<5 --	**11** ± 1	<5 --	<5 --	<5 --
Barium	EG005T	10	mg/kg	----	100000	**20** ± 1	**30** ± 3	**20** ± 2	**20** ± 2	<10 --
Beryllium	EG005T	1	mg/kg	----	20	<1	<1	<1	<1	<1
Boron	EG005T	50	mg/kg	----	100000	<50 --	<50 --	<50 --	<50 --	<50 --
Cobalt	EG005T	2	mg/kg	----	100000	<2 --	**4** ± 0.4	**3** ± 0.3	<2 --	<2 --
Copper	EG005T	5	mg/kg	----	100000	<5 --	<5 --	<5 --	<5 --	<5 --
Manganese	EG005T	5	mg/kg	----	100000	**97** ± 15	**153** ± 23	**194** ± 30	**38** ± 6	**10** ± 2
Molybdenum	EG005T	2	mg/kg	----	100	**2**	**2**	<2	<2	<2
Nickel	EG005T	2	mg/kg	----	40	<2 --	**4** ± 0.4	**3** ± 0.3	<2 --	<2 --
Silver	EG005T	2	mg/kg	----	200	<2	<2	<2	<2	<2
Vanadium	EG005T	5	mg/kg	----	100000	**13** ± 1	**22** ± 2	**14** ± 1	<5 --	**9** ± 0.8
Zinc	EG005T	5	mg/kg	----	100000	<5 --	<5 --	<5 --	**19** ± 2	<5 --
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	4	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	EG020T	0.1	mg/kg	----	20	**2.5**	**3.9**	**4.2**	**5.8**	**2.4**
Selenium	EG020T	1	mg/kg	----	20	<1	<1	<1	<1	<1
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	2	<0.1 --	<0.1 --	<0.1 --	<0.1 --	<0.1 --
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	100	<0.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	160	<1	<1	<1	<1	<1
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	70	<1 --	<1 --	<1 --	<1 --	<1 --
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	3000	<40 --	**50** ± 30	**40** ± 30	**90** ± 30	<40 --
EP035G: Total Phenol by Discrete Analyser										
Phenols (Total)	EP035SF	1	mg/kg	----	288	<1	<1	<1	<1	<1
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	50	<5.00	<5.00	<5.00	<5.00	<5.00

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class III - Table 3 Contaminant threshold (CT3) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	**BH06_2.5-3.0** 29-Jul-2022 15:00 **EP2209615-011** MU	**BH07_0.5-1.0** 29-Jul-2022 08:55 **EP2209615-012** MU	**BH07_2.5-3.0** 29-Jul-2022 08:55 **EP2209615-013** MU	**MW1_0-0.5** 28-Jul-2022 11:00 **EP2209615-014** MU	**MW1_3-3.5** 28-Jul-2022 11:00 **EP2209615-015** MU
EP070: Total Petroleum Hydrocarbons - Speciation										
Aliphatic C16-C35	EP070	100	mg/kg	----	280000	<100	<100	<100	<100	<100
Aromatic C16-C35	EP070	90	mg/kg	----	4500	<90	<90	<90	<90	<90
EP074A: Monocyclic Aromatic Hydrocarbons										
Styrene	EP074	0.5	mg/kg	----	60	<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	50	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	1000	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP080	10	mg/kg	----	28000	<10	<10	<10	<10	<10
EP080: BTEXN										
Benzene	EP080	0.2	mg/kg	----	2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	EP080	0.5	mg/kg	----	1600	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	EP080	0.5	mg/kg	----	600	<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes	EP080	0.5	mg/kg	----	1200	<0.5	<0.5	<0.5	<0.5	<0.5
EP202A: Phenoxyacetic Acid Herbicides by LCMS										
2.4-D	EP202	0.02	mg/kg	----	0.2	<0.02	<0.02	<0.02	<0.02	<0.02

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class IV - Table 3 Contaminant threshold (CT4) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time* BH06_2.5-3.0 29-Jul-2022 15:00 EP2209615-011 MU	BH07_0.5-1.0 29-Jul-2022 08:55 EP2209615-012 MU	BH07_2.5-3.0 29-Jul-2022 08:55 EP2209615-013 MU	MW1_0-0.5 28-Jul-2022 11:00 EP2209615-014 MU	MW1_3-3.5 28-Jul-2022 11:00 EP2209615-015 MU
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	200000	**2600** ± 360	**4650** ± 640	**4600** ± 630	**790** ± 110	**2040** ± 280
Arsenic	EG005T	5	mg/kg	----	1400	<5 --	**11** ± 1	<5 --	<5 --	<5 --
Barium	EG005T	10	mg/kg	----	200000	**20** ± 1	**30** ± 3	**20** ± 2	**20** ± 2	<10 --
Beryllium	EG005T	1	mg/kg	----	200	<1	<1	<1	<1	<1
Boron	EG005T	50	mg/kg	----	200000	<50 --	<50 --	<50 --	<50 --	<50 --
Cobalt	EG005T	2	mg/kg	----	200000	<2 --	**4** ± 0.4	**3** ± 0.3	<2 --	<2 --
Copper	EG005T	5	mg/kg	----	200000	<5 --	<5 --	<5 --	<5 --	<5 --
Manganese	EG005T	5	mg/kg	----	200000	**97** ± 15	**153** ± 23	**194** ± 30	**38** ± 6	**10** ± 2
Molybdenum	EG005T	2	mg/kg	----	1000	**2**	**2**	<2	<2	<2
Nickel	EG005T	2	mg/kg	----	400	<2 --	**4** ± 0.4	**3** ± 0.3	<2 --	<2 --
Silver	EG005T	2	mg/kg	----	2000	<2	<2	<2	<2	<2
Vanadium	EG005T	5	mg/kg	----	200000	**13** ± 1	**22** ± 2	**14** ± 1	<5 --	**9** ± 0.8
Zinc	EG005T	5	mg/kg	----	200000	<5 --	<5 --	<5 --	**19** ± 2	<5 --
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	40	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	EG020T	0.1	mg/kg	----	200	**2.5**	**3.9**	**4.2**	**5.8**	**2.4**
Selenium	EG020T	1	mg/kg	----	200	<1	<1	<1	<1	<1
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	20	<0.1 --	<0.1 --	<0.1 --	<0.1 --	<0.1 --
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	1000	<0.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	1600	<1	<1	<1	<1	<1
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	700	<1 --	<1 --	<1 --	<1 --	<1 --
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	30000	<40 --	**50** ± 30	**40** ± 30	**90** ± 30	<40 --
EP035G: Total Phenol by Discrete Analyser										
Phenols (Total)	EP035SF	1	mg/kg	----	2880	<1	<1	<1	<1	<1
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	50	<5.00	<5.00	<5.00	<5.00	<5.00

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class IV - Table 3 Contaminant threshold (CT4) values for waste not requiring leachate

Sub-Matrix: **SOIL**

				Sample ID	Guideline	Guideline	BH06_2.5-3.0	BH07_0.5-1.0	BH07_2.5-3.0	MW1_0-0.5	MW1_3-3.5
				Sampling date/time			29-Jul-2022 15:00	29-Jul-2022 08:55	29-Jul-2022 08:55	28-Jul-2022 11:00	28-Jul-2022 11:00
Compound	*Method*	*LOR*	*Unit*		Lower Limit	Upper Limit	EP2209615-011 MU	EP2209615-012 MU	EP2209615-013 MU	EP2209615-014 MU	EP2209615-015 MU
EP070: Total Petroleum Hydrocarbons - Speciation											
Aromatic C16-C35	EP070	90	mg/kg		----	18000	<90	<90	<90	<90	<90
EP074A: Monocyclic Aromatic Hydrocarbons											
Styrene	EP074	0.5	mg/kg		----	600	<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg		----	200	<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg		----	4000	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP080	10	mg/kg		----	112000	<10	<10	<10	<10	<10
EP080: BTEXN											
Benzene	EP080	0.2	mg/kg		----	20	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	EP080	0.5	mg/kg		----	16000	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	EP080	0.5	mg/kg		----	6000	<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes	EP080	0.5	mg/kg		----	12000	<0.5	<0.5	<0.5	<0.5	<0.5
EP202A: Phenoxyacetic Acid Herbicides by LCMS											
2.4-D	EP202	0.02	mg/kg		----	2	<0.02	<0.02	<0.02	<0.02	<0.02

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (As amended December 2019): Class 4 - Table 4 Concentration limit (CL4) values for waste classification

Sub-Matrix: **SOIL**

Compound	Method	LOR	Unit	Guideline Lower Limit	Guideline Upper Limit	BH06_2.5-3.0	BH07_0.5-1.0	BH07_2.5-3.0	MW1_0-0.5	MW1_3-3.5
Sample ID										
Sampling date/time						29-Jul-2022 15:00	29-Jul-2022 08:55	29-Jul-2022 08:55	28-Jul-2022 11:00	28-Jul-2022 11:00
						EP2209615-011 MU	EP2209615-012 MU	EP2209615-013 MU	EP2209615-014 MU	EP2209615-015 MU
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	200000	**2600** ± 360	**4650** ± 640	**4600** ± 630	**790** ± 110	**2040** ± 280
Arsenic	EG005T	5	mg/kg	----	20000	<5 --	**11** ± 1	<5 --	<5 --	<5 --
Barium	EG005T	10	mg/kg	----	200000	**20** ± 1	**30** ± 3	**20** ± 2	**20** ± 2	<10 --
Beryllium	EG005T	1	mg/kg	----	4000	<1	<1	<1	<1	<1
Boron	EG005T	50	mg/kg	----	200000	<50 --	<50 --	<50 --	<50 --	<50 --
Cobalt	EG005T	2	mg/kg	----	200000	<2 --	**4** ± 0.4	**3** ± 0.3	<2 --	<2 --
Copper	EG005T	5	mg/kg	----	200000	<5 --	<5 --	<5 --	<5 --	<5 --
Manganese	EG005T	5	mg/kg	----	200000	**97** ± 15	**153** ± 23	**194** ± 30	**38** ± 6	**10** ± 2
Molybdenum	EG005T	2	mg/kg	----	40000	**2**	**2**	<2	<2	<2
Nickel	EG005T	2	mg/kg	----	120000	<2 --	**4** ± 0.4	**3** ± 0.3	<2 --	<2 --
Silver	EG005T	2	mg/kg	----	7200	<2	<2	<2	<2	<2
Vanadium	EG005T	5	mg/kg	----	200000	**13** ± 1	**22** ± 2	**14** ± 1	<5 --	**9** ± 0.8
Zinc	EG005T	5	mg/kg	----	200000	<5 --	<5 --	<5 --	**19** ± 2	<5 --
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	4000	<0.1	<0.1	<0.1	<0.1	<0.1
Lead	EG020T	0.1	mg/kg	----	60000	**2.5**	**3.9**	**4.2**	**5.8**	**2.4**
Selenium	EG020T	1	mg/kg	----	2000	<1	<1	<1	<1	<1
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	3000	<0.1 --	<0.1 --	<0.1 --	<0.1 --	<0.1 --
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	2000	<0.5	<0.5	<0.5	<0.5	<0.5
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	100000	<1	<1	<1	<1	<1
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	50000	<1 --	<1 --	<1 --	<1 --	<1 --
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	400000	<40 --	**50** ± 30	**40** ± 30	**90** ± 30	<40 --
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	50	<5.00	<5.00	<5.00	<5.00	<5.00
EP070: Total Petroleum Hydrocarbons - Speciation										
Aromatic C16-C35	EP070	90	mg/kg	----	18000	<90	<90	<90	<90	<90
EP074A: Monocyclic Aromatic Hydrocarbons										

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (As amended December 2019): Class 4 - Table 4 Concentration limit (CL4) values for waste classification

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time*	**BH06_2.5-3.0** 29-Jul-2022 15:00	**BH07_0.5-1.0** 29-Jul-2022 08:55	**BH07_2.5-3.0** 29-Jul-2022 08:55	**MW1_0-0.5** 28-Jul-2022 11:00	**MW1_3-3.5** 28-Jul-2022 11:00
							EP2209615-011 MU	**EP2209615-012** MU	**EP2209615-013** MU	**EP2209615-014** MU	**EP2209615-015** MU
EP074A: Monocyclic Aromatic Hydrocarbons - Continued											
Styrene	EP074	0.5	mg/kg	----	4320		<0.5	<0.5	<0.5	<0.5	<0.5
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	200		<0.5	<0.5	<0.5	<0.5	<0.5
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	4000		<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP080	10	mg/kg	----	112000		<10	<10	<10	<10	<10
EP080: BTEXN											
Benzene	EP080	0.2	mg/kg	----	720		<0.2	<0.2	<0.2	<0.2	<0.2
EP202A: Phenoxyacetic Acid Herbicides by LCMS											
2.4-D	EP202	0.02	mg/kg	----	5760		<0.02	<0.02	<0.02	<0.02	<0.02

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 1 - Table 4 Concentration limit (CL1) values for waste classification

Sub-Matrix: **SOIL**

				Sample ID		MW2_0-0.5	MW2_3-3.5	QC101	MW1_4.0-4.5	MW2_4.5-5.0
				Sampling date/time		28-Jul-2022 11:00	28-Jul-2022 11:00	29-Jul-2022 15:00	28-Jul-2022 11:20	28-Jul-2022 12:35
Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	EP2209615-016 MU	EP2209615-017 MU	EP2209615-018 MU	EP2209615-019 MU	EP2209615-020 MU
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	50000	**3160** ± 440	**1840** ± 250	**860** ± 120	----	----
Arsenic	EG005T	5	mg/kg	----	500	<5 --	**7** ± 0.7	<5 --	----	----
Barium	EG005T	10	mg/kg	----	50000	**30** ± 2	<10 --	<10 --	----	----
Beryllium	EG005T	1	mg/kg	----	100	<1	<1	<1	----	----
Boron	EG005T	50	mg/kg	----	50000	<50 --	<50 --	<50 --	----	----
Cobalt	EG005T	2	mg/kg	----	50000	**3** ± 0.3	<2 --	<2 --	----	----
Copper	EG005T	5	mg/kg	----	50000	<5 --	<5 --	<5 --	----	----
Manganese	EG005T	5	mg/kg	----	50000	**130** ± 20	**91** ± 14	**16** ± 2	----	----
Molybdenum	EG005T	2	mg/kg	----	1000	<2	<2	<2	----	----
Nickel	EG005T	2	mg/kg	----	3000	**2** ± 0.3	<2 --	<2 --	----	----
Silver	EG005T	2	mg/kg	----	180	<2	<2	<2	----	----
Vanadium	EG005T	5	mg/kg	----	50000	**15** ± 1	**12** ± 1	<5 --	----	----
Zinc	EG005T	5	mg/kg	----	50000	<5 --	<5 --	**10** ± 1	----	----
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	100	<0.1	<0.1	<0.1	----	----
Lead	EG020T	0.1	mg/kg	----	1500	**2.9**	**1.5**	**7.5**	----	----
Selenium	EG020T	1	mg/kg	----	50	<1	<1	<1	----	----
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	75	<0.1 --	<0.1 --	<0.1 --	----	----
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	500	<0.5	<0.5	<0.5	----	----
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	2500	<1	<1	<1	----	----
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	1250	<1 --	<1 --	<1 --	----	----
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	10000	**50** ± 30	<40 --	**80** ± 30	----	----
EP035G: Total Phenol by Discrete Analyser										
Phenols (Total)	EP035SF	1	mg/kg	----	42500	<1	<1	<1	----	----
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1	<0.1	<0.1	----	----
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	50	<5.00	<5.00	<5.00	----	----
EP070: Total Petroleum Hydrocarbons - Speciation										

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 1 - Table 4 Concentration limit (CL1) values for waste classification

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time* MW2_0-0.5 28-Jul-2022 11:00 EP2209615-016 MU	MW2_3-3.5 28-Jul-2022 11:00 EP2209615-017 MU	QC101 29-Jul-2022 15:00 EP2209615-018 MU	MW1_4.0-4.5 28-Jul-2022 11:20 EP2209615-019 MU	MW2_4.5-5.0 28-Jul-2022 12:35 EP2209615-020 MU
EP070: Total Petroleum Hydrocarbons - Speciation - Continued										
Aliphatic C16-C35	EP070	100	mg/kg	----	28000	<100	<100	<100	----	----
Aromatic C16-C35	EP070	90	mg/kg	----	450	<90	<90	<90	----	----
EP074A: Monocyclic Aromatic Hydrocarbons										
Styrene	EP074	0.5	mg/kg	----	108	<0.5	<0.5	<0.5	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	5	<0.5	<0.5	<0.5	----	----
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	100	<0.5	<0.5	<0.5	----	----
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP080	10	mg/kg	----	2800	<10	<10	<10	----	----
EP080: BTEXN										
Benzene	EP080	0.2	mg/kg	----	18	<0.2	<0.2	<0.2	----	----
Toluene	EP080	0.5	mg/kg	----	518	<0.5	<0.5	<0.5	----	----
Ethylbenzene	EP080	0.5	mg/kg	----	1080	<0.5	<0.5	<0.5	----	----
Total Xylenes	EP080	0.5	mg/kg	----	1800	<0.5	<0.5	<0.5	----	----
EP202A: Phenoxyacetic Acid Herbicides by LCMS										
2.4-D	EP202	0.02	mg/kg	----	360	<0.02	<0.02	<0.02	----	----

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 2 - Table 4 Concentration limit (CL2) values for waste classification

Sub-Matrix: **SOIL**

				Sample ID		MW2_0-0.5	MW2_3-3.5	QC101	MW1_4.0-4.5	MW2_4.5-5.0
				Sampling date/time		28-Jul-2022 11:00	28-Jul-2022 11:00	29-Jul-2022 15:00	28-Jul-2022 11:20	28-Jul-2022 12:35
Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	EP2209615-016 MU	EP2209615-017 MU	EP2209615-018 MU	EP2209615-019 MU	EP2209615-020 MU
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	50000	**3160** ± 440	**1840** ± 250	**860** ± 120	----	----
Arsenic	EG005T	5	mg/kg	----	500	<5 --	**7** ± 0.7	<5 --	----	----
Barium	EG005T	10	mg/kg	----	50000	**30** ± 2	<10 --	<10 --	----	----
Beryllium	EG005T	1	mg/kg	----	100	<1	<1	<1	----	----
Boron	EG005T	50	mg/kg	----	50000	<50 --	<50 --	<50 --	----	----
Cobalt	EG005T	2	mg/kg	----	50000	**3** ± 0.3	<2 --	<2 --	----	----
Copper	EG005T	5	mg/kg	----	50000	<5 --	<5 --	<5 --	----	----
Manganese	EG005T	5	mg/kg	----	50000	**130** ± 20	**91** ± 14	**16** ± 2	----	----
Molybdenum	EG005T	2	mg/kg	----	1000	<2	<2	<2	----	----
Nickel	EG005T	2	mg/kg	----	3000	**2** ± 0.3	<2 --	<2 --	----	----
Silver	EG005T	2	mg/kg	----	180	<2	<2	<2	----	----
Vanadium	EG005T	5	mg/kg	----	50000	**15** ± 1	**12** ± 1	<5 --	----	----
Zinc	EG005T	5	mg/kg	----	50000	<5 --	<5 --	**10** ± 1	----	----
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	100	<0.1	<0.1	<0.1	----	----
Lead	EG020T	0.1	mg/kg	----	1500	**2.9**	**1.5**	**7.5**	----	----
Selenium	EG020T	1	mg/kg	----	50	<1	<1	<1	----	----
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	75	<0.1 --	<0.1 --	<0.1 --	----	----
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	500	<0.5	<0.5	<0.5	----	----
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	2500	<1	<1	<1	----	----
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	1250	<1 --	<1 --	<1 --	----	----
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	10000	**50** ± 30	<40 --	**80** ± 30	----	----
EP035G: Total Phenol by Discrete Analyser										
Phenols (Total)	EP035SF	1	mg/kg	----	42500	<1	<1	<1	----	----
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1	<0.1	<0.1	----	----
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	50	<5.00	<5.00	<5.00	----	----
EP070: Total Petroleum Hydrocarbons - Speciation										

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 2 - Table 4 Concentration limit (CL2) values for waste classification

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time* MW2_0-0.5 28-Jul-2022 11:00 EP2209615-016 MU	MW2_3-3.5 28-Jul-2022 11:00 EP2209615-017 MU	QC101 29-Jul-2022 15:00 EP2209615-018 MU	MW1_4.0-4.5 28-Jul-2022 11:20 EP2209615-019 MU	MW2_4.5-5.0 28-Jul-2022 12:35 EP2209615-020 MU
EP070: Total Petroleum Hydrocarbons - Speciation - Continued										
Aliphatic C16-C35	EP070	100	mg/kg	----	28000	<100	<100	<100	----	----
Aromatic C16-C35	EP070	90	mg/kg	----	450	<90	<90	<90	----	----
EP074A: Monocyclic Aromatic Hydrocarbons										
Styrene	EP074	0.5	mg/kg	----	108	<0.5	<0.5	<0.5	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	5	<0.5	<0.5	<0.5	----	----
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	100	<0.5	<0.5	<0.5	----	----
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP080	10	mg/kg	----	2800	<10	<10	<10	----	----
EP080: BTEXN										
Benzene	EP080	0.2	mg/kg	----	18	<0.2	<0.2	<0.2	----	----
Toluene	EP080	0.5	mg/kg	----	518	<0.5	<0.5	<0.5	----	----
Ethylbenzene	EP080	0.5	mg/kg	----	1080	<0.5	<0.5	<0.5	----	----
Total Xylenes	EP080	0.5	mg/kg	----	1800	<0.5	<0.5	<0.5	----	----
EP202A: Phenoxyacetic Acid Herbicides by LCMS										
2.4-D	EP202	0.02	mg/kg	----	360	<0.02	<0.02	<0.02	----	----

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 3 - Table 4 Concentration limit (CL3) values for waste classification

Sub-Matrix: **SOIL**

				Sample ID		MW2_0-0.5	MW2_3-3.5	QC101	MW1_4.0-4.5	MW2_4.5-5.0
				Sampling date/time		28-Jul-2022 11:00	28-Jul-2022 11:00	29-Jul-2022 15:00	28-Jul-2022 11:20	28-Jul-2022 12:35
Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	EP2209615-016 MU	EP2209615-017 MU	EP2209615-018 MU	EP2209615-019 MU	EP2209615-020 MU
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	100000	**3160** ± 440	**1840** ± 250	**860** ± 120	----	----
Arsenic	EG005T	5	mg/kg	----	5000	<5 --	**7** ± 0.7	<5 --	----	----
Barium	EG005T	10	mg/kg	----	100000	**30** ± 2	<10 --	<10 --	----	----
Beryllium	EG005T	1	mg/kg	----	1000	<1	<1	<1	----	----
Boron	EG005T	50	mg/kg	----	100000	<50 --	<50 --	<50 --	----	----
Cobalt	EG005T	2	mg/kg	----	100000	**3** ± 0.3	<2 --	<2 --	----	----
Copper	EG005T	5	mg/kg	----	100000	<5 --	<5 --	<5 --	----	----
Manganese	EG005T	5	mg/kg	----	100000	**130** ± 20	**91** ± 14	**16** ± 2	----	----
Molybdenum	EG005T	2	mg/kg	----	10000	<2	<2	<2	----	----
Nickel	EG005T	2	mg/kg	----	30000	**2** ± 0.3	<2 --	<2 --	----	----
Silver	EG005T	2	mg/kg	----	1800	<2	<2	<2	----	----
Vanadium	EG005T	5	mg/kg	----	100000	**15** ± 1	**12** ± 1	<5 --	----	----
Zinc	EG005T	5	mg/kg	----	100000	<5 --	<5 --	**10** ± 1	----	----
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	1000	<0.1	<0.1	<0.1	----	----
Lead	EG020T	0.1	mg/kg	----	15000	**2.9**	**1.5**	**7.5**	----	----
Selenium	EG020T	1	mg/kg	----	500	<1	<1	<1	----	----
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	750	<0.1 --	<0.1 --	<0.1 --	----	----
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	5000	<0.5	<0.5	<0.5	----	----
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	25000	<1	<1	<1	----	----
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	12500	<1 --	<1 --	<1 --	----	----
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	100000	**50** ± 30	<40 --	**80** ± 30	----	----
EP035G: Total Phenol by Discrete Analyser										
Phenols (Total)	EP035SF	1	mg/kg	----	425000	<1	<1	<1	----	----
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1	<0.1	<0.1	----	----
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	50	<5.00	<5.00	<5.00	----	----
EP070: Total Petroleum Hydrocarbons - Speciation										

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 3 - Table 4 Concentration limit (CL3) values for waste classification

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time* MW2_0-0.5 28-Jul-2022 11:00 EP2209615-016 MU	MW2_3-3.5 28-Jul-2022 11:00 EP2209615-017 MU	QC101 29-Jul-2022 15:00 EP2209615-018 MU	MW1_4.0-4.5 28-Jul-2022 11:20 EP2209615-019 MU	MW2_4.5-5.0 28-Jul-2022 12:35 EP2209615-020 MU
EP070: Total Petroleum Hydrocarbons - Speciation - Continued										
Aliphatic C16-C35	EP070	100	mg/kg	----	280000	<100	<100	<100	----	----
Aromatic C16-C35	EP070	90	mg/kg	----	4500	<90	<90	<90	----	----
EP074A: Monocyclic Aromatic Hydrocarbons										
Styrene	EP074	0.5	mg/kg	----	1080	<0.5	<0.5	<0.5	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	50	<0.5	<0.5	<0.5	----	----
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	1000	<0.5	<0.5	<0.5	----	----
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP080	10	mg/kg	----	28000	<10	<10	<10	----	----
EP080: BTEXN										
Benzene	EP080	0.2	mg/kg	----	180	<0.2	<0.2	<0.2	----	----
Toluene	EP080	0.5	mg/kg	----	5180	<0.5	<0.5	<0.5	----	----
Ethylbenzene	EP080	0.5	mg/kg	----	10800	<0.5	<0.5	<0.5	----	----
Total Xylenes	EP080	0.5	mg/kg	----	18000	<0.5	<0.5	<0.5	----	----
EP202A: Phenoxyacetic Acid Herbicides by LCMS										
2.4-D	EP202	0.02	mg/kg	----	1440	<0.02	<0.02	<0.02	----	----

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class I - Table 3 Contaminant threshold (CT1) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	**MW2_0-0.5** 28-Jul-2022 11:00 **EP2209615-016** MU	**MW2_3-3.5** 28-Jul-2022 11:00 **EP2209615-017** MU	**QC101** 29-Jul-2022 15:00 **EP2209615-018** MU	**MW1_4.0-4.5** 28-Jul-2022 11:20 **EP2209615-019** MU	**MW2_4.5-5.0** 28-Jul-2022 12:35 **EP2209615-020** MU
Sample ID / *Sampling date/time*										
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	50000	**3160** ± 440	**1840** ± 250	**860** ± 120	----	----
Arsenic	EG005T	5	mg/kg	----	14	<5 --	**7** ± 0.7	<5 --	----	----
Barium	EG005T	10	mg/kg	----	50000	**30** ± 2	<10 --	<10 --	----	----
Beryllium	EG005T	1	mg/kg	----	2	<1	<1	<1	----	----
Boron	EG005T	50	mg/kg	----	50000	<50 --	<50 --	<50 --	----	----
Cobalt	EG005T	2	mg/kg	----	50000	**3** ± 0.3	<2 --	<2 --	----	----
Copper	EG005T	5	mg/kg	----	50000	<5 --	<5 --	<5 --	----	----
Manganese	EG005T	5	mg/kg	----	50000	**130** ± 20	**91** ± 14	**16** ± 2	----	----
Molybdenum	EG005T	2	mg/kg	----	10	<2	<2	<2	----	----
Nickel	EG005T	2	mg/kg	----	4	**2** ± 0.3	<2 --	<2 --	----	----
Silver	EG005T	2	mg/kg	----	20	<2	<2	<2	----	----
Vanadium	EG005T	5	mg/kg	----	50000	**15** ± 1	**12** ± 1	<5 --	----	----
Zinc	EG005T	5	mg/kg	----	50000	<5 --	<5 --	**10** ± 1	----	----
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	0.4	<0.1	<0.1	<0.1	----	----
Lead	EG020T	0.1	mg/kg	----	2	**2.9**	**1.5**	**7.5**	----	----
Selenium	EG020T	1	mg/kg	----	2	<1	<1	<1	----	----
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	0.2	<0.1 --	<0.1 --	<0.1 --	----	----
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	10	<0.5	<0.5	<0.5	----	----
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	16	<1	<1	<1	----	----
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	7	<1 --	<1 --	<1 --	----	----
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	300	**50** ± 30	<40 --	**80** ± 30	----	----
EP035G: Total Phenol by Discrete Analyser										
Phenols (Total)	EP035SF	1	mg/kg	----	28.8	<1	<1	<1	----	----
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1	<0.1	<0.1	----	----
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	50	<5.00	<5.00	<5.00	----	----

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class I - Table 3 Contaminant threshold (CT1) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	**MW2_0-0.5** 28-Jul-2022 11:00 **EP2209615-016** MU	**MW2_3-3.5** 28-Jul-2022 11:00 **EP2209615-017** MU	**QC101** 29-Jul-2022 15:00 **EP2209615-018** MU	**MW1_4.0-4.5** 28-Jul-2022 11:20 **EP2209615-019** MU	**MW2_4.5-5.0** 28-Jul-2022 12:35 **EP2209615-020** MU
EP070: Total Petroleum Hydrocarbons - Speciation										
Aliphatic C16-C35	EP070	100	mg/kg	----	28000	<100	<100	<100	----	----
Aromatic C16-C35	EP070	90	mg/kg	----	450	<90	<90	<90	----	----
EP074A: Monocyclic Aromatic Hydrocarbons										
Styrene	EP074	0.5	mg/kg	----	6	<0.5	<0.5	<0.5	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	5	<0.5	<0.5	<0.5	----	----
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	100	<0.5	<0.5	<0.5	----	----
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP080	10	mg/kg	----	2800	<10	<10	<10	----	----
EP080: BTEXN										
Benzene	EP080	0.2	mg/kg	----	0.2	<0.2	<0.2	<0.2	----	----
Toluene	EP080	0.5	mg/kg	----	160	<0.5	<0.5	<0.5	----	----
Ethylbenzene	EP080	0.5	mg/kg	----	60	<0.5	<0.5	<0.5	----	----
EP202A: Phenoxyacetic Acid Herbicides by LCMS										
2.4-D	EP202	0.02	mg/kg	----	0.02	<0.02	<0.02	<0.02	----	----

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class II - Table 3 Contaminant threshold (CT2) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	**MW2_0-0.5** 28-Jul-2022 11:00 **EP2209615-016** MU	**MW2_3-3.5** 28-Jul-2022 11:00 **EP2209615-017** MU	**QC101** 29-Jul-2022 15:00 **EP2209615-018** MU	**MW1_4.0-4.5** 28-Jul-2022 11:20 **EP2209615-019** MU	**MW2_4.5-5.0** 28-Jul-2022 12:35 **EP2209615-020** MU
Sample ID / *Sampling date/time*										
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	50000	**3160** ± 440	**1840** ± 250	**860** ± 120	----	----
Arsenic	EG005T	5	mg/kg	----	14	<5 --	**7** ± 0.7	<5 --	----	----
Barium	EG005T	10	mg/kg	----	50000	**30** ± 2	<10 --	<10 --	----	----
Beryllium	EG005T	1	mg/kg	----	2	<1	<1	<1	----	----
Boron	EG005T	50	mg/kg	----	50000	<50 --	<50 --	<50 --	----	----
Cobalt	EG005T	2	mg/kg	----	50000	**3** ± 0.3	<2 --	<2 --	----	----
Copper	EG005T	5	mg/kg	----	50000	<5 --	<5 --	<5 --	----	----
Manganese	EG005T	5	mg/kg	----	50000	**130** ± 20	**91** ± 14	**16** ± 2	----	----
Molybdenum	EG005T	2	mg/kg	----	10	<2	<2	<2	----	----
Nickel	EG005T	2	mg/kg	----	4	**2** ± 0.3	<2 --	<2 --	----	----
Silver	EG005T	2	mg/kg	----	20	<2	<2	<2	----	----
Vanadium	EG005T	5	mg/kg	----	50000	**15** ± 1	**12** ± 1	<5 --	----	----
Zinc	EG005T	5	mg/kg	----	50000	<5 --	<5 --	**10** ± 1	----	----
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	0.4	<0.1	<0.1	<0.1	----	----
Lead	EG020T	0.1	mg/kg	----	2	**2.9**	**1.5**	**7.5**	----	----
Selenium	EG020T	1	mg/kg	----	2	<1	<1	<1	----	----
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	0.2	<0.1 --	<0.1 --	<0.1 --	----	----
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	10	<0.5	<0.5	<0.5	----	----
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	16	<1	<1	<1	----	----
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	7	<1 --	<1 --	<1 --	----	----
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	300	**50** ± 30	<40 --	**80** ± 30	----	----
EP035G: Total Phenol by Discrete Analyser										
Phenols (Total)	EP035SF	1	mg/kg	----	28.8	<1	<1	<1	----	----
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1	<0.1	<0.1	----	----
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	50	<5.00	<5.00	<5.00	----	----

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class II - Table 3 Contaminant threshold (CT2) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	**MW2_0-0.5** 28-Jul-2022 11:00 **EP2209615-016** MU	**MW2_3-3.5** 28-Jul-2022 11:00 **EP2209615-017** MU	**QC101** 29-Jul-2022 15:00 **EP2209615-018** MU	**MW1_4.0-4.5** 28-Jul-2022 11:20 **EP2209615-019** MU	**MW2_4.5-5.0** 28-Jul-2022 12:35 **EP2209615-020** MU
Sample ID										
Sampling date/time										
EP070: Total Petroleum Hydrocarbons - Speciation										
Aliphatic C16-C35	EP070	100	mg/kg	----	28000	<100	<100	<100	----	----
Aromatic C16-C35	EP070	90	mg/kg	----	450	<90	<90	<90	----	----
EP074A: Monocyclic Aromatic Hydrocarbons										
Styrene	EP074	0.5	mg/kg	----	6	<0.5	<0.5	<0.5	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	5	<0.5	<0.5	<0.5	----	----
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	100	<0.5	<0.5	<0.5	----	----
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP080	10	mg/kg	----	2800	<10	<10	<10	----	----
EP080: BTEXN										
Benzene	EP080	0.2	mg/kg	----	0.2	<0.2	<0.2	<0.2	----	----
Toluene	EP080	0.5	mg/kg	----	160	<0.5	<0.5	<0.5	----	----
Ethylbenzene	EP080	0.5	mg/kg	----	60	<0.5	<0.5	<0.5	----	----
EP202A: Phenoxyacetic Acid Herbicides by LCMS										
2.4-D	EP202	0.02	mg/kg	----	0.02	<0.02	<0.02	<0.02	----	----

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class III - Table 3 Contaminant threshold (CT3) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	**MW2_0-0.5** 28-Jul-2022 11:00 **EP2209615-016** MU	**MW2_3-3.5** 28-Jul-2022 11:00 **EP2209615-017** MU	**QC101** 29-Jul-2022 15:00 **EP2209615-018** MU	**MW1_4.0-4.5** 28-Jul-2022 11:20 **EP2209615-019** MU	**MW2_4.5-5.0** 28-Jul-2022 12:35 **EP2209615-020** MU
Sample ID / *Sampling date/time*										
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	100000	**3160** ± 440	**1840** ± 250	**860** ± 120	----	----
Arsenic	EG005T	5	mg/kg	----	140	<5 --	**7** ± 0.7	<5 --	----	----
Barium	EG005T	10	mg/kg	----	100000	**30** ± 2	<10 --	<10 --	----	----
Beryllium	EG005T	1	mg/kg	----	20	<1	<1	<1	----	----
Boron	EG005T	50	mg/kg	----	100000	<50 --	<50 --	<50 --	----	----
Cobalt	EG005T	2	mg/kg	----	100000	**3** ± 0.3	<2 --	<2 --	----	----
Copper	EG005T	5	mg/kg	----	100000	<5 --	<5 --	<5 --	----	----
Manganese	EG005T	5	mg/kg	----	100000	**130** ± 20	**91** ± 14	**16** ± 2	----	----
Molybdenum	EG005T	2	mg/kg	----	100	<2	<2	<2	----	----
Nickel	EG005T	2	mg/kg	----	40	**2** ± 0.3	<2 --	<2 --	----	----
Silver	EG005T	2	mg/kg	----	200	<2	<2	<2	----	----
Vanadium	EG005T	5	mg/kg	----	100000	**15** ± 1	**12** ± 1	<5 --	----	----
Zinc	EG005T	5	mg/kg	----	100000	<5 --	<5 --	**10** ± 1	----	----
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	4	<0.1	<0.1	<0.1	----	----
Lead	EG020T	0.1	mg/kg	----	20	**2.9**	**1.5**	**7.5**	----	----
Selenium	EG020T	1	mg/kg	----	20	<1	<1	<1	----	----
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	2	<0.1 --	<0.1 --	<0.1 --	----	----
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	100	<0.5	<0.5	<0.5	----	----
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	160	<1	<1	<1	----	----
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	70	<1 --	<1 --	<1 --	----	----
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	3000	**50** ± 30	<40 --	**80** ± 30	----	----
EP035G: Total Phenol by Discrete Analyser										
Phenols (Total)	EP035SF	1	mg/kg	----	288	<1	<1	<1	----	----
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1	<0.1	<0.1	----	----
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	50	<5.00	<5.00	<5.00	----	----

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class III - Table 3 Contaminant threshold (CT3) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	**MW2_0-0.5** 28-Jul-2022 11:00 **EP2209615-016** MU	**MW2_3-3.5** 28-Jul-2022 11:00 **EP2209615-017** MU	**QC101** 29-Jul-2022 15:00 **EP2209615-018** MU	**MW1_4.0-4.5** 28-Jul-2022 11:20 **EP2209615-019** MU	**MW2_4.5-5.0** 28-Jul-2022 12:35 **EP2209615-020** MU
Sample ID										
Sampling date/time										
EP070: Total Petroleum Hydrocarbons - Speciation										
Aliphatic C16-C35	EP070	100	mg/kg	----	280000	<100	<100	<100	----	----
Aromatic C16-C35	EP070	90	mg/kg	----	4500	<90	<90	<90	----	----
EP074A: Monocyclic Aromatic Hydrocarbons										
Styrene	EP074	0.5	mg/kg	----	60	<0.5	<0.5	<0.5	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	50	<0.5	<0.5	<0.5	----	----
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	1000	<0.5	<0.5	<0.5	----	----
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP080	10	mg/kg	----	28000	<10	<10	<10	----	----
EP080: BTEXN										
Benzene	EP080	0.2	mg/kg	----	2	<0.2	<0.2	<0.2	----	----
Toluene	EP080	0.5	mg/kg	----	1600	<0.5	<0.5	<0.5	----	----
Ethylbenzene	EP080	0.5	mg/kg	----	600	<0.5	<0.5	<0.5	----	----
Total Xylenes	EP080	0.5	mg/kg	----	1200	<0.5	<0.5	<0.5	----	----
EP202A: Phenoxyacetic Acid Herbicides by LCMS										
2.4-D	EP202	0.02	mg/kg	----	0.2	<0.02	<0.02	<0.02	----	----

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class IV - Table 3 Contaminant threshold (CT4) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	**MW2_0-0.5** 28-Jul-2022 11:00 **EP2209615-016** MU	**MW2_3-3.5** 28-Jul-2022 11:00 **EP2209615-017** MU	**QC101** 29-Jul-2022 15:00 **EP2209615-018** MU	**MW1_4.0-4.5** 28-Jul-2022 11:20 **EP2209615-019** MU	**MW2_4.5-5.0** 28-Jul-2022 12:35 **EP2209615-020** MU
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	200000	**3160** ± 440	**1840** ± 250	**860** ± 120	----	----
Arsenic	EG005T	5	mg/kg	----	1400	<5 --	**7** ± 0.7	<5 --	----	----
Barium	EG005T	10	mg/kg	----	200000	**30** ± 2	<10 --	<10 --	----	----
Beryllium	EG005T	1	mg/kg	----	200	<1	<1	<1	----	----
Boron	EG005T	50	mg/kg	----	200000	<50 --	<50 --	<50 --	----	----
Cobalt	EG005T	2	mg/kg	----	200000	**3** ± 0.3	<2 --	<2 --	----	----
Copper	EG005T	5	mg/kg	----	200000	<5 --	<5 --	<5 --	----	----
Manganese	EG005T	5	mg/kg	----	200000	**130** ± 20	**91** ± 14	**16** ± 2	----	----
Molybdenum	EG005T	2	mg/kg	----	1000	<2	<2	<2	----	----
Nickel	EG005T	2	mg/kg	----	400	**2** ± 0.3	<2 --	<2 --	----	----
Silver	EG005T	2	mg/kg	----	2000	<2	<2	<2	----	----
Vanadium	EG005T	5	mg/kg	----	200000	**15** ± 1	**12** ± 1	<5 --	----	----
Zinc	EG005T	5	mg/kg	----	200000	<5 --	<5 --	**10** ± 1	----	----
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	40	<0.1	<0.1	<0.1	----	----
Lead	EG020T	0.1	mg/kg	----	200	**2.9**	**1.5**	**7.5**	----	----
Selenium	EG020T	1	mg/kg	----	200	<1	<1	<1	----	----
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	20	<0.1 --	<0.1 --	<0.1 --	----	----
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	1000	<0.5	<0.5	<0.5	----	----
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	1600	<1	<1	<1	----	----
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	700	<1 --	<1 --	<1 --	----	----
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	30000	**50** ± 30	<40 --	**80** ± 30	----	----
EP035G: Total Phenol by Discrete Analyser										
Phenols (Total)	EP035SF	1	mg/kg	----	2880	<1	<1	<1	----	----
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1	<0.1	<0.1	----	----
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	50	<5.00	<5.00	<5.00	----	----

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class IV - Table 3 Contaminant threshold (CT4) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	**MW2_0-0.5** 28-Jul-2022 11:00 **EP2209615-016** MU	**MW2_3-3.5** 28-Jul-2022 11:00 **EP2209615-017** MU	**QC101** 29-Jul-2022 15:00 **EP2209615-018** MU	**MW1_4.0-4.5** 28-Jul-2022 11:20 **EP2209615-019** MU	**MW2_4.5-5.0** 28-Jul-2022 12:35 **EP2209615-020** MU
EP070: Total Petroleum Hydrocarbons - Speciation										
Aromatic C16-C35	EP070	90	mg/kg	----	18000	<90	<90	<90	----	----
EP074A: Monocyclic Aromatic Hydrocarbons										
Styrene	EP074	0.5	mg/kg	----	600	<0.5	<0.5	<0.5	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	200	<0.5	<0.5	<0.5	----	----
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	4000	<0.5	<0.5	<0.5	----	----
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP080	10	mg/kg	----	112000	<10	<10	<10	----	----
EP080: BTEXN										
Benzene	EP080	0.2	mg/kg	----	20	<0.2	<0.2	<0.2	----	----
Toluene	EP080	0.5	mg/kg	----	16000	<0.5	<0.5	<0.5	----	----
Ethylbenzene	EP080	0.5	mg/kg	----	6000	<0.5	<0.5	<0.5	----	----
Total Xylenes	EP080	0.5	mg/kg	----	12000	<0.5	<0.5	<0.5	----	----
EP202A: Phenoxyacetic Acid Herbicides by LCMS										
2.4-D	EP202	0.02	mg/kg	----	2	<0.02	<0.02	<0.02	----	----

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (As amended December 2019): Class 4 - Table 4 Concentration limit (CL4) values for waste classification

Sub-Matrix: **SOIL**

				Sample ID		MW2_0-0.5	MW2_3-3.5	QC101	MW1_4.0-4.5	MW2_4.5-5.0
				Sampling date/time		28-Jul-2022 11:00	28-Jul-2022 11:00	29-Jul-2022 15:00	28-Jul-2022 11:20	28-Jul-2022 12:35
Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	EP2209615-016 MU	EP2209615-017 MU	EP2209615-018 MU	EP2209615-019 MU	EP2209615-020 MU
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	200000	**3160** ± 440	**1840** ± 250	**860** ± 120	----	----
Arsenic	EG005T	5	mg/kg	----	20000	<5 --	**7** ± 0.7	<5 --	----	----
Barium	EG005T	10	mg/kg	----	200000	**30** ± 2	<10 --	<10 --	----	----
Beryllium	EG005T	1	mg/kg	----	4000	<1	<1	<1	----	----
Boron	EG005T	50	mg/kg	----	200000	<50 --	<50 --	<50 --	----	----
Cobalt	EG005T	2	mg/kg	----	200000	**3** ± 0.3	<2 --	<2 --	----	----
Copper	EG005T	5	mg/kg	----	200000	<5 --	<5 --	<5 --	----	----
Manganese	EG005T	5	mg/kg	----	200000	**130** ± 20	**91** ± 14	**16** ± 2	----	----
Molybdenum	EG005T	2	mg/kg	----	40000	<2	<2	<2	----	----
Nickel	EG005T	2	mg/kg	----	120000	**2** ± 0.3	<2 --	<2 --	----	----
Silver	EG005T	2	mg/kg	----	7200	<2	<2	<2	----	----
Vanadium	EG005T	5	mg/kg	----	200000	**15** ± 1	**12** ± 1	<5 --	----	----
Zinc	EG005T	5	mg/kg	----	200000	<5 --	<5 --	**10** ± 1	----	----
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	4000	<0.1	<0.1	<0.1	----	----
Lead	EG020T	0.1	mg/kg	----	60000	**2.9**	**1.5**	**7.5**	----	----
Selenium	EG020T	1	mg/kg	----	2000	<1	<1	<1	----	----
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	3000	<0.1 --	<0.1 --	<0.1 --	----	----
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	2000	<0.5	<0.5	<0.5	----	----
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	100000	<1	<1	<1	----	----
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	50000	<1 --	<1 --	<1 --	----	----
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	400000	**50** ± 30	<40 --	**80** ± 30	----	----
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	50	<0.1	<0.1	<0.1	----	----
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	50	<5.00	<5.00	<5.00	----	----
EP070: Total Petroleum Hydrocarbons - Speciation										
Aromatic C16-C35	EP070	90	mg/kg	----	18000	<90	<90	<90	----	----
EP074A: Monocyclic Aromatic Hydrocarbons										

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (As amended December 2019): Class 4 - Table 4 Concentration limit (CL4) values for waste classification

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* / *Sampling date/time*	**MW2_0-0.5** 28-Jul-2022 11:00	**MW2_3-3.5** 28-Jul-2022 11:00	**QC101** 29-Jul-2022 15:00	**MW1_4.0-4.5** 28-Jul-2022 11:20	**MW2_4.5-5.0** 28-Jul-2022 12:35
							EP2209615-016 MU	**EP2209615-017** MU	**EP2209615-018** MU	**EP2209615-019** MU	**EP2209615-020** MU
EP074A: Monocyclic Aromatic Hydrocarbons - Continued											
Styrene	EP074	0.5	mg/kg	----	4320		<0.5	<0.5	<0.5	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	200		<0.5	<0.5	<0.5	----	----
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	4000		<0.5	<0.5	<0.5	----	----
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP080	10	mg/kg	----	112000		<10	<10	<10	----	----
EP080: BTEXN											
Benzene	EP080	0.2	mg/kg	----	720		<0.2	<0.2	<0.2	----	----
EP202A: Phenoxyacetic Acid Herbicides by LCMS											
2.4-D	EP202	0.02	mg/kg	----	5760		<0.02	<0.02	<0.02	----	----

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 1 - Table 4 Concentration limit (CL1) values for waste classification

Sub-Matrix: **SOIL**

				Sample ID	Guideline	Guideline	**QC102**	----	----	----	----
				Sampling date/time			28-Jul-2022 15:00	----	----	----	----
Compound	*Method*	*LOR*	*Unit*		Lower Limit	Upper Limit	**EP2209615-026** MU				
EG005(ED093)T: Total Metals by ICP-AES											
Aluminium	EG005T	50	mg/kg		----	----	----	----	----	----	----
Arsenic	EG005T	5	mg/kg		----	----	----	----	----	----	----
Barium	EG005T	10	mg/kg		----	----	----	----	----	----	----
Beryllium	EG005T	1	mg/kg		----	----	----	----	----	----	----
Boron	EG005T	50	mg/kg		----	----	----	----	----	----	----
Cobalt	EG005T	2	mg/kg		----	----	----	----	----	----	----
Copper	EG005T	5	mg/kg		----	----	----	----	----	----	----
Manganese	EG005T	5	mg/kg		----	----	----	----	----	----	----
Molybdenum	EG005T	2	mg/kg		----	----	----	----	----	----	----
Nickel	EG005T	2	mg/kg		----	----	----	----	----	----	----
Silver	EG005T	2	mg/kg		----	----	----	----	----	----	----
Vanadium	EG005T	5	mg/kg		----	----	----	----	----	----	----
Zinc	EG005T	5	mg/kg		----	----	----	----	----	----	----
EG020T: Total Metals by ICP-MS											
Cadmium	EG020T	0.1	mg/kg		----	----	----	----	----	----	----
Lead	EG020T	0.1	mg/kg		----	----	----	----	----	----	----
Selenium	EG020T	1	mg/kg		----	----	----	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg		----	----	----	----	----	----	----
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg		----	----	----	----	----	----	----
EK026SF: Total CN by Segmented Flow Analyser											
Total Cyanide	EK026SF	1	mg/kg		----	----	----	----	----	----	----
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser											
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg		----	----	----	----	----	----	----
EK040T: Fluoride Total											
Fluoride	EK040T	40	mg/kg		----	----	----	----	----	----	----
EP035G: Total Phenol by Discrete Analyser											
Phenols (Total)	EP035SF	1	mg/kg		----	----	----	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)											
Total Polychlorinated biphenyls	EP066	0.1	mg/kg		----	----	----	----	----	----	----
EP068A: Organochlorine Pesticides (OC)											
Total OCP	EP068	5.00	mg/kg		----	----	----	----	----	----	----
EP070: Total Petroleum Hydrocarbons - Speciation											

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 1 - Table 4 Concentration limit (CL1) values for waste classification

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	*Sample ID* / *Sampling date/time*	Guideline Lower Limit	Guideline Upper Limit	**QC102** 28-Jul-2022 15:00 **EP2209615-026** MU	----	----	----	----
EP070: Total Petroleum Hydrocarbons - Speciation - Continued											
Aliphatic C16-C35	EP070	100	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Aromatic C16-C35	EP070	90	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP074A: Monocyclic Aromatic Hydrocarbons											
Styrene	EP074	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP080	10	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP080: BTEXN											
Benzene	EP080	0.2	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Ethylbenzene	EP080	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Toluene	EP080	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Total Xylenes	EP080	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP202A: Phenoxyacetic Acid Herbicides by LCMS											
2.4-D	EP202	0.02	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 2 - Table 4 Concentration limit (CL2) values for waste classification

Sub-Matrix: **SOIL**

				Sample ID	Guideline	Guideline	**QC102**	----	----	----	----
				Sampling date/time			28-Jul-2022 15:00	----	----	----	----
Compound	*Method*	*LOR*	*Unit*		Lower Limit	Upper Limit	**EP2209615-026** MU				
EG005(ED093)T: Total Metals by ICP-AES											
Aluminium	EG005T	50	mg/kg		----	----	----	----	----	----	----
Arsenic	EG005T	5	mg/kg		----	----	----	----	----	----	----
Barium	EG005T	10	mg/kg		----	----	----	----	----	----	----
Beryllium	EG005T	1	mg/kg		----	----	----	----	----	----	----
Boron	EG005T	50	mg/kg		----	----	----	----	----	----	----
Cobalt	EG005T	2	mg/kg		----	----	----	----	----	----	----
Copper	EG005T	5	mg/kg		----	----	----	----	----	----	----
Manganese	EG005T	5	mg/kg		----	----	----	----	----	----	----
Molybdenum	EG005T	2	mg/kg		----	----	----	----	----	----	----
Nickel	EG005T	2	mg/kg		----	----	----	----	----	----	----
Silver	EG005T	2	mg/kg		----	----	----	----	----	----	----
Vanadium	EG005T	5	mg/kg		----	----	----	----	----	----	----
Zinc	EG005T	5	mg/kg		----	----	----	----	----	----	----
EG020T: Total Metals by ICP-MS											
Cadmium	EG020T	0.1	mg/kg		----	----	----	----	----	----	----
Lead	EG020T	0.1	mg/kg		----	----	----	----	----	----	----
Selenium	EG020T	1	mg/kg		----	----	----	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg		----	----	----	----	----	----	----
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg		----	----	----	----	----	----	----
EK026SF: Total CN by Segmented Flow Analyser											
Total Cyanide	EK026SF	1	mg/kg		----	----	----	----	----	----	----
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser											
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg		----	----	----	----	----	----	----
EK040T: Fluoride Total											
Fluoride	EK040T	40	mg/kg		----	----	----	----	----	----	----
EP035G: Total Phenol by Discrete Analyser											
Phenols (Total)	EP035SF	1	mg/kg		----	----	----	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)											
Total Polychlorinated biphenyls	EP066	0.1	mg/kg		----	----	----	----	----	----	----
EP068A: Organochlorine Pesticides (OC)											
Total OCP	EP068	5.00	mg/kg		----	----	----	----	----	----	----
EP070: Total Petroleum Hydrocarbons - Speciation											

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 2 - Table 4 Concentration limit (CL2) values for waste classification

Sub-Matrix: **SOIL**

				Sample ID	Guideline	Guideline	QC102	----	----	----	----
				Sampling date/time			28-Jul-2022 15:00	----	----	----	----
Compound	*Method*	*LOR*	*Unit*		Lower Limit	Upper Limit	EP2209615-026 MU				
EP070: Total Petroleum Hydrocarbons - Speciation - Continued											
Aliphatic C16-C35	EP070	100	mg/kg		----	----	----	----	----	----	----
Aromatic C16-C35	EP070	90	mg/kg		----	----	----	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons											
Styrene	EP074	0.5	mg/kg		----	----	----	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg		----	----	----	----	----	----	----
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg		----	----	----	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP080	10	mg/kg		----	----	----	----	----	----	----
EP080: BTEXN											
Benzene	EP080	0.2	mg/kg		----	----	----	----	----	----	----
Ethylbenzene	EP080	0.5	mg/kg		----	----	----	----	----	----	----
Toluene	EP080	0.5	mg/kg		----	----	----	----	----	----	----
Total Xylenes	EP080	0.5	mg/kg		----	----	----	----	----	----	----
EP202A: Phenoxyacetic Acid Herbicides by LCMS											
2.4-D	EP202	0.02	mg/kg		----	----	----	----	----	----	----

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 3 - Table 4 Concentration limit (CL3) values for waste classification

Sub-Matrix: **SOIL**

				Sample ID	Guideline	Guideline	**QC102**	----	----	----	----
				Sampling date/time			28-Jul-2022 15:00	----	----	----	----
Compound	*Method*	*LOR*	*Unit*		Lower Limit	Upper Limit	**EP2209615-026** MU				
EG005(ED093)T: Total Metals by ICP-AES											
Aluminium	EG005T	50	mg/kg		----	----	----	----	----	----	----
Arsenic	EG005T	5	mg/kg		----	----	----	----	----	----	----
Barium	EG005T	10	mg/kg		----	----	----	----	----	----	----
Beryllium	EG005T	1	mg/kg		----	----	----	----	----	----	----
Boron	EG005T	50	mg/kg		----	----	----	----	----	----	----
Cobalt	EG005T	2	mg/kg		----	----	----	----	----	----	----
Copper	EG005T	5	mg/kg		----	----	----	----	----	----	----
Manganese	EG005T	5	mg/kg		----	----	----	----	----	----	----
Molybdenum	EG005T	2	mg/kg		----	----	----	----	----	----	----
Nickel	EG005T	2	mg/kg		----	----	----	----	----	----	----
Silver	EG005T	2	mg/kg		----	----	----	----	----	----	----
Vanadium	EG005T	5	mg/kg		----	----	----	----	----	----	----
Zinc	EG005T	5	mg/kg		----	----	----	----	----	----	----
EG020T: Total Metals by ICP-MS											
Cadmium	EG020T	0.1	mg/kg		----	----	----	----	----	----	----
Lead	EG020T	0.1	mg/kg		----	----	----	----	----	----	----
Selenium	EG020T	1	mg/kg		----	----	----	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg		----	----	----	----	----	----	----
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg		----	----	----	----	----	----	----
EK026SF: Total CN by Segmented Flow Analyser											
Total Cyanide	EK026SF	1	mg/kg		----	----	----	----	----	----	----
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser											
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg		----	----	----	----	----	----	----
EK040T: Fluoride Total											
Fluoride	EK040T	40	mg/kg		----	----	----	----	----	----	----
EP035G: Total Phenol by Discrete Analyser											
Phenols (Total)	EP035SF	1	mg/kg		----	----	----	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)											
Total Polychlorinated biphenyls	EP066	0.1	mg/kg		----	----	----	----	----	----	----
EP068A: Organochlorine Pesticides (OC)											
Total OCP	EP068	5.00	mg/kg		----	----	----	----	----	----	----
EP070: Total Petroleum Hydrocarbons - Speciation											

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class 3 - Table 4 Concentration limit (CL3) values for waste classification

Sub-Matrix: **SOIL**

				Sample ID	Guideline	Guideline	**QC102**	**----**	**----**	**----**	**----**
				Sampling date/time			28-Jul-2022 15:00	----	----	----	----
Compound	*Method*	*LOR*	*Unit*		Lower Limit	Upper Limit	**EP2209615-026** MU				
EP070: Total Petroleum Hydrocarbons - Speciation - Continued											
Aliphatic C16-C35	EP070	100	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Aromatic C16-C35	EP070	90	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP074A: Monocyclic Aromatic Hydrocarbons											
Styrene	EP074	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP080	10	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP080: BTEXN											
Benzene	EP080	0.2	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Ethylbenzene	EP080	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Toluene	EP080	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Total Xylenes	EP080	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP202A: Phenoxyacetic Acid Herbicides by LCMS											
2.4-D	EP202	0.02	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class I - Table 3 Contaminant threshold (CT1) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	**QC102**	**----**	**----**	**----**	**----**
			Sampling date/time			28-Jul-2022 15:00	----	----	----	----
			Sample ID			**EP2209615-026** MU				
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Arsenic	EG005T	5	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Barium	EG005T	10	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Beryllium	EG005T	1	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Boron	EG005T	50	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Cobalt	EG005T	2	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Copper	EG005T	5	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Manganese	EG005T	5	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Molybdenum	EG005T	2	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Nickel	EG005T	2	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Silver	EG005T	2	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Vanadium	EG005T	5	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Zinc	EG005T	5	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Lead	EG020T	0.1	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Selenium	EG020T	1	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EP035G: Total Phenol by Discrete Analyser										
Phenols (Total)	EP035SF	1	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class I - Table 3 Contaminant threshold (CT1) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	**QC102** 28-Jul-2022 15:00 **EP2209615-026** MU	----	----	----	----
Sample ID						**QC102**	**----**	**----**	**----**	**----**
Sampling date/time						28-Jul-2022 15:00	----	----	----	----
EP070: Total Petroleum Hydrocarbons - Speciation										
Aliphatic C16-C35	EP070	100	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Aromatic C16-C35	EP070	90	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EP074A: Monocyclic Aromatic Hydrocarbons										
Styrene	EP074	0.5	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP080	10	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EP080: BTEXN										
Benzene	EP080	0.2	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Ethylbenzene	EP080	0.5	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Toluene	EP080	0.5	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EP202A: Phenoxyacetic Acid Herbicides by LCMS										
2.4-D	EP202	0.02	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class II - Table 3 Contaminant threshold (CT2) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	*Sample ID*	Guideline Lower Limit	Guideline Upper Limit	**QC102**	----	----	----	----
				Sampling date/time			28-Jul-2022 15:00	----	----	----	----
							EP2209615-026 MU				
EG005(ED093)T: Total Metals by ICP-AES											
Aluminium	EG005T	50	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Arsenic	EG005T	5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Barium	EG005T	10	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Beryllium	EG005T	1	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Boron	EG005T	50	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Cobalt	EG005T	2	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Copper	EG005T	5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Manganese	EG005T	5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Molybdenum	EG005T	2	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Nickel	EG005T	2	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Silver	EG005T	2	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Vanadium	EG005T	5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Zinc	EG005T	5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EG020T: Total Metals by ICP-MS											
Cadmium	EG020T	0.1	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Lead	EG020T	0.1	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Selenium	EG020T	1	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EK026SF: Total CN by Segmented Flow Analyser											
Total Cyanide	EK026SF	1	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser											
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EK040T: Fluoride Total											
Fluoride	EK040T	40	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP035G: Total Phenol by Discrete Analyser											
Phenols (Total)	EP035SF	1	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP066: Polychlorinated Biphenyls (PCB)											
Total Polychlorinated biphenyls	EP066	0.1	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP068A: Organochlorine Pesticides (OC)											
Total OCP	EP068	5.00	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class II - Table 3 Contaminant threshold (CT2) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* **QC102**	----	----	----	----
						Sampling date/time 28-Jul-2022 15:00	----	----	----	----
						EP2209615-026 MU				
EP070: Total Petroleum Hydrocarbons - Speciation										
Aliphatic C16-C35	EP070	100	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Aromatic C16-C35	EP070	90	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EP074A: Monocyclic Aromatic Hydrocarbons										
Styrene	EP074	0.5	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons										
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EP080/071: Total Petroleum Hydrocarbons										
C6 - C9 Fraction	EP080	10	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EP080: BTEXN										
Benzene	EP080	0.2	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Ethylbenzene	EP080	0.5	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Toluene	EP080	0.5	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EP202A: Phenoxyacetic Acid Herbicides by LCMS										
2.4-D	EP202	0.02	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class III - Table 3 Contaminant threshold (CT3) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	*Sample ID*	Guideline Lower Limit	Guideline Upper Limit	**QC102**	----	----	----	----
				Sampling date/time			28-Jul-2022 15:00	----	----	----	----
							EP2209615-026 MU				
EG005(ED093)T: Total Metals by ICP-AES											
Aluminium	EG005T	50	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Arsenic	EG005T	5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Barium	EG005T	10	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Beryllium	EG005T	1	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Boron	EG005T	50	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Cobalt	EG005T	2	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Copper	EG005T	5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Manganese	EG005T	5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Molybdenum	EG005T	2	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Nickel	EG005T	2	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Silver	EG005T	2	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Vanadium	EG005T	5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Zinc	EG005T	5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EG020T: Total Metals by ICP-MS											
Cadmium	EG020T	0.1	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Lead	EG020T	0.1	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Selenium	EG020T	1	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EK026SF: Total CN by Segmented Flow Analyser											
Total Cyanide	EK026SF	1	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser											
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EK040T: Fluoride Total											
Fluoride	EK040T	40	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP035G: Total Phenol by Discrete Analyser											
Phenols (Total)	EP035SF	1	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP066: Polychlorinated Biphenyls (PCB)											
Total Polychlorinated biphenyls	EP066	0.1	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP068A: Organochlorine Pesticides (OC)											
Total OCP	EP068	5.00	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class III - Table 3 Contaminant threshold (CT3) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	*Sample ID* / *Sampling date/time*	Guideline Lower Limit	Guideline Upper Limit	**QC102** 28-Jul-2022 15:00 **EP2209615-026** MU	----	----	----	----
EP070: Total Petroleum Hydrocarbons - Speciation											
Aliphatic C16-C35	EP070	100	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Aromatic C16-C35	EP070	90	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP074A: Monocyclic Aromatic Hydrocarbons											
Styrene	EP074	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP080	10	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP080: BTEXN											
Benzene	EP080	0.2	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Ethylbenzene	EP080	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Toluene	EP080	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Total Xylenes	EP080	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP202A: Phenoxyacetic Acid Herbicides by LCMS											
2.4-D	EP202	0.02	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class IV - Table 3 Contaminant threshold (CT4) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	Guideline Lower Limit	Guideline Upper Limit	*Sample ID* **QC102**	----	----	----	----
						Sampling date/time 28-Jul-2022 15:00	----	----	----	----
						EP2209615-026 MU				
EG005(ED093)T: Total Metals by ICP-AES										
Aluminium	EG005T	50	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Arsenic	EG005T	5	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Barium	EG005T	10	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Beryllium	EG005T	1	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Boron	EG005T	50	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Cobalt	EG005T	2	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Copper	EG005T	5	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Manganese	EG005T	5	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Molybdenum	EG005T	2	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Nickel	EG005T	2	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Silver	EG005T	2	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Vanadium	EG005T	5	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Zinc	EG005T	5	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EG020T: Total Metals by ICP-MS										
Cadmium	EG020T	0.1	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Lead	EG020T	0.1	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
Selenium	EG020T	1	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EG035T: Total Recoverable Mercury by FIMS										
Mercury	EG035T	0.1	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EG048: Hexavalent Chromium (Alkaline Digest)										
Hexavalent Chromium	EG048G	0.5	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EK026SF: Total CN by Segmented Flow Analyser										
Total Cyanide	EK026SF	1	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser										
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EK040T: Fluoride Total										
Fluoride	EK040T	40	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EP035G: Total Phenol by Discrete Analyser										
Phenols (Total)	EP035SF	1	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EP066: Polychlorinated Biphenyls (PCB)										
Total Polychlorinated biphenyls	EP066	0.1	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**
EP068A: Organochlorine Pesticides (OC)										
Total OCP	EP068	5.00	mg/kg	----	----	**----**	**----**	**----**	**----**	**----**

Table 3 CT Values

WA DWER Landfill Waste Classification and Waste Definitions 1996 (as amended December 2019): Class IV - Table 3 Contaminant threshold (CT4) values for waste not requiring leachate

Sub-Matrix: **SOIL**

Compound	*Method*	*LOR*	*Unit*	*Sample ID* / *Sampling date/time*	Guideline Lower Limit	Guideline Upper Limit	**QC102** 28-Jul-2022 15:00 **EP2209615-026** MU	----	----	----	----
EP070: Total Petroleum Hydrocarbons - Speciation											
Aromatic C16-C35	EP070	90	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP074A: Monocyclic Aromatic Hydrocarbons											
Styrene	EP074	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP080	10	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP080: BTEXN											
Benzene	EP080	0.2	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Ethylbenzene	EP080	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Toluene	EP080	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Total Xylenes	EP080	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP202A: Phenoxyacetic Acid Herbicides by LCMS											
2.4-D	EP202	0.02	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (As amended December 2019): Class 4 - Table 4 Concentration limit (CL4) values for waste classification

Sub-Matrix: **SOIL**

				Sample ID	Guideline	Guideline	QC102	----	----	----	----
				Sampling date/time			28-Jul-2022 15:00	----	----	----	----
Compound	*Method*	*LOR*	*Unit*		Lower Limit	Upper Limit	EP2209615-026 MU				
EG005(ED093)T: Total Metals by ICP-AES											
Aluminium	EG005T	50	mg/kg		----	----	----	----	----	----	----
Arsenic	EG005T	5	mg/kg		----	----	----	----	----	----	----
Barium	EG005T	10	mg/kg		----	----	----	----	----	----	----
Beryllium	EG005T	1	mg/kg		----	----	----	----	----	----	----
Boron	EG005T	50	mg/kg		----	----	----	----	----	----	----
Cobalt	EG005T	2	mg/kg		----	----	----	----	----	----	----
Copper	EG005T	5	mg/kg		----	----	----	----	----	----	----
Manganese	EG005T	5	mg/kg		----	----	----	----	----	----	----
Molybdenum	EG005T	2	mg/kg		----	----	----	----	----	----	----
Nickel	EG005T	2	mg/kg		----	----	----	----	----	----	----
Silver	EG005T	2	mg/kg		----	----	----	----	----	----	----
Vanadium	EG005T	5	mg/kg		----	----	----	----	----	----	----
Zinc	EG005T	5	mg/kg		----	----	----	----	----	----	----
EG020T: Total Metals by ICP-MS											
Cadmium	EG020T	0.1	mg/kg		----	----	----	----	----	----	----
Lead	EG020T	0.1	mg/kg		----	----	----	----	----	----	----
Selenium	EG020T	1	mg/kg		----	----	----	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS											
Mercury	EG035T	0.1	mg/kg		----	----	----	----	----	----	----
EG048: Hexavalent Chromium (Alkaline Digest)											
Hexavalent Chromium	EG048G	0.5	mg/kg		----	----	----	----	----	----	----
EK026SF: Total CN by Segmented Flow Analyser											
Total Cyanide	EK026SF	1	mg/kg		----	----	----	----	----	----	----
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser											
Weak Acid Dissociable Cyanide	EK028SF	1	mg/kg		----	----	----	----	----	----	----
EK040T: Fluoride Total											
Fluoride	EK040T	40	mg/kg		----	----	----	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)											
Total Polychlorinated biphenyls	EP066	0.1	mg/kg		----	----	----	----	----	----	----
EP068A: Organochlorine Pesticides (OC)											
Total OCP	EP068	5.00	mg/kg		----	----	----	----	----	----	----
EP070: Total Petroleum Hydrocarbons - Speciation											
Aromatic C16-C35	EP070	90	mg/kg		----	----	----	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons											

Table 4: CL values for waste classification

WA DWER Landfill Waste Classification and Waste Definitions 1996 (As amended December 2019): Class 4 - Table 4 Concentration limit (CL4) values for waste classification

Sub-Matrix: **SOIL**

				Sample ID	Guideline	Guideline	**QC102**	**----**	**----**	**----**	**----**
				Sampling date/time			28-Jul-2022 15:00	----	----	----	----
Compound	*Method*	*LOR*	*Unit*		Lower Limit	Upper Limit	**EP2209615-026** MU				
EP074A: Monocyclic Aromatic Hydrocarbons - Continued											
Styrene	EP074	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons											
Benzo(a)pyrene	EP075(SIM)	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
Sum of polycyclic aromatic hydrocarbons	EP075(SIM)	0.5	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP080/071: Total Petroleum Hydrocarbons											
C6 - C9 Fraction	EP080	10	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP080: BTEXN											
Benzene	EP080	0.2	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**
EP202A: Phenoxyacetic Acid Herbicides by LCMS											
2.4-D	EP202	0.02	mg/kg		----	----	**----**	**----**	**----**	**----**	**----**

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	BH01_0-0.5 - 28-Jul-2022 00:00	Soil sample.
EA200: Description	BH01_2.5-3.0 - 28-Jul-2022 00:00	Soil sample.
EA200: Description	BH02_0-0.1 - 28-Jul-2022 00:00	Soil sample.
EA200: Description	BH02_2.5-3.0 - 28-Jul-2022 00:00	Soil sample.
EA200: Description	BH03_0.5-1.0 - 28-Jul-2022 00:00	Soil sample.
EA200: Description	BH03_2.0-2.5 - 28-Jul-2022 00:00	Soil sample.
EA200: Description	BH04_0-0.5 - 28-Jul-2022 00:00	Soil sample.
EA200: Description	BH04_2.5-3.0 - 28-Jul-2022 00:00	Soil sample.
EA200: Description	BH05_0-0.5 - 29-Jul-2022 00:00	Soil sample.
EA200: Description	BH06_0.5-1.0 - 29-Jul-2022 00:00	Soil sample.
EA200: Description	BH06_2.5-3.0 - 29-Jul-2022 00:00	Soil sample.
EA200: Description	BH07_0.5-1.0 - 29-Jul-2022 08:55	Soil sample.
EA200: Description	BH07_2.5-3.0 - 29-Jul-2022 08:55	Soil sample.
EA200: Description	MW1_0-0.5 - 28-Jul-2022 11:00	Soil sample.
EA200: Description	MW1_3-3.5 - 28-Jul-2022 11:00	Soil sample.
EA200: Description	MW2_0-0.5 - 28-Jul-2022 11:00	Soil sample.
EA200: Description	MW2_3-3.5 - 28-Jul-2022 11:00	Soil sample.
EA200: Description	QC101 - 29-Jul-2022 00:00	Soil sample.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EP2209615**	Page	: 1 of 30
Client	: **AURECON AUSTRALASIA PTY LTD**	Laboratory	: Environmental Division Perth
Contact	: Nathan Seaver	Contact	: Tyler Anderson
Address	: 1/256 ADELAIDE TC PERTH WA, AUSTRALIA 6000	Address	: 26 Rigali Way Wangara Western Australia Australia 6065
Telephone	: ----	Telephone	: +61 2 8784 8555
Project	: Bunbry Quantem Terminal	Date Samples Received	: 29-Jul-2022
Order number	: ----	Date Analysis Commenced	: 02-Aug-2022
C-O-C number	: ----	Issue Date	: 17-Aug-2022
Sampler	: ALI ANWAR		
Site	: ----		
Quote number	: EN/057 - Primary work only		
No. of samples received	: 26		
No. of samples analysed	: 26		

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

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, 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*
Alana Smylie	Team Leader - Asbestos	Newcastle - Asbestos, Mayfield West, NSW
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Canhuang Ke	Inorganics Supervisor	Perth Inorganics, Wangara, Western Australia
Daniel Fisher	Inorganics Analyst	Perth ASS, Wangara, Western Australia
Daniel Fisher	Inorganics Analyst	Perth Inorganics, Wangara, Western Australia
David Viner	SENIOR LAB TECH	Perth Organics, Wangara, Western Australia
Franco Lentini	LCMS Coordinator	Sydney Organics, Smithfield, NSW
Jarwis Nheu	Non-Metals Team Leader	Melbourne Inorganics, Springvale, VIC
Thomas Donovan	Senior Organic Chemist	Perth Organics, Wangara, Western Australia

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: 4505371)									
EP2209615-001	BH01_0-0.5	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	30	30	0.0	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.0	No Limit
		EG005T: Silver	7440-22-4	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: Manganese	7439-96-5	5	mg/kg	43	46	7.1	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	30	35	14.7	No Limit
		EG005T: Aluminium	7429-90-5	50	mg/kg	670	640	4.2	0% - 50%
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
EP2209615-011	BH06_2.5-3.0	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	20	20	0.0	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	<2	2	0.0	No Limit
		EG005T: Molybdenum	7439-98-7	2	mg/kg	2	3	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	2	0.0	No Limit
		EG005T: Silver	7440-22-4	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: Manganese	7439-96-5	5	mg/kg	97	97	0.0	0% - 50%
		EG005T: Vanadium	7440-62-2	5	mg/kg	13	14	13.8	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<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 (%)*
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 4505371) - continued									
EP2209615-011	BH06_2.5-3.0	EG005T: Aluminium	7429-90-5	50	mg/kg	2600	# 3310	24.2	0% - 20%
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
EP035SF: Total Phenol by Segmented Flow Analyser (QC Lot: 4506007)									
EP2209615-014	MW1_0-0.5	EP035SF: Phenols (Total)	----	1	mg/kg	<1	<1	0.0	No Limit
EP035SF: Total Phenol by Segmented Flow Analyser (QC Lot: 4510912)									
EP2209615-001	BH01_0-0.5	EP035SF: Phenols (Total)	----	1	mg/kg	<1	<1	0.0	No Limit
EP2209615-010	BH06_0.5-1.0	EP035SF: Phenols (Total)	----	1	mg/kg	<1	<1	0.0	No Limit
EA002: pH 1:5 (Soils) (QC Lot: 4504077)									
EP2209568-001	Anonymous	EA002: pH Value	----	0.1	pH Unit	11.8	11.8	0.0	0% - 20%
EP2209568-027	Anonymous	EA002: pH Value	----	0.1	pH Unit	11.6	11.6	0.0	0% - 20%
EA002: pH 1:5 (Soils) (QC Lot: 4504078)									
EP2209615-011	BH06_2.5-3.0	EA002: pH Value	----	0.1	pH Unit	8.3	8.3	0.0	0% - 20%
EA029-A: pH Measurements (QC Lot: 4505540)									
EP2209615-001	BH01_0-0.5	EA029: pH KCl (23A)	----	0.1	pH Unit	9.6	9.6	0.0	0% - 20%
		EA029: pH OX (23B)	----	0.1	pH Unit	7.8	8.1	3.5	0% - 20%
EP2209615-011	BH06_2.5-3.0	EA029: pH KCl (23A)	----	0.1	pH Unit	9.1	9.1	0.0	0% - 20%
		EA029: pH OX (23B)	----	0.1	pH Unit	8.3	8.3	0.0	0% - 20%
EA029-B: Acidity Trail (QC Lot: 4505540)									
EP2209615-001	BH01_0-0.5	EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.005	<0.005	0.0	No Limit
		EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	<0.005	<0.005	0.0	No Limit
		EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	<0.005	<0.005	0.0	No Limit
		EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	<2	0.0	No Limit
		EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	<2	<2	0.0	No Limit
		EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	<2	<2	0.0	No Limit
EP2209615-011	BH06_2.5-3.0	EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.005	<0.005	0.0	No Limit
		EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	<0.005	<0.005	0.0	No Limit
		EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	<0.005	<0.005	0.0	No Limit
		EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	<2	0.0	No Limit
		EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	<2	<2	0.0	No Limit
		EA029: Titratable Sulfidic Acidity (23H)	----	2	mole H+ / t	<2	<2	0.0	No Limit
EA029-C: Sulfur Trail (QC Lot: 4505540)									
EP2209615-001	BH01_0-0.5	EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	0.006	0.007	0.0	No Limit
		EA029: Peroxide Sulfur (23De)	----	0.02	% S	0.076	0.075	0.0	0% - 50%
		EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	0.070	0.068	2.0	0% - 50%

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 (%)*
EA029-C: Sulfur Trail (QC Lot: 4505540) - continued									
EP2209615-001	BH01_0-0.5	EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	43	42	0.0	No Limit
EP2209615-011	BH06_2.5-3.0	EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	0.090	0.086	4.9	0% - 50%
		EA029: Peroxide Sulfur (23De)	----	0.02	% S	0.214	0.200	7.0	0% - 20%
		EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	0.124	0.114	8.7	0% - 20%
		EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	77	71	8.7	0% - 50%
EA029-D: Calcium Values (QC Lot: 4505540)									
EP2209615-001	BH01_0-0.5	EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	0.213	0.225	5.4	0% - 20%
		EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	14.2	13.3	6.2	0% - 20%
		EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	14.0	13.1	6.4	0% - 20%
		EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	11.2	10.5	6.4	0% - 20%
		EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	6960	6530	6.4	0% - 20%
EP2209615-011	BH06_2.5-3.0	EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	0.250	0.244	2.5	0% - 20%
		EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	2.23	2.13	4.6	0% - 20%
		EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	1.98	1.88	4.9	0% - 20%
		EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	1.58	1.51	4.9	0% - 20%
		EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	987	940	4.9	0% - 20%
EA029-E: Magnesium Values (QC Lot: 4505540)									
EP2209615-001	BH01_0-0.5	EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	0.021	0.022	6.5	No Limit
		EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	0.531	0.501	5.9	0% - 20%
		EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	0.510	0.479	6.5	0% - 20%
		EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	0.673	0.631	6.5	0% - 20%
		EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	420	394	6.5	0% - 20%
EP2209615-011	BH06_2.5-3.0	EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	0.026	0.026	0.0	No Limit
		EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	0.065	0.062	5.2	0% - 50%
		EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	0.038	0.036	7.5	No Limit
		EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	0.051	0.047	7.5	0% - 50%
		EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	32	29	7.5	No Limit
EA029-F: Excess Acid Neutralising Capacity (QC Lot: 4505540)									
EP2209615-001	BH01_0-0.5	EA029: Excess Acid Neutralising Capacity (23Q)	----	0.02	% CaCO3	36.9	36.8	0.4	0% - 20%
		EA029: sulfidic - Excess Acid Neutralising Capacity (s-23Q)	----	0.02	% S	11.8	11.8	0.4	0% - 20%
		EA029: acidity - Excess Acid Neutralising Capacity (a-23Q)	----	10	mole H+ / t	7380	7350	0.4	0% - 20%
EP2209615-011	BH06_2.5-3.0	EA029: Excess Acid Neutralising Capacity (23Q)	----	0.02	% CaCO3	4.88	4.91	0.7	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 (%)*
EA029-F: Excess Acid Neutralising Capacity (QC Lot: 4505540) - continued									
EP2209615-011	BH06_2.5-3.0	EA029: sulfidic - Excess Acid Neutralising Capacity (s-23Q)	----	0.02	% S	1.56	1.57	0.7	0% - 20%
		EA029: acidity - Excess Acid Neutralising Capacity (a-23Q)	----	10	mole H+ / t	975	982	0.7	0% - 20%
EA029-H: Acid Base Accounting (QC Lot: 4505540)									
EP2209615-001	BH01_0-0.5	EA029: Net Acidity (sulfur units)	----	0.02	% S	<0.02	<0.02	0.0	No Limit
		EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	0.07	0.07	0.0	No Limit
		EA029: Liming Rate	----	1	kg CaCO3/t	<1	<1	0.0	No Limit
		EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	3	3	0.0	No Limit
		EA029: Net Acidity (acidity units)	----	10	mole H+ / t	<10	<10	0.0	No Limit
		EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	43	43	0.0	No Limit
EP2209615-011	BH06_2.5-3.0	EA029: Net Acidity (sulfur units)	----	0.02	% S	<0.02	<0.02	0.0	No Limit
		EA029: Net Acidity excluding ANC (sulfur units)	----	0.02	% S	0.12	0.11	8.7	No Limit
		EA029: Liming Rate	----	1	kg CaCO3/t	<1	<1	0.0	No Limit
		EA029: Liming Rate excluding ANC	----	1	kg CaCO3/t	6	5	18.2	No Limit
		EA029: Net Acidity (acidity units)	----	10	mole H+ / t	<10	<10	0.0	No Limit
		EA029: Net Acidity excluding ANC (acidity units)	----	10	mole H+ / t	77	71	8.1	No Limit
EA037: Ass Field Screening Analysis (QC Lot: 4499625)									
EP2209615-001	BH01_0-0.5	EA037: pH (F)	----	0.1	pH Unit	8.8	8.7	0.0	0% - 20%
		EA037: pH (Fox)	----	0.1	pH Unit	6.7	6.7	0.0	0% - 20%
EP2209615-010	BH06_0.5-1.0	EA037: pH (F)	----	0.1	pH Unit	7.8	7.8	0.0	0% - 20%
		EA037: pH (Fox)	----	0.1	pH Unit	7.4	7.4	0.0	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4502957)									
EP2209615-001	BH01_0-0.5	EA055: Moisture Content	----	0.1	%	10.9	11.7	6.5	0% - 50%
EP2209615-010	BH06_0.5-1.0	EA055: Moisture Content	----	0.1	%	13.0	12.1	7.4	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4506199)									
EP2209615-026	QC102	EA055: Moisture Content	----	0.1	%	18.1	17.1	5.7	0% - 20%
ES2227997-005	Anonymous	EA055: Moisture Content	----	0.1	%	6.0	7.4	19.9	0% - 20%
EG020T: Total Metals by ICP-MS (QC Lot: 4505372)									
EP2209615-001	BH01_0-0.5	EG020T: Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
		EG020T: Lead	7439-92-1	0.1	mg/kg	13.6	15.4	12.5	0% - 20%
		EG020T: Selenium	7782-49-2	1	mg/kg	<1	<1	0.0	No Limit
EP2209615-011	BH06_2.5-3.0	EG020T: Cadmium	7440-43-9	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
		EG020T: Lead	7439-92-1	0.1	mg/kg	2.5	3.0	15.8	0% - 20%
		EG020T: Selenium	7782-49-2	1	mg/kg	<1	<1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4505373)									
EP2209615-001	BH01_0-0.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP2209615-011	BH06_2.5-3.0	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 4510034)									

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 (%)*
EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 4510034) - continued									
EP2209615-001	BH01_0-0.5	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<2.5	<2.5	0.0	No Limit
EP2209615-011	BH06_2.5-3.0	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 4510396)									
EP2209615-001	BH01_0-0.5	EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	<1	0.0	No Limit
EP2209615-011	BH06_2.5-3.0	EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	<1	0.0	No Limit
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser (QC Lot: 4510395)									
EP2209615-001	BH01_0-0.5	EK028SF: Weak Acid Dissociable Cyanide	----	1	mg/kg	<1	<1	0.0	No Limit
EP2209615-011	BH06_2.5-3.0	EK028SF: Weak Acid Dissociable Cyanide	----	1	mg/kg	<1	<1	0.0	No Limit
EK040T: Fluoride Total (QC Lot: 4498778)									
EP2209615-001	BH01_0-0.5	EK040T: Fluoride	16984-48-8	40	mg/kg	220	170	25.8	No Limit
EP2209615-010	BH06_0.5-1.0	EK040T: Fluoride	16984-48-8	40	mg/kg	60	50	23.6	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 4491000)									
EP2209615-001	BH01_0-0.5	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP2209615-011	BH06_2.5-3.0	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 4501547)									
EP2209615-012	BH07_0.5-1.0	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4490998)									
EP2209615-001	BH01_0-0.5	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: Total Chlordane (sum)	----	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: Endosulfan (sum)	115-29-7	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: Total OCP	----	0.05	mg/kg	<5.00	<5.00	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: 4490998) - continued									
EP2209615-001	BH01_0-0.5	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
EP2209615-011	BH06_2.5-3.0	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: Total Chlordane (sum)	----	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: Endosulfan (sum)	115-29-7	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: Total OCP	----	0.05	mg/kg	<5.00	<5.00	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: 4501549)									
EP2209615-012	BH07_0.5-1.0	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: Total Chlordane (sum)	----	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

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: 4501549) - continued									
EP2209615-012	BH07_0.5-1.0	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: Endosulfan (sum)	115-29-7	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: Total OCP	----	0.05	mg/kg	<5.00	<5.00	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
EP070: Total Petroleum Hydrocarbons - Speciation (QC Lot: 4491004)									
EP2209615-001	BH01_0-0.5	EP070: Aliphatic C16-C35	----	100	mg/kg	<100	<100	0.0	No Limit
		EP070: Aliphatic > C35	----	100	mg/kg	<100	<100	0.0	No Limit
		EP070: Aromatic > C35	----	100	mg/kg	<100	<100	0.0	No Limit
		EP070: Aromatic C16-C35	----	90	mg/kg	<90	<90	0.0	No Limit
EP2209615-011	BH06_2.5-3.0	EP070: Aliphatic C16-C35	----	100	mg/kg	<100	<100	0.0	No Limit
		EP070: Aliphatic > C35	----	100	mg/kg	<100	<100	0.0	No Limit
		EP070: Aromatic > C35	----	100	mg/kg	<100	<100	0.0	No Limit
		EP070: Aromatic C16-C35	----	90	mg/kg	<90	<90	0.0	No Limit
EP070: Total Petroleum Hydrocarbons - Speciation (QC Lot: 4501552)									
EP2209615-012	BH07_0.5-1.0	EP070: Aliphatic C16-C35	----	100	mg/kg	<100	<100	0.0	No Limit
		EP070: Aliphatic > C35	----	100	mg/kg	<100	<100	0.0	No Limit
		EP070: Aromatic > C35	----	100	mg/kg	<100	<100	0.0	No Limit
		EP070: Aromatic C16-C35	----	90	mg/kg	<90	<90	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4490995)									
EP2209615-001	BH01_0-0.5	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP2209615-011	BH06_2.5-3.0	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4499033)									
EP2209615-012	BH07_0.5-1.0	EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 4490999)									
EP2209615-001	BH01_0-0.5	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

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: 4490999) - continued									
EP2209615-001	BH01_0-0.5	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
EP2209615-011	BH06_2.5-3.0	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)A: Phenolic Compounds (QC Lot: 4501550)									
EP2209615-012	BH07_0.5-1.0	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: 4490999)									
EP2209615-001	BH01_0-0.5	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

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: 4490999) - continued									
EP2209615-001	BH01_0-0.5	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
EP2209615-011	BH06_2.5-3.0	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)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4501550)									
EP2209615-012	BH07_0.5-1.0	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

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: 4501550) - continued									
EP2209615-012	BH07_0.5-1.0	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
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4490996)									
EP2209615-001	BH01_0-0.5	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP2209615-011	BH06_2.5-3.0	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4490997)									
EP2209615-001	BH01_0-0.5	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
EP2209615-011	BH06_2.5-3.0	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: 4499032)									
EP2209615-012	BH07_0.5-1.0	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4501548)									
EP2209615-012	BH07_0.5-1.0	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: 4490996)									
EP2209615-001	BH01_0-0.5	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP2209615-011	BH06_2.5-3.0	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: 4490997)									
EP2209615-001	BH01_0-0.5	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
EP2209615-011	BH06_2.5-3.0	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: 4499032)									
EP2209615-012	BH07_0.5-1.0	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: 4501548)									
EP2209615-012	BH07_0.5-1.0	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: 4490996)									
EP2209615-001	BH01_0-0.5	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

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: 4490996) - continued									
EP2209615-001	BH01_0-0.5	EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		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
EP2209615-011	BH06_2.5-3.0	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
		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: 4499032)									
EP2209615-012	BH07_0.5-1.0	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
		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
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QC Lot: 4501648)									
EM2214504-009	Anonymous	EP202: 2.4-D	94-75-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
EM2214504-012	Anonymous	EP202: 2.4-D	94-75-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QC Lot: 4509367)									
EP2209615-018	QC101	EP202: 2.4-D	94-75-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
ES2227493-012	Anonymous	EP202: 2.4-D	94-75-7	0.02	mg/kg	<0.02	<0.02	0.0	No Limit
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4513394)									
EP2209615-001	BH01_0-0.5	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	0.0003	0.0003	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP2209615-011	BH06_2.5-3.0	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4513394)									

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4513394) - continued									
EP2209615-001	BH01_0-0.5	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP2209615-011	BH06_2.5-3.0	EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	<0.001	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4513394)									
EP2209615-001	BH01_0-0.5	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP2209615-011	BH06_2.5-3.0	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	<0.0002	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4513394) - continued									
EP2209615-011	BH06_2.5-3.0	EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4513394)									
EP2209615-001	BH01_0-0.5	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
EP2209615-011	BH06_2.5-3.0	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	<0.0005	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EA005P: pH by PC Titrator (QC Lot: 4502332)									
EP2209598-032	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	8.52	8.53	0.1	0% - 20%
EP2209629-005	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	8.15	8.15	0.0	0% - 20%
EG020T: Total Metals by ICP-MS (QC Lot: 4497898)									
EP2209661-006	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Barium	7440-39-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.041	0.042	0.0	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	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 (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 4497898) - continued									
EP2209661-006	Anonymous	EG020A-T: Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.005	0.005	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.356	0.359	0.9	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	0.44	0.45	2.3	No Limit
EP2209615-021	RN01	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Barium	7440-39-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 4497899)									
EP2209615-021	RN01	EG020B-T: Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4497917)									
EP2209615-022	RN02	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EG050T: Total Hexavalent Chromium (QC Lot: 4511457)									
EP2209615-021	RN01	EG050G-T: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 4494398)									
EP2209628-002	Anonymous	EK026SF: Total Cyanide	57-12-5	0.004	mg/L	36.3	35.8	1.4	0% - 20%
EP2209628-003	Anonymous	EK026SF: Total Cyanide	57-12-5	0.004	mg/L	42.8	41.8	2.2	0% - 20%
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser (QC Lot: 4494397)									
EP2209628-002	Anonymous	EK028SF: Weak Acid Dissociable Cyanide	----	0.004	mg/L	27.0	24.2	10.9	0% - 20%
EP2209628-003	Anonymous	EK028SF: Weak Acid Dissociable Cyanide	----	0.004	mg/L	30.7	30.2	1.6	0% - 20%
EK040P: Fluoride by PC Titrator (QC Lot: 4502333)									
EP2209598-032	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.6	0.6	0.0	No Limit
EP2209629-005	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.3	0.3	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4497221)									

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 (%)*
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4497221) - continued									
EP2209525-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP2209619-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<0.02 mg/L	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4497221)									
EP2209525-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP2209619-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<0.02 mg/L	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 4497221)									
EP2209525-001	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	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		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
EP2209619-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<0.001 mg/L	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<0.002 mg/L	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<0.002 mg/L	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<0.002 mg/L	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<0.002 mg/L	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<0.005 mg/L	<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**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4505371)								
EG005T: Aluminium	7429-90-5	50	mg/kg	<50	6134 mg/kg	95.2	76.8	112
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	96.5	87.2	114
EG005T: Barium	7440-39-3	10	mg/kg	<10	143 mg/kg	91.4	82.4	112
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	5.63 mg/kg	97.7	91.3	121
EG005T: Boron	7440-42-8	50	mg/kg	<50	----	----	----	----
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	16 mg/kg	92.2	79.6	112
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	92.8	81.0	112
EG005T: Manganese	7439-96-5	5	mg/kg	<5	130 mg/kg	103	70.5	128
EG005T: Molybdenum	7439-98-7	2	mg/kg	<2	7.9 mg/kg	82.9	75.0	105
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	90.7	78.7	106
EG005T: Silver	7440-22-4	2	mg/kg	<2	2.1 mg/kg	83.3	71.2	106
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	29.6 mg/kg	91.4	82.6	108
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	88.4	79.4	110
EP035SF: Total Phenol by Segmented Flow Analyser (QCLot: 4506007)								
EP035SF: Phenols (Total)	----	1	mg/kg	<1	20 mg/kg	104	79.9	120
EP035SF: Total Phenol by Segmented Flow Analyser (QCLot: 4510912)								
EP035SF: Phenols (Total)	----	1	mg/kg	<1	20 mg/kg	96.1	79.9	120
EA002: pH 1:5 (Soils) (QCLot: 4504077)								
EA002: pH Value	----	----	pH Unit	----	4 pH Unit	99.2	98.6	102
				----	7 pH Unit	99.3	98.6	102
EA002: pH 1:5 (Soils) (QCLot: 4504078)								
EA002: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.6	102
				----	7 pH Unit	99.6	98.6	102
EA029-A: pH Measurements (QCLot: 4505540)								
EA029: pH KCl (23A)	----	----	pH Unit	----	5.047 pH Unit	99.3	94.6	100
EA029: pH OX (23B)	----	----	pH Unit	----	4.36 pH Unit	99.3	93.0	112
EA029-B: Acidity Trail (QCLot: 4505540)								
EA029: Titratable Actual Acidity (23F)	----	2	mole H+ / t	<2	22.26 mole H+ / t	98.9	83.4	112
EA029: Titratable Peroxide Acidity (23G)	----	2	mole H+ / t	<2	41 mole H+ / t	100	89.0	123
EA029: sulfidic - Titratable Actual Acidity (s-23F)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: sulfidic - Titratable Peroxide Acidity (s-23G)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029: sulfidic - Titratable Sulfidic Acidity (s-23H)	----	0.02	% pyrite S	<0.020	----	----	----	----
EA029-C: Sulfur Trail (QCLot: 4505540)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EA029-C: Sulfur Trail (QCLot: 4505540) - continued								
EA029: KCl Extractable Sulfur (23Ce)	----	0.02	% S	<0.020	0.05325 % S	120	80.0	130
EA029: Peroxide Sulfur (23De)	----	0.02	% S	<0.020	0.158 % S	92.5	72.2	109
EA029: Peroxide Oxidisable Sulfur (23E)	----	0.02	% S	<0.020	----	----	----	----
EA029: acidity - Peroxide Oxidisable Sulfur (a-23E)	----	10	mole H+ / t	<10	----	----	----	----
EA029-D: Calcium Values (QCLot: 4505540)								
EA029: KCl Extractable Calcium (23Vh)	----	0.02	% Ca	<0.020	0.22305 % Ca	91.1	77.5	117
EA029: Peroxide Calcium (23Wh)	----	0.02	% Ca	<0.020	0.2064 % Ca	105	80.9	118
EA029: Acid Reacted Calcium (23X)	----	0.02	% Ca	<0.020	----	----	----	----
EA029: acidity - Acid Reacted Calcium (a-23X)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Acid Reacted Calcium (s-23X)	----	0.02	% S	<0.020	----	----	----	----
EA029-E: Magnesium Values (QCLot: 4505540)								
EA029: KCl Extractable Magnesium (23Sm)	----	0.02	% Mg	<0.020	0.12082 % Mg	82.8	71.6	108
EA029: Peroxide Magnesium (23Tm)	----	0.02	% Mg	<0.020	0.18219 % Mg	102	81.0	117
EA029: Acid Reacted Magnesium (23U)	----	0.02	% Mg	<0.020	----	----	----	----
EA029: Acidity - Acid Reacted Magnesium (a-23U)	----	10	mole H+ / t	<10	----	----	----	----
EA029: sulfidic - Acid Reacted Magnesium (s-23U)	----	0.02	% S	<0.020	----	----	----	----
EG020T: Total Metals by ICP-MS (QCLot: 4505372)								
EG020T: Cadmium	7440-43-9	0.1	mg/kg	<0.1	4.64 mg/kg	91.4	87.0	116
EG020T: Lead	7439-92-1	0.1	mg/kg	<0.1	40 mg/kg	88.6	84.2	119
EG020T: Selenium	7782-49-2	1	mg/kg	<1	5.37 mg/kg	106	94.1	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4505373)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.154 mg/kg	97.5	84.3	124
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 4510034)								
EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	40 mg/kg	75.1	70.0	120
				<0.5	20 mg/kg	90.1	70.0	120
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 4510396)								
EK026SF: Total Cyanide	57-12-5	1	mg/kg	<1	40 mg/kg	83.1	75.6	111
				<1	20 mg/kg	94.5	75.6	111
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser (QCLot: 4510395)								
EK028SF: Weak Acid Dissociable Cyanide	----	1	mg/kg	<1	40 mg/kg	101	85.7	113
				<1	20 mg/kg	92.0	85.7	113
EK040T: Fluoride Total (QCLot: 4498778)								
EK040T: Fluoride	16984-48-8	40	mg/kg	<40	400 mg/kg	96.6	75.2	110
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 4491000)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	0.5 mg/kg	100	41.0	111
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 4501547)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	0.5 mg/kg	102	41.0	111

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 4490998)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	115	46.0	116
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	118	53.0	133
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	114	45.0	117
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	104	46.0	122
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	114	47.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	81.9	40.0	118
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	107	47.0	123
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	96.4	41.0	119
EP068: Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	----	----
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	96.1	43.0	119
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	55.8	41.0	131
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	96.7	41.0	119
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	90.5	41.0	127
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	90.8	44.0	122
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	105	37.0	129
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	98.6	41.0	127
EP068: Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	----	----	----
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	97.6	42.0	122
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	71.6	31.2	117
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	94.4	38.0	120
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	92.4	31.4	125
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	95.0	31.2	123
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	90.1	24.7	125
EP068: Total OCP	----	0.05	mg/kg	<0.05	----	----	----	----
EP068A: Organochlorine Pesticides (OC) (QCLot: 4501549)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	67.8	46.0	116
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	82.3	53.0	133
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	77.1	45.0	117
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	79.8	46.0	122
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	86.5	47.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	70.6	40.0	118
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	89.6	47.0	123
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	81.6	41.0	119
EP068: Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	----	----
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	80.2	43.0	119
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	101	41.0	131
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	80.5	41.0	119
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	74.9	41.0	127
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	74.4	44.0	122

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 4501549) - continued								
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	72.5	37.0	129
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	80.8	41.0	127
EP068: Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	----	----	----
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	78.2	42.0	122
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	64.9	31.2	117
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	81.6	38.0	120
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	77.4	31.4	125
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	73.7	31.2	123
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	66.6	24.7	125
EP068: Total OCP	----	0.05	mg/kg	<0.05	----	----	----	----
EP070: Total Petroleum Hydrocarbons - Speciation (QCLot: 4491004)								
EP070: Aliphatic C16-C35	----	100	mg/kg	<100	1950 mg/kg	107	70.0	130
EP070: Aliphatic > C35	----	100	mg/kg	<100	----	----	----	----
EP070: Aromatic C16-C35	----	90	mg/kg	<90	452 mg/kg	129	70.0	130
EP070: Aromatic > C35	----	100	mg/kg	<100	----	----	----	----
EP070: Total Petroleum Hydrocarbons - Speciation (QCLot: 4501552)								
EP070: Aliphatic C16-C35	----	100	mg/kg	<100	1950 mg/kg	93.8	70.0	130
EP070: Aliphatic > C35	----	100	mg/kg	<100	----	----	----	----
EP070: Aromatic C16-C35	----	90	mg/kg	<90	452 mg/kg	120	70.0	130
EP070: Aromatic > C35	----	100	mg/kg	<100	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4490995)								
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	90.0	69.0	117
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4499033)								
EP074: Styrene	100-42-5	0.5	mg/kg	<0.5	1 mg/kg	98.1	69.0	117
EP075(SIM)A: Phenolic Compounds (QCLot: 4490999)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	3 mg/kg	98.6	61.0	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	3 mg/kg	100	66.0	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	3 mg/kg	105	62.0	126
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	6 mg/kg	101	63.0	129
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	3 mg/kg	115	61.0	131
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	3 mg/kg	110	60.0	132
EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	3 mg/kg	100	63.0	131
EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	3 mg/kg	99.8	67.0	123
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	3 mg/kg	106	65.0	125
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	3 mg/kg	111	52.0	132
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	3 mg/kg	107	64.0	130
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	3 mg/kg	96.4	34.0	138
EP075(SIM)A: Phenolic Compounds (QCLot: 4501550)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)A: Phenolic Compounds (QCLot: 4501550) - continued								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	3 mg/kg	101	61.0	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	3 mg/kg	108	66.0	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	3 mg/kg	101	62.0	126
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	6 mg/kg	97.2	63.0	129
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	3 mg/kg	65.4	61.0	131
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	3 mg/kg	98.6	60.0	132
EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	3 mg/kg	96.6	63.0	131
EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	3 mg/kg	99.5	67.0	123
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	3 mg/kg	114	65.0	125
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	3 mg/kg	113	52.0	132
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	3 mg/kg	113	64.0	130
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	3 mg/kg	106	34.0	138
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4490999)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	3 mg/kg	96.6	71.0	123
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	3 mg/kg	115	69.0	129
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	3 mg/kg	100	65.0	125
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	3 mg/kg	97.8	71.0	125
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	3 mg/kg	94.2	66.0	124
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	3 mg/kg	95.6	60.0	112
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	3 mg/kg	108	67.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	3 mg/kg	106	65.0	127
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	3 mg/kg	104	57.0	125
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	3 mg/kg	95.3	57.0	131
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	3 mg/kg	107	65.0	125
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	3 mg/kg	103	69.0	127
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	3 mg/kg	104	63.0	121
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	3 mg/kg	91.4	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	3 mg/kg	86.5	52.0	128
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	3 mg/kg	91.7	65.0	125
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4501550)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	3 mg/kg	97.8	71.0	123
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	3 mg/kg	119	69.0	129
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	3 mg/kg	96.5	65.0	125
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	3 mg/kg	101	71.0	125
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	3 mg/kg	90.9	66.0	124
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	3 mg/kg	98.8	60.0	112
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	3 mg/kg	94.7	67.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	3 mg/kg	108	65.0	127

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4501550) - continued								
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	3 mg/kg	102	57.0	125
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	3 mg/kg	89.7	57.0	131
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	3 mg/kg	105	65.0	125
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	3 mg/kg	102	69.0	127
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	3 mg/kg	105	63.0	121
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	3 mg/kg	114	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	3 mg/kg	88.2	52.0	128
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	3 mg/kg	80.6	65.0	125
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4490996)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	35 mg/kg	102	66.0	122
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4490997)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	1468 mg/kg	94.4	70.0	111
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	3111 mg/kg	104	71.9	109
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	436 mg/kg	97.3	63.8	118
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4499032)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	35 mg/kg	99.1	66.0	122
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4501548)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	1468 mg/kg	96.6	70.0	111
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	3111 mg/kg	107	71.9	109
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	436 mg/kg	86.0	63.8	118
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4490996)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	45 mg/kg	98.0	66.0	122
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4490997)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	2234 mg/kg	98.8	72.8	110
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	2553 mg/kg	104	67.8	114
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	150 mg/kg	89.9	50.3	123
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4499032)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	45 mg/kg	96.1	66.0	122
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4501548)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	2234 mg/kg	102	72.8	110
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	2553 mg/kg	103	67.8	114
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	150 mg/kg	81.8	50.3	123
EP080: BTEXN (QCLot: 4490996)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	2 mg/kg	90.7	72.0	122
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	2 mg/kg	93.9	75.0	119
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2 mg/kg	95.3	73.0	121

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP080: BTEXN (QCLot: 4490996) - continued								
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	4 mg/kg	91.8	74.0	122
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2 mg/kg	94.2	75.0	121
EP080: Naphthalene	91-20-3	1	mg/kg	<1	0.5 mg/kg	105	64.0	126
EP080: BTEXN (QCLot: 4499032)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	2 mg/kg	89.1	72.0	122
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	2 mg/kg	95.2	75.0	119
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	2 mg/kg	91.0	73.0	121
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	4 mg/kg	92.0	74.0	122
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	2 mg/kg	99.6	75.0	121
EP080: Naphthalene	91-20-3	1	mg/kg	<1	0.5 mg/kg	81.3	64.0	126
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QCLot: 4501648)								
EP202: 2.4-D	94-75-7	0.02	mg/kg	<0.02	0.1 mg/kg	79.3	68.5	131
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QCLot: 4509367)								
EP202: 2.4-D	94-75-7	0.02	mg/kg	<0.02	0.1 mg/kg	98.3	68.5	131
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4513394)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	<0.0002	0.00125 mg/kg	108	72.0	128
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	97.6	73.0	123
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	113	67.0	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.2	70.0	132
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	100	68.0	136
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	104	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4513394)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	<0.001	0.00625 mg/kg	94.5	71.0	135
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	<0.0002	0.00125 mg/kg	122	69.0	132
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	<0.0002	0.00125 mg/kg	114	70.0	132
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	106	71.0	131
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	110	69.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	109	72.0	129
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	<0.0002	0.00125 mg/kg	106	69.0	133
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	106	64.0	136
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	<0.0002	0.00125 mg/kg	108	69.0	135
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.0002	mg/kg	<0.0002	0.00125 mg/kg	101	66.0	139
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	114	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4513394)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	108	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	<0.0005	0.00312 mg/kg	109	71.6	129

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4513394) - continued								
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	97.9	69.8	131
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	<0.0005	0.00312 mg/kg	101	68.7	130
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	<0.0005	0.00312 mg/kg	99.4	65.1	134
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	<0.0002	0.00125 mg/kg	98.4	63.0	144
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	<0.0002	0.00125 mg/kg	99.2	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4513394)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	96.8	62.0	145
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	<0.0005	0.00125 mg/kg	115	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	<0.0005	0.00125 mg/kg	116	65.0	137
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	<0.0005	0.00125 mg/kg	116	69.2	143

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EA005P: pH by PC Titrator (QCLot: 4502332)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.5	102
				----	7 pH Unit	100	98.5	102
EG020T: Total Metals by ICP-MS (QCLot: 4497898)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	104	91.6	114
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	110	92.6	113
EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	0.1 mg/L	98.8	82.2	127
EG020A-T: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	105	91.0	112
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	105	91.8	111
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	106	90.9	109
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	105	90.5	110
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	103	90.8	110
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	104	92.3	108
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	102	90.3	109
EG020A-T: Molybdenum	7439-98-7	0.001	mg/L	<0.001	0.1 mg/L	113	98.8	121
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	103	89.3	110
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	103	85.7	110
EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	104	92.0	111
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	107	90.7	113
EG020A-T: Boron	7440-42-8	0.05	mg/L	<0.05	0.5 mg/L	102	79.6	130
EG020T: Total Metals by ICP-MS (QCLot: 4497899)								

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 4497899) - continued								
EG020B-T: Silver	7440-22-4	0.001	mg/L	<0.001	0.02 mg/L	107	92.5	124
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4497917)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.005 mg/L	87.8	83.7	120
EG050T: Total Hexavalent Chromium (QCLot: 4511457)								
EG050G-T: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.5 mg/L	104	93.2	108
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 4494398)								
EK026SF: Total Cyanide	57-12-5	0.004	mg/L	<0.004	0.2 mg/L	98.2	75.0	127
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser (QCLot: 4494397)								
EK028SF: Weak Acid Dissociable Cyanide	----	0.004	mg/L	<0.004	0.2 mg/L	99.0	92.2	112
EK040P: Fluoride by PC Titrator (QCLot: 4502333)								
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	98.6	86.0	116
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 4496298)								
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	5 µg/L	70.0	36.2	90.2
EP068A: Organochlorine Pesticides (OC) (QCLot: 4496296)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	68.4	42.3	112
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	56.7	39.0	108
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	63.5	45.5	116
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	60.6	43.0	118
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	67.0	46.2	115
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	55.0	39.0	111
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	57.0	39.7	114
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	71.8	42.4	122
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	69.9	43.6	121
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	66.0	42.1	129
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	70.4	42.7	123
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	69.0	42.4	121
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	68.2	43.8	123
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	62.1	26.9	127
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	74.7	44.9	128
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	56.3	41.7	128
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	63.8	32.2	121
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	67.5	40.7	120
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	63.2	31.6	123
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	68.6	36.4	124
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	58.7	25.4	124
EP070: Total Petroleum Hydrocarbons - Speciation (QCLot: 4496299)								
EP070: Aliphatic C10-C14	----	50	µg/L	<50	2674 µg/L	90.0	76.1	125

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP070: Total Petroleum Hydrocarbons - Speciation (QCLot: 4496299) - continued								
EP070: Aliphatic C15-C28	----	100	µg/L	<100	7406 µg/L	113	89.6	138
EP070: Aliphatic C29-C36	----	50	µg/L	<50	----	----	----	----
EP070: Aromatic C10-C14	----	50	µg/L	<50	1621 µg/L	86.1	46.6	128
EP070: Aromatic C15-C28	----	100	µg/L	<100	2920 µg/L	114	53.4	159
EP070: Aromatic C29-C36	----	50	µg/L	<50	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4496297)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	368 µg/L	79.6	39.3	103
EP071: C15 - C28 Fraction	----	100	µg/L	<100	369 µg/L	97.3	47.2	122
EP071: C29 - C36 Fraction	----	50	µg/L	<50	297 µg/L	87.3	42.5	119
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4497221)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	98.6	73.6	113
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4496297)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	370 µg/L	82.2	42.0	104
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	482 µg/L	95.9	46.2	116
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	283 µg/L	53.9	24.7	137
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4497221)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	98.6	73.9	115
EP080: BTEXN (QCLot: 4497221)								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	102	84.1	114
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	101	81.0	115
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	98.0	84.4	113
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	101	84.3	114
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	100	86.5	111
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	88.0	77.0	118

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4505371)							
EP2209615-001	BH01_0-0.5	EG005T: Arsenic	7440-38-2	50 mg/kg	89.0	70.0	130
		EG005T: Barium	7440-39-3	50 mg/kg	108	70.0	130
		EG005T: Beryllium	7440-41-7	50 mg/kg	102	70.0	130
		EG005T: Cobalt	7440-48-4	50 mg/kg	91.5	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
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4505371) - continued							
EP2209615-001	BH01_0-0.5	EG005T: Copper	7440-50-8	50 mg/kg	109	70.0	130
		EG005T: Manganese	7439-96-5	50 mg/kg	105	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	91.6	70.0	130
		EG005T: Vanadium	7440-62-2	50 mg/kg	94.8	70.0	130
		EG005T: Zinc	7440-66-6	50 mg/kg	95.7	70.0	130
EP035SF: Total Phenol by Segmented Flow Analyser (QCLot: 4506007)							
EP2209615-014	MW1_0-0.5	EP035SF: Phenols (Total)	----	20 mg/kg	106	76.0	131
EP035SF: Total Phenol by Segmented Flow Analyser (QCLot: 4510912)							
EP2209615-001	BH01_0-0.5	EP035SF: Phenols (Total)	----	20 mg/kg	98.3	76.0	131
EG020T: Total Metals by ICP-MS (QCLot: 4505372)							
EP2209615-001	BH01_0-0.5	EG020T: Cadmium	7440-43-9	12.5 mg/kg	94.9	70.0	130
		EG020T: Lead	7439-92-1	50 mg/kg	105	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4505373)							
EP2209615-001	BH01_0-0.5	EG035T: Mercury	7439-97-6	1 mg/kg	98.8	70.0	130
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 4510034)							
EP2209615-001	BH01_0-0.5	EG048G: Hexavalent Chromium	18540-29-9	40 mg/kg	76.8	70.0	130
EP2209615-001	BH01_0-0.5	EG048G: Hexavalent Chromium	18540-29-9	20 mg/kg	79.0	70.0	130
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 4510396)							
EP2209615-002	BH01_2.5-3.0	EK026SF: Total Cyanide	57-12-5	20 mg/kg	94.1	70.0	130
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser (QCLot: 4510395)							
EP2209615-002	BH01_2.5-3.0	EK028SF: Weak Acid Dissociable Cyanide	----	20 mg/kg	96.7	70.0	130
EK040T: Fluoride Total (QCLot: 4498778)							
EP2209615-002	BH01_2.5-3.0	EK040T: Fluoride	16984-48-8	400 mg/kg	85.9	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 4491000)							
EP2209615-002	BH01_2.5-3.0	EP066: Total Polychlorinated biphenyls	----	0.5 mg/kg	102	43.1	142
EP068A: Organochlorine Pesticides (OC) (QCLot: 4490998)							
EP2209615-002	BH01_2.5-3.0	EP068: gamma-BHC	58-89-9	0.5 mg/kg	87.8	57.9	124
		EP068: Heptachlor	76-44-8	0.5 mg/kg	79.5	57.4	135
		EP068: Aldrin	309-00-2	0.5 mg/kg	76.9	59.6	125
		EP068: Dieldrin	60-57-1	0.5 mg/kg	97.4	62.2	131
		EP068: Endrin	72-20-8	0.5 mg/kg	83.7	55.8	138
		EP068: 4.4`-DDT	50-29-3	0.5 mg/kg	102	50.5	145
EP070: Total Petroleum Hydrocarbons - Speciation (QCLot: 4491004)							
EP2209615-002	BH01_2.5-3.0	EP070: Aliphatic C16-C35	----	1950 mg/kg	99.0	70.0	130
		EP070: Aromatic C16-C35	----	452 mg/kg	124	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
EP075(SIM)A: Phenolic Compounds (QCLot: 4490999)							
EP2209615-002	BH01_2.5-3.0	EP075(SIM): Phenol	108-95-2	3 mg/kg	96.6	73.4	135
		EP075(SIM): 2-Chlorophenol	95-57-8	3 mg/kg	98.9	71.7	136
		EP075(SIM): 2-Nitrophenol	88-75-5	3 mg/kg	117	62.8	137
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	3 mg/kg	110	73.6	128
		EP075(SIM): Pentachlorophenol	87-86-5	3 mg/kg	107	18.0	152
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4490999)							
EP2209615-002	BH01_2.5-3.0	EP075(SIM): Acenaphthene	83-32-9	3 mg/kg	104	73.5	125
		EP075(SIM): Pyrene	129-00-0	3 mg/kg	106	70.8	125
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4490996)							
EP2209615-002	BH01_2.5-3.0	EP080: C6 - C9 Fraction	----	24 mg/kg	81.6	69.1	135
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4490997)							
EP2209615-002	BH01_2.5-3.0	EP071: C10 - C14 Fraction	----	1468 mg/kg	97.5	64.7	126
		EP071: C15 - C28 Fraction	----	3111 mg/kg	107	61.7	124
		EP071: C29 - C36 Fraction	----	436 mg/kg	98.6	64.6	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4490996)							
EP2209615-002	BH01_2.5-3.0	EP080: C6 - C10 Fraction	C6_C10	29 mg/kg	80.7	69.1	135
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4490997)							
EP2209615-002	BH01_2.5-3.0	EP071: >C10 - C16 Fraction	----	2234 mg/kg	102	64.7	126
		EP071: >C16 - C34 Fraction	----	2553 mg/kg	107	61.7	124
		EP071: >C34 - C40 Fraction	----	150 mg/kg	90.5	64.6	131
EP080: BTEXN (QCLot: 4490996)							
EP2209615-002	BH01_2.5-3.0	EP080: Benzene	71-43-2	2 mg/kg	85.3	76.4	118
		EP080: Toluene	108-88-3	2 mg/kg	80.7	67.4	112
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QCLot: 4501648)							
EM2214504-009	Anonymous	EP202: 2.4-D	94-75-7	0.1 mg/kg	74.3	68.0	139
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QCLot: 4509367)							
EP2209615-018	QC101	EP202: 2.4-D	94-75-7	0.1 mg/kg	85.5	68.0	139
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4513394)							
EP2209615-001	BH01_0-0.5	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.00125 mg/kg	121	72.0	128
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.00125 mg/kg	97.6	73.0	123
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.00125 mg/kg	120	67.0	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.00125 mg/kg	96.0	70.0	132
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.00125 mg/kg	96.4	68.0	136
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.00125 mg/kg	110	59.0	134
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4513394)							
EP2209615-001	BH01_0-0.5						

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4513394) - continued							
EP2209615-001	BH01_0-0.5	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.00625 mg/kg	109	71.0	135
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.00125 mg/kg	120	69.0	132
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.00125 mg/kg	104	70.0	132
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.00125 mg/kg	111	71.0	131
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.00125 mg/kg	117	69.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.00125 mg/kg	116	72.0	129
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.00125 mg/kg	114	69.0	133
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.00125 mg/kg	103	64.0	136
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.00125 mg/kg	102	69.0	135
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.00125 mg/kg	95.2	66.0	139
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.00312 mg/kg	127	69.0	133
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4513394)							
EP2209615-001	BH01_0-0.5	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.00125 mg/kg	92.8	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.00312 mg/kg	109	71.6	129
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.00312 mg/kg	117	69.8	131
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.00312 mg/kg	112	68.7	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.00312 mg/kg	95.0	65.1	134
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.00125 mg/kg	114	63.0	144
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.00125 mg/kg	109	61.0	139
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4513394)							
EP2209615-001	BH01_0-0.5	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.00125 mg/kg	113	62.0	145
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.00125 mg/kg	123	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.00125 mg/kg	126	65.0	137
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.00125 mg/kg	82.0	69.2	143

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 4497898)							
EP2209525-002	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	96.6	70.0	130
		EG020A-T: Beryllium	7440-41-7	1 mg/L	84.4	70.0	130
		EG020A-T: Barium	7440-39-3	1 mg/L	92.8	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	95.4	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	85.7	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
EG020T: Total Metals by ICP-MS (QCLot: 4497898) - continued							
EP2209525-002	Anonymous	EG020A-T: Cobalt	7440-48-4	1 mg/L	91.4	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	91.1	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	91.6	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	90.1	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	92.9	70.0	130
		EG020A-T: Vanadium	7440-62-2	1 mg/L	90.0	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	95.3	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4497917)							
EP2209666-001	Anonymous	EG035T: Mercury	7439-97-6	0.005 mg/L	75.7	70.0	130
EG050T: Total Hexavalent Chromium (QCLot: 4511457)							
EP2209615-021	RN01	EG050G-T: Hexavalent Chromium	18540-29-9	0.5 mg/L	103	70.0	130
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 4494398)							
EP2209628-001	Anonymous	EK026SF: Total Cyanide	57-12-5	20 mg/L	95.6	70.0	130
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser (QCLot: 4494397)							
EP2209628-001	Anonymous	EK028SF: Weak Acid Dissociable Cyanide	----	20 mg/L	96.1	70.0	130
EK040P: Fluoride by PC Titrator (QCLot: 4502333)							
EP2209598-033	Anonymous	EK040P: Fluoride	16984-48-8	4.9 mg/L	90.6	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4497221)							
EP2209525-002	Anonymous	EP080: C6 - C9 Fraction	----	240 µg/L	103	77.0	137
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4497221)							
EP2209525-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	290 µg/L	99.2	77.0	137
EP080: BTEXN (QCLot: 4497221)							
EP2209525-002	Anonymous	EP080: Benzene	71-43-2	20 µg/L	118	77.0	122
		EP080: Toluene	108-88-3	20 µg/L	105	73.5	126

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EP2209615**	Page	: 1 of 26
Client	: **AURECON AUSTRALASIA PTY LTD**	Laboratory	: Environmental Division Perth
Contact	: Nathan Seaver	Telephone	: +61 2 8784 8555
Project	: Bunbry Quantem Terminal	Date Samples Received	: 29-Jul-2022
Site	: ----	Issue Date	: 17-Aug-2022
Sampler	: ALI ANWAR	No. of samples received	: 26
Order number	: ----	No. of samples analysed	: 26

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

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

Summary of Outliers

Outliers : Quality Control Samples

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

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

Outliers : Analysis Holding Time Compliance

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

Outliers : Frequency of Quality Control Samples

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

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Duplicate (DUP) RPDs							
EG005(ED093)T: Total Metals by ICP-AES	EP2209615--011	BH06_2.5-3.0	**Aluminium**	7429-90-5	24.2 %	0% - 20%	**RPD exceeds LOR based limits**

Regular Sample Surrogates

Sub-Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP068T: Organophosphorus Pesticide Surrogate	EP2209615-013	BH07_2.5-3.0	**DEF**	78-48-8	8.1 %	27.5-152 %	**Recovery less than lower data quality objective**

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method / Container / Client Sample ID(s)		Extraction / Preparation: Date extracted	Due for extraction	Days overdue	Analysis: Date analysed	Due for analysis	Days overdue
EA002: pH 1:5 (Soils)							
Soil Glass Jar - Unpreserved							
BH01_0-0.5,	BH01_2.5-3.0,	08-Aug-2022	04-Aug-2022	**4**	----	----	----
BH02_0-0.1,	BH02_2.5-3.0,						
BH03_0.5-1.0,	BH03_2.0-2.5,						
BH04_0-0.5,	BH04_2.5-3.0,						
MW1_0-0.5,	MW1_3-3.5,						
MW2_0-0.5,	MW2_3-3.5						
Soil Glass Jar - Unpreserved							
BH05_0-0.5,	BH06_0.5-1.0,	08-Aug-2022	05-Aug-2022	**3**	----	----	----
BH06_2.5-3.0,	BH07_0.5-1.0,						
BH07_2.5-3.0,	QC101						
EP074A: Monocyclic Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved							
BH07_0.5-1.0		----	----	----	08-Aug-2022	05-Aug-2022	**3**

Matrix: **WATER**

Method / Container / Client Sample ID(s)		Extraction / Preparation: Date extracted	Due for extraction	Days overdue	Analysis: Date analysed	Due for analysis	Days overdue
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural							
RN01,	RN02	----	----	----	05-Aug-2022	29-Jul-2022	**7**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Pesticides by GCMS	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	2	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TPH - Speciation	0	2	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)					
Pesticides by GCMS	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	2	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TPH - Speciation	0	2	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 / ***Container*** / Client Sample ID(s)		***Sample Date***	*Extraction / Preparation*			*Analysis*		
			Date extracted	*Due for extraction*	*Evaluation*	***Date analysed***	*Due for analysis*	*Evaluation*
EA002: pH 1:5 (Soils)								
Soil Glass Jar - Unpreserved (EA002)								
BH01_0-0.5,	BH01_2.5-3.0,	**28-Jul-2022**	**08-Aug-2022**	04-Aug-2022	×	**08-Aug-2022**	08-Aug-2022	✓
BH02_0-0.1,	BH02_2.5-3.0,							
BH03_0.5-1.0,	BH03_2.0-2.5,							
BH04_0-0.5,	BH04_2.5-3.0,							
MW1_0-0.5,	MW1_3-3.5,							
MW2_0-0.5,	MW2_3-3.5							
Soil Glass Jar - Unpreserved (EA002)								
BH05_0-0.5,	BH06_0.5-1.0,	**29-Jul-2022**	**08-Aug-2022**	05-Aug-2022	×	**08-Aug-2022**	08-Aug-2022	✓
BH06_2.5-3.0,	BH07_0.5-1.0,							
BH07_2.5-3.0,	QC101							

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
EA029-A: pH Measurements								
80* dried soil (EA029)								
BH01_0-0.5,	BH01_2.5-3.0,	**28-Jul-2022**	**08-Aug-2022**	22-Apr-2025	✓	**15-Aug-2022**	06-Nov-2022	✓
BH02_0-0.1,	BH02_2.5-3.0,							
BH03_0.5-1.0,	BH03_2.0-2.5,							
BH04_0-0.5,	BH04_2.5-3.0,							
MW1_0-0.5,	MW1_3-3.5,							
MW2_0-0.5,	MW2_3-3.5							
80* dried soil (EA029)								
BH05_0-0.5,	BH06_0.5-1.0,	**29-Jul-2022**	**08-Aug-2022**	23-Apr-2025	✓	**15-Aug-2022**	06-Nov-2022	✓
BH06_2.5-3.0,	BH07_0.5-1.0,							
BH07_2.5-3.0,	QC101							
Snap Lock Bag - frozen on receipt at ALS (EA029)								
MW1_4.0-4.5,	MW2_4.5-5.0	**28-Jul-2022**	**08-Aug-2022**	22-Apr-2025	✓	**15-Aug-2022**	06-Nov-2022	✓
EA029-B: Acidity Trail								
80* dried soil (EA029)								
BH01_0-0.5,	BH01_2.5-3.0,	**28-Jul-2022**	**08-Aug-2022**	22-Apr-2025	✓	**15-Aug-2022**	06-Nov-2022	✓
BH02_0-0.1,	BH02_2.5-3.0,							
BH03_0.5-1.0,	BH03_2.0-2.5,							
BH04_0-0.5,	BH04_2.5-3.0,							
MW1_0-0.5,	MW1_3-3.5,							
MW2_0-0.5,	MW2_3-3.5							
80* dried soil (EA029)								
BH05_0-0.5,	BH06_0.5-1.0,	**29-Jul-2022**	**08-Aug-2022**	23-Apr-2025	✓	**15-Aug-2022**	06-Nov-2022	✓
BH06_2.5-3.0,	BH07_0.5-1.0,							
BH07_2.5-3.0,	QC101							
Snap Lock Bag - frozen on receipt at ALS (EA029)								
MW1_4.0-4.5,	MW2_4.5-5.0	**28-Jul-2022**	**08-Aug-2022**	22-Apr-2025	✓	**15-Aug-2022**	06-Nov-2022	✓
EA029-C: Sulfur Trail								
80* dried soil (EA029)								
BH01_0-0.5,	BH01_2.5-3.0,	**28-Jul-2022**	**08-Aug-2022**	22-Apr-2025	✓	**15-Aug-2022**	06-Nov-2022	✓
BH02_0-0.1,	BH02_2.5-3.0,							
BH03_0.5-1.0,	BH03_2.0-2.5,							
BH04_0-0.5,	BH04_2.5-3.0,							
MW1_0-0.5,	MW1_3-3.5,							
MW2_0-0.5,	MW2_3-3.5							
80* dried soil (EA029)								
BH05_0-0.5,	BH06_0.5-1.0,	**29-Jul-2022**	**08-Aug-2022**	23-Apr-2025	✓	**15-Aug-2022**	06-Nov-2022	✓
BH06_2.5-3.0,	BH07_0.5-1.0,							
BH07_2.5-3.0,	QC101							
Snap Lock Bag - frozen on receipt at ALS (EA029)								
MW1_4.0-4.5,	MW2_4.5-5.0	**28-Jul-2022**	**08-Aug-2022**	22-Apr-2025	✓	**15-Aug-2022**	06-Nov-2022	✓

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
EA029-D: Calcium Values								
80* dried soil (EA029)								
BH01_0-0.5,	BH01_2.5-3.0,	**28-Jul-2022**	**08-Aug-2022**	22-Apr-2025	✓	**15-Aug-2022**	06-Nov-2022	✓
BH02_0-0.1,	BH02_2.5-3.0,							
BH03_0.5-1.0,	BH03_2.0-2.5,							
BH04_0-0.5,	BH04_2.5-3.0,							
MW1_0-0.5,	MW1_3-3.5,							
MW2_0-0.5,	MW2_3-3.5							
80* dried soil (EA029)								
BH05_0-0.5,	BH06_0.5-1.0,	**29-Jul-2022**	**08-Aug-2022**	23-Apr-2025	✓	**15-Aug-2022**	06-Nov-2022	✓
BH06_2.5-3.0,	BH07_0.5-1.0,							
BH07_2.5-3.0,	QC101							
Snap Lock Bag - frozen on receipt at ALS (EA029)								
MW1_4.0-4.5,	MW2_4.5-5.0	**28-Jul-2022**	**08-Aug-2022**	22-Apr-2025	✓	**15-Aug-2022**	06-Nov-2022	✓
EA029-E: Magnesium Values								
80* dried soil (EA029)								
BH01_0-0.5,	BH01_2.5-3.0,	**28-Jul-2022**	**08-Aug-2022**	22-Apr-2025	✓	**15-Aug-2022**	06-Nov-2022	✓
BH02_0-0.1,	BH02_2.5-3.0,							
BH03_0.5-1.0,	BH03_2.0-2.5,							
BH04_0-0.5,	BH04_2.5-3.0,							
MW1_0-0.5,	MW1_3-3.5,							
MW2_0-0.5,	MW2_3-3.5							
80* dried soil (EA029)								
BH05_0-0.5,	BH06_0.5-1.0,	**29-Jul-2022**	**08-Aug-2022**	23-Apr-2025	✓	**15-Aug-2022**	06-Nov-2022	✓
BH06_2.5-3.0,	BH07_0.5-1.0,							
BH07_2.5-3.0,	QC101							
Snap Lock Bag - frozen on receipt at ALS (EA029)								
MW1_4.0-4.5,	MW2_4.5-5.0	**28-Jul-2022**	**08-Aug-2022**	22-Apr-2025	✓	**15-Aug-2022**	06-Nov-2022	✓
EA029-F: Excess Acid Neutralising Capacity								
80* dried soil (EA029)								
BH01_0-0.5,	BH01_2.5-3.0,	**28-Jul-2022**	**08-Aug-2022**	22-Apr-2025	✓	**15-Aug-2022**	06-Nov-2022	✓
BH02_0-0.1,	BH02_2.5-3.0,							
BH03_0.5-1.0,	BH03_2.0-2.5,							
BH04_0-0.5,	BH04_2.5-3.0,							
MW1_0-0.5,	MW1_3-3.5,							
MW2_0-0.5,	MW2_3-3.5							
80* dried soil (EA029)								
BH05_0-0.5,	BH06_0.5-1.0,	**29-Jul-2022**	**08-Aug-2022**	23-Apr-2025	✓	**15-Aug-2022**	06-Nov-2022	✓
BH06_2.5-3.0,	BH07_0.5-1.0,							
BH07_2.5-3.0,	QC101							
Snap Lock Bag - frozen on receipt at ALS (EA029)								
MW1_4.0-4.5,	MW2_4.5-5.0	**28-Jul-2022**	**08-Aug-2022**	22-Apr-2025	✓	**15-Aug-2022**	06-Nov-2022	✓

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
EA029-G: Retained Acidity								
80* dried soil (EA029)								
BH01_0-0.5,	BH01_2.5-3.0,	**28-Jul-2022**	**08-Aug-2022**	22-Apr-2025	✓	**15-Aug-2022**	06-Nov-2022	✓
BH02_0-0.1,	BH02_2.5-3.0,							
BH03_0.5-1.0,	BH03_2.0-2.5,							
BH04_0-0.5,	BH04_2.5-3.0,							
MW1_0-0.5,	MW1_3-3.5,							
MW2_0-0.5,	MW2_3-3.5							
80* dried soil (EA029)								
BH05_0-0.5,	BH06_0.5-1.0,	**29-Jul-2022**	**08-Aug-2022**	23-Apr-2025	✓	**15-Aug-2022**	06-Nov-2022	✓
BH06_2.5-3.0,	BH07_0.5-1.0,							
BH07_2.5-3.0,	QC101							
Snap Lock Bag - frozen on receipt at ALS (EA029)								
MW1_4.0-4.5,	MW2_4.5-5.0	**28-Jul-2022**	**08-Aug-2022**	22-Apr-2025	✓	**15-Aug-2022**	06-Nov-2022	✓
EA029-H: Acid Base Accounting								
80* dried soil (EA029)								
BH01_0-0.5,	BH01_2.5-3.0,	**28-Jul-2022**	**08-Aug-2022**	22-Apr-2025	✓	**15-Aug-2022**	06-Nov-2022	✓
BH02_0-0.1,	BH02_2.5-3.0,							
BH03_0.5-1.0,	BH03_2.0-2.5,							
BH04_0-0.5,	BH04_2.5-3.0,							
MW1_0-0.5,	MW1_3-3.5,							
MW2_0-0.5,	MW2_3-3.5							
80* dried soil (EA029)								
BH05_0-0.5,	BH06_0.5-1.0,	**29-Jul-2022**	**08-Aug-2022**	23-Apr-2025	✓	**15-Aug-2022**	06-Nov-2022	✓
BH06_2.5-3.0,	BH07_0.5-1.0,							
BH07_2.5-3.0,	QC101							
Snap Lock Bag - frozen on receipt at ALS (EA029)								
MW1_4.0-4.5,	MW2_4.5-5.0	**28-Jul-2022**	**08-Aug-2022**	22-Apr-2025	✓	**15-Aug-2022**	06-Nov-2022	✓
EA037: Ass Field Screening Analysis								
Snap Lock Bag - frozen on receipt at ALS (EA037)								
BH01_0-0.5,	BH01_2.5-3.0,	**28-Jul-2022**	**02-Aug-2022**	24-Jan-2023	✓	**02-Aug-2022**	24-Jan-2023	✓
BH02_0-0.1,	BH02_2.5-3.0,							
BH03_0.5-1.0,	BH03_2.0-2.5,							
BH04_0-0.5,	BH04_2.5-3.0,							
MW1_0-0.5,	MW1_3-3.5,							
MW2_0-0.5,	MW2_3-3.5,							
MW1_4.0-4.5,	MW2_4.5-5.0							
Snap Lock Bag - frozen on receipt at ALS (EA037)								
BH05_0-0.5,	BH06_0.5-1.0,	**29-Jul-2022**	**02-Aug-2022**	25-Jan-2023	✓	**02-Aug-2022**	25-Jan-2023	✓
BH06_2.5-3.0,	BH07_0.5-1.0,							
BH07_2.5-3.0,	QC101							

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)								
HDPE Soil Jar (EA055)								
QC102		**28-Jul-2022**	**----**	----	----	**08-Aug-2022**	11-Aug-2022	✓
Soil Glass Jar - Unpreserved (EA055)								
BH01_0-0.5,	BH01_2.5-3.0,	**28-Jul-2022**	**----**	----	----	**05-Aug-2022**	11-Aug-2022	✓
BH02_0-0.1,	BH02_2.5-3.0,							
BH03_0.5-1.0,	BH03_2.0-2.5,							
BH04_0-0.5,	BH04_2.5-3.0,							
MW1_0-0.5,	MW1_3-3.5,							
MW2_0-0.5,	MW2_3-3.5							
Soil Glass Jar - Unpreserved (EA055)								
BH05_0-0.5,	BH06_0.5-1.0,	**29-Jul-2022**	**----**	----	----	**05-Aug-2022**	12-Aug-2022	✓
BH06_2.5-3.0,	BH07_0.5-1.0,							
BH07_2.5-3.0,	QC101							
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)								
BH01_0-0.5,	BH01_2.5-3.0,	**28-Jul-2022**	**----**	----	----	**03-Aug-2022**	24-Jan-2023	✓
BH02_0-0.1,	BH02_2.5-3.0,							
BH03_0.5-1.0,	BH03_2.0-2.5,							
BH04_0-0.5,	BH04_2.5-3.0,							
MW1_0-0.5,	MW1_3-3.5,							
MW2_0-0.5,	MW2_3-3.5							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)								
BH05_0-0.5,	BH06_0.5-1.0,	**29-Jul-2022**	**----**	----	----	**03-Aug-2022**	25-Jan-2023	✓
BH06_2.5-3.0,	BH07_0.5-1.0,							
BH07_2.5-3.0,	QC101							
EG005(ED093)T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)								
BH01_0-0.5,	BH01_2.5-3.0,	**28-Jul-2022**	**08-Aug-2022**	24-Jan-2023	✓	**09-Aug-2022**	24-Jan-2023	✓
BH02_0-0.1,	BH02_2.5-3.0,							
BH03_0.5-1.0,	BH03_2.0-2.5,							
BH04_0-0.5,	BH04_2.5-3.0,							
MW1_0-0.5,	MW1_3-3.5,							
MW2_0-0.5,	MW2_3-3.5							
Soil Glass Jar - Unpreserved (EG005T)								
BH05_0-0.5,	BH06_0.5-1.0,	**29-Jul-2022**	**08-Aug-2022**	25-Jan-2023	✓	**09-Aug-2022**	25-Jan-2023	✓
BH06_2.5-3.0,	BH07_0.5-1.0,							
BH07_2.5-3.0,	QC101							

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS								
Soil Glass Jar - Unpreserved (EG020T)								
BH01_0-0.5,	BH01_2.5-3.0,	**28-Jul-2022**	**08-Aug-2022**	24-Jan-2023	✓	**09-Aug-2022**	24-Jan-2023	✓
BH02_0-0.1,	BH02_2.5-3.0,							
BH03_0.5-1.0,	BH03_2.0-2.5,							
BH04_0-0.5,	BH04_2.5-3.0,							
MW1_0-0.5,	MW1_3-3.5,							
MW2_0-0.5,	MW2_3-3.5							
Soil Glass Jar - Unpreserved (EG020T)								
BH05_0-0.5,	BH06_0.5-1.0,	**29-Jul-2022**	**08-Aug-2022**	25-Jan-2023	✓	**09-Aug-2022**	25-Jan-2023	✓
BH06_2.5-3.0,	BH07_0.5-1.0,							
BH07_2.5-3.0,	QC101							
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T)								
BH01_0-0.5,	BH01_2.5-3.0,	**28-Jul-2022**	**08-Aug-2022**	25-Aug-2022	✓	**09-Aug-2022**	25-Aug-2022	✓
BH02_0-0.1,	BH02_2.5-3.0,							
BH03_0.5-1.0,	BH03_2.0-2.5,							
BH04_0-0.5,	BH04_2.5-3.0,							
MW1_0-0.5,	MW1_3-3.5,							
MW2_0-0.5,	MW2_3-3.5							
Soil Glass Jar - Unpreserved (EG035T)								
BH05_0-0.5,	BH06_0.5-1.0,	**29-Jul-2022**	**08-Aug-2022**	26-Aug-2022	✓	**09-Aug-2022**	26-Aug-2022	✓
BH06_2.5-3.0,	BH07_0.5-1.0,							
BH07_2.5-3.0,	QC101							
EG048: Hexavalent Chromium (Alkaline Digest)								
Soil Glass Jar - Unpreserved (EG048G)								
BH01_0-0.5,	BH01_2.5-3.0,	**28-Jul-2022**	**10-Aug-2022**	25-Aug-2022	✓	**10-Aug-2022**	17-Aug-2022	✓
BH02_0-0.1,	BH02_2.5-3.0,							
BH03_0.5-1.0,	BH03_2.0-2.5,							
BH04_0-0.5,	BH04_2.5-3.0,							
MW1_0-0.5,	MW1_3-3.5,							
MW2_0-0.5,	MW2_3-3.5							
Soil Glass Jar - Unpreserved (EG048G)								
BH05_0-0.5,	BH06_0.5-1.0,	**29-Jul-2022**	**10-Aug-2022**	26-Aug-2022	✓	**10-Aug-2022**	17-Aug-2022	✓
BH06_2.5-3.0,	BH07_0.5-1.0,							
BH07_2.5-3.0,	QC101							

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
EK026SF: Total CN by Segmented Flow Analyser								
Soil Glass Jar - Unpreserved (EK026SF)								
BH01_0-0.5,	BH01_2.5-3.0,	**28-Jul-2022**	**10-Aug-2022**	11-Aug-2022	✓	**11-Aug-2022**	24-Aug-2022	✓
BH02_0-0.1,	BH02_2.5-3.0,							
BH03_0.5-1.0,	BH03_2.0-2.5,							
BH04_0-0.5,	BH04_2.5-3.0,							
MW1_0-0.5,	MW1_3-3.5,							
MW2_0-0.5,	MW2_3-3.5							
Soil Glass Jar - Unpreserved (EK026SF)								
BH05_0-0.5,	BH06_0.5-1.0,	**29-Jul-2022**	**10-Aug-2022**	12-Aug-2022	✓	**11-Aug-2022**	24-Aug-2022	✓
BH06_2.5-3.0,	BH07_0.5-1.0,							
BH07_2.5-3.0,	QC101							
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser								
Soil Glass Jar - Unpreserved (EK028SF)								
BH01_0-0.5,	BH01_2.5-3.0,	**28-Jul-2022**	**10-Aug-2022**	11-Aug-2022	✓	**11-Aug-2022**	24-Aug-2022	✓
BH02_0-0.1,	BH02_2.5-3.0,							
BH03_0.5-1.0,	BH03_2.0-2.5,							
BH04_0-0.5,	BH04_2.5-3.0,							
MW1_0-0.5,	MW1_3-3.5,							
MW2_0-0.5,	MW2_3-3.5							
Soil Glass Jar - Unpreserved (EK028SF)								
BH05_0-0.5,	BH06_0.5-1.0,	**29-Jul-2022**	**10-Aug-2022**	12-Aug-2022	✓	**11-Aug-2022**	24-Aug-2022	✓
BH06_2.5-3.0,	BH07_0.5-1.0,							
BH07_2.5-3.0,	QC101							
EK040T: Fluoride Total								
Snap Lock Bag (EK040T)								
BH01_0-0.5,	BH01_2.5-3.0,	**28-Jul-2022**	**04-Aug-2022**	25-Aug-2022	✓	**08-Aug-2022**	25-Aug-2022	✓
BH02_0-0.1,	BH02_2.5-3.0,							
BH03_0.5-1.0,	BH03_2.0-2.5,							
BH04_0-0.5,	BH04_2.5-3.0							
Snap Lock Bag (EK040T)								
BH05_0-0.5,	BH06_0.5-1.0,	**29-Jul-2022**	**04-Aug-2022**	26-Aug-2022	✓	**08-Aug-2022**	26-Aug-2022	✓
BH06_2.5-3.0,	BH07_0.5-1.0,							
BH07_2.5-3.0,	QC101							
Soil Glass Jar - Unpreserved (EK040T)								
MW1_0-0.5,	MW1_3-3.5,	**28-Jul-2022**	**04-Aug-2022**	25-Aug-2022	✓	**08-Aug-2022**	25-Aug-2022	✓
MW2_0-0.5,	MW2_3-3.5							

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
EP035G: Total Phenol by Discrete Analyser							
Soil Glass Jar - Unpreserved (EP035SF)							
MW1_0-0.5, MW1_3-3.5, MW2_0-0.5, MW2_3-3.5	**28-Jul-2022**	**08-Aug-2022**	11-Aug-2022	✓	**09-Aug-2022**	11-Aug-2022	✓
Soil Glass Jar - Unpreserved (EP035SF)							
BH01_0-0.5, BH01_2.5-3.0, BH02_0-0.1, BH02_2.5-3.0, BH03_0.5-1.0, BH03_2.0-2.5, BH04_0-0.5, BH04_2.5-3.0	**28-Jul-2022**	**10-Aug-2022**	11-Aug-2022	✓	**11-Aug-2022**	11-Aug-2022	✓
Soil Glass Jar - Unpreserved (EP035SF)							
QC101	**29-Jul-2022**	**08-Aug-2022**	12-Aug-2022	✓	**09-Aug-2022**	12-Aug-2022	✓
Soil Glass Jar - Unpreserved (EP035SF)							
BH05_0-0.5, BH06_0.5-1.0, BH06_2.5-3.0, BH07_0.5-1.0, BH07_2.5-3.0	**29-Jul-2022**	**10-Aug-2022**	12-Aug-2022	✓	**11-Aug-2022**	12-Aug-2022	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066)							
BH01_0-0.5, BH01_2.5-3.0, BH02_0-0.1, BH02_2.5-3.0, BH03_0.5-1.0, BH03_2.0-2.5, BH04_0-0.5, BH04_2.5-3.0, MW1_0-0.5, MW1_3-3.5, MW2_0-0.5, MW2_3-3.5	**28-Jul-2022**	**04-Aug-2022**	11-Aug-2022	✓	**08-Aug-2022**	13-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP066)							
BH05_0-0.5, BH06_0.5-1.0, BH06_2.5-3.0, BH07_2.5-3.0, QC101	**29-Jul-2022**	**04-Aug-2022**	12-Aug-2022	✓	**08-Aug-2022**	13-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP066)							
BH07_0.5-1.0	**29-Jul-2022**	**08-Aug-2022**	12-Aug-2022	✓	**09-Aug-2022**	17-Sep-2022	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068)							
BH01_0-0.5, BH01_2.5-3.0, BH02_0-0.1, BH02_2.5-3.0, BH03_0.5-1.0, BH03_2.0-2.5, BH04_0-0.5, BH04_2.5-3.0, MW1_0-0.5, MW1_3-3.5, MW2_0-0.5, MW2_3-3.5	**28-Jul-2022**	**04-Aug-2022**	11-Aug-2022	✓	**08-Aug-2022**	13-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP068)							
BH05_0-0.5, BH06_0.5-1.0, BH06_2.5-3.0, BH07_2.5-3.0, QC101	**29-Jul-2022**	**04-Aug-2022**	12-Aug-2022	✓	**08-Aug-2022**	13-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP068)							
BH07_0.5-1.0	**29-Jul-2022**	**08-Aug-2022**	12-Aug-2022	✓	**09-Aug-2022**	17-Sep-2022	✓

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
EP070: Total Petroleum Hydrocarbons - Speciation							
Soil Glass Jar - Unpreserved (EP070)							
BH01_0-0.5, BH01_2.5-3.0, BH02_0-0.1, BH02_2.5-3.0, BH03_0.5-1.0, BH03_2.0-2.5, BH04_0-0.5, BH04_2.5-3.0, MW1_0-0.5, MW1_3-3.5, MW2_0-0.5, MW2_3-3.5	**28-Jul-2022**	**04-Aug-2022**	11-Aug-2022	✓	**09-Aug-2022**	13-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP070)							
BH05_0-0.5, BH06_0.5-1.0, BH06_2.5-3.0, BH07_2.5-3.0, QC101	**29-Jul-2022**	**04-Aug-2022**	12-Aug-2022	✓	**09-Aug-2022**	13-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP070)							
BH07_0.5-1.0	**29-Jul-2022**	**08-Aug-2022**	12-Aug-2022	✓	**09-Aug-2022**	17-Sep-2022	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP074)							
BH01_0-0.5, BH01_2.5-3.0, BH02_0-0.1, BH02_2.5-3.0, BH03_0.5-1.0, BH03_2.0-2.5, BH04_0-0.5, BH04_2.5-3.0, MW1_0-0.5, MW1_3-3.5, MW2_0-0.5, MW2_3-3.5	**28-Jul-2022**	**03-Aug-2022**	04-Aug-2022	✓	**03-Aug-2022**	04-Aug-2022	✓
Soil Glass Jar - Unpreserved (EP074)							
BH05_0-0.5, BH06_0.5-1.0, BH06_2.5-3.0, BH07_2.5-3.0, QC101	**29-Jul-2022**	**03-Aug-2022**	05-Aug-2022	✓	**03-Aug-2022**	05-Aug-2022	✓
Soil Glass Jar - Unpreserved (EP074)							
BH07_0.5-1.0	**29-Jul-2022**	**05-Aug-2022**	05-Aug-2022	✓	**08-Aug-2022**	05-Aug-2022	×
EP075(SIM)A: Phenolic Compounds							
Soil Glass Jar - Unpreserved (EP075(SIM))							
BH01_0-0.5, BH01_2.5-3.0, BH02_0-0.1, BH02_2.5-3.0, BH03_0.5-1.0, BH03_2.0-2.5, BH04_0-0.5, BH04_2.5-3.0, MW1_0-0.5, MW1_3-3.5, MW2_0-0.5, MW2_3-3.5	**28-Jul-2022**	**04-Aug-2022**	11-Aug-2022	✓	**08-Aug-2022**	13-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
BH05_0-0.5, BH06_0.5-1.0, BH06_2.5-3.0, BH07_2.5-3.0, QC101	**29-Jul-2022**	**04-Aug-2022**	12-Aug-2022	✓	**08-Aug-2022**	13-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
BH07_0.5-1.0	**29-Jul-2022**	**08-Aug-2022**	12-Aug-2022	✓	**09-Aug-2022**	17-Sep-2022	✓

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
BH01_0-0.5, BH01_2.5-3.0, BH02_0-0.1, BH02_2.5-3.0, BH03_0.5-1.0, BH03_2.0-2.5, BH04_0-0.5, BH04_2.5-3.0, MW1_0-0.5, MW1_3-3.5, MW2_0-0.5, MW2_3-3.5	**28-Jul-2022**	**04-Aug-2022**	11-Aug-2022	✓	**08-Aug-2022**	13-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
BH05_0-0.5, BH06_0.5-1.0, BH06_2.5-3.0, BH07_2.5-3.0, QC101	**29-Jul-2022**	**04-Aug-2022**	12-Aug-2022	✓	**08-Aug-2022**	13-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
BH07_0.5-1.0	**29-Jul-2022**	**08-Aug-2022**	12-Aug-2022	✓	**09-Aug-2022**	17-Sep-2022	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
BH01_0-0.5, BH01_2.5-3.0, BH02_0-0.1, BH02_2.5-3.0, BH03_0.5-1.0, BH03_2.0-2.5, BH04_0-0.5, BH04_2.5-3.0, MW1_0-0.5, MW1_3-3.5, MW2_0-0.5, MW2_3-3.5	**28-Jul-2022**	**03-Aug-2022**	11-Aug-2022	✓	**03-Aug-2022**	11-Aug-2022	✓
Soil Glass Jar - Unpreserved (EP071)							
BH01_0-0.5, BH01_2.5-3.0, BH02_0-0.1, BH02_2.5-3.0, BH03_0.5-1.0, BH03_2.0-2.5, BH04_0-0.5, BH04_2.5-3.0, MW1_0-0.5, MW1_3-3.5, MW2_0-0.5, MW2_3-3.5	**28-Jul-2022**	**04-Aug-2022**	11-Aug-2022	✓	**08-Aug-2022**	13-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP080)							
BH05_0-0.5, BH06_0.5-1.0, BH06_2.5-3.0, BH07_2.5-3.0, QC101	**29-Jul-2022**	**03-Aug-2022**	12-Aug-2022	✓	**03-Aug-2022**	12-Aug-2022	✓
Soil Glass Jar - Unpreserved (EP071)							
BH05_0-0.5, BH06_0.5-1.0, BH06_2.5-3.0, BH07_2.5-3.0, QC101	**29-Jul-2022**	**04-Aug-2022**	12-Aug-2022	✓	**08-Aug-2022**	13-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP080)							
BH07_0.5-1.0	**29-Jul-2022**	**05-Aug-2022**	12-Aug-2022	✓	**08-Aug-2022**	12-Aug-2022	✓
Soil Glass Jar - Unpreserved (EP071)							
BH07_0.5-1.0	**29-Jul-2022**	**08-Aug-2022**	12-Aug-2022	✓	**09-Aug-2022**	17-Sep-2022	✓

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
BH01_0-0.5, BH01_2.5-3.0, BH02_0-0.1, BH02_2.5-3.0, BH03_0.5-1.0, BH03_2.0-2.5, BH04_0-0.5, BH04_2.5-3.0, MW1_0-0.5, MW1_3-3.5, MW2_0-0.5, MW2_3-3.5	**28-Jul-2022**	**03-Aug-2022**	11-Aug-2022	✓	**03-Aug-2022**	11-Aug-2022	✓
Soil Glass Jar - Unpreserved (EP071)							
BH01_0-0.5, BH01_2.5-3.0, BH02_0-0.1, BH02_2.5-3.0, BH03_0.5-1.0, BH03_2.0-2.5, BH04_0-0.5, BH04_2.5-3.0, MW1_0-0.5, MW1_3-3.5, MW2_0-0.5, MW2_3-3.5	**28-Jul-2022**	**04-Aug-2022**	11-Aug-2022	✓	**08-Aug-2022**	13-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP080)							
BH05_0-0.5, BH06_0.5-1.0, BH06_2.5-3.0, BH07_2.5-3.0, QC101	**29-Jul-2022**	**03-Aug-2022**	12-Aug-2022	✓	**03-Aug-2022**	12-Aug-2022	✓
Soil Glass Jar - Unpreserved (EP071)							
BH05_0-0.5, BH06_0.5-1.0, BH06_2.5-3.0, BH07_2.5-3.0, QC101	**29-Jul-2022**	**04-Aug-2022**	12-Aug-2022	✓	**08-Aug-2022**	13-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP080)							
BH07_0.5-1.0	**29-Jul-2022**	**05-Aug-2022**	12-Aug-2022	✓	**08-Aug-2022**	12-Aug-2022	✓
Soil Glass Jar - Unpreserved (EP071)							
BH07_0.5-1.0	**29-Jul-2022**	**08-Aug-2022**	12-Aug-2022	✓	**09-Aug-2022**	17-Sep-2022	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
BH01_0-0.5, BH01_2.5-3.0, BH02_0-0.1, BH02_2.5-3.0, BH03_0.5-1.0, BH03_2.0-2.5, BH04_0-0.5, BH04_2.5-3.0, MW1_0-0.5, MW1_3-3.5, MW2_0-0.5, MW2_3-3.5	**28-Jul-2022**	**03-Aug-2022**	11-Aug-2022	✓	**03-Aug-2022**	11-Aug-2022	✓
Soil Glass Jar - Unpreserved (EP080)							
BH05_0-0.5, BH06_0.5-1.0, BH06_2.5-3.0, BH07_2.5-3.0, QC101	**29-Jul-2022**	**03-Aug-2022**	12-Aug-2022	✓	**03-Aug-2022**	12-Aug-2022	✓
Soil Glass Jar - Unpreserved (EP080)							
BH07_0.5-1.0	**29-Jul-2022**	**05-Aug-2022**	12-Aug-2022	✓	**08-Aug-2022**	12-Aug-2022	✓

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
EP202A: Phenoxyacetic Acid Herbicides by LCMS							
Soil Glass Jar - Unpreserved (EP202)							
BH01_0-0.5, BH01_2.5-3.0, BH02_0-0.1, BH02_2.5-3.0, BH03_0.5-1.0, BH03_2.0-2.5, BH04_0-0.5, BH04_2.5-3.0, MW1_0-0.5, MW1_3-3.5, MW2_0-0.5, MW2_3-3.5	**28-Jul-2022**	**08-Aug-2022**	11-Aug-2022	✓	**08-Aug-2022**	17-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP202)							
BH05_0-0.5, BH06_0.5-1.0, BH06_2.5-3.0, BH07_0.5-1.0, BH07_2.5-3.0	**29-Jul-2022**	**08-Aug-2022**	12-Aug-2022	✓	**08-Aug-2022**	17-Sep-2022	✓
Soil Glass Jar - Unpreserved (EP202)							
QC101	**29-Jul-2022**	**10-Aug-2022**	12-Aug-2022	✓	**10-Aug-2022**	19-Sep-2022	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X)							
BH01_0-0.5, BH01_2.5-3.0, BH02_0-0.1, BH02_2.5-3.0, BH03_0.5-1.0, BH03_2.0-2.5, BH04_0-0.5, BH04_2.5-3.0, MW1_0-0.5, MW1_3-3.5, MW2_0-0.5, MW2_3-3.5, QC102	**28-Jul-2022**	**12-Aug-2022**	24-Jan-2023	✓	**12-Aug-2022**	21-Sep-2022	✓
HDPE Soil Jar (EP231X)							
BH05_0-0.5, BH06_0.5-1.0, BH06_2.5-3.0, BH07_0.5-1.0, BH07_2.5-3.0, QC101	**29-Jul-2022**	**12-Aug-2022**	25-Jan-2023	✓	**12-Aug-2022**	21-Sep-2022	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X)							
BH01_0-0.5, BH01_2.5-3.0, BH02_0-0.1, BH02_2.5-3.0, BH03_0.5-1.0, BH03_2.0-2.5, BH04_0-0.5, BH04_2.5-3.0, MW1_0-0.5, MW1_3-3.5, MW2_0-0.5, MW2_3-3.5, QC102	**28-Jul-2022**	**12-Aug-2022**	24-Jan-2023	✓	**12-Aug-2022**	21-Sep-2022	✓
HDPE Soil Jar (EP231X)							
BH05_0-0.5, BH06_0.5-1.0, BH06_2.5-3.0, BH07_0.5-1.0, BH07_2.5-3.0, QC101	**29-Jul-2022**	**12-Aug-2022**	25-Jan-2023	✓	**12-Aug-2022**	21-Sep-2022	✓

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
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) BH01_0-0.5, BH01_2.5-3.0, BH02_0-0.1, BH02_2.5-3.0, BH03_0.5-1.0, BH03_2.0-2.5, BH04_0-0.5, BH04_2.5-3.0, MW1_0-0.5, MW1_3-3.5, MW2_0-0.5, MW2_3-3.5, QC102	**28-Jul-2022**	**12-Aug-2022**	24-Jan-2023	✓	**12-Aug-2022**	21-Sep-2022	✓
HDPE Soil Jar (EP231X) BH05_0-0.5, BH06_0.5-1.0, BH06_2.5-3.0, BH07_0.5-1.0, BH07_2.5-3.0, QC101	**29-Jul-2022**	**12-Aug-2022**	25-Jan-2023	✓	**12-Aug-2022**	21-Sep-2022	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) BH01_0-0.5, BH01_2.5-3.0, BH02_0-0.1, BH02_2.5-3.0, BH03_0.5-1.0, BH03_2.0-2.5, BH04_0-0.5, BH04_2.5-3.0, MW1_0-0.5, MW1_3-3.5, MW2_0-0.5, MW2_3-3.5, QC102	**28-Jul-2022**	**12-Aug-2022**	24-Jan-2023	✓	**12-Aug-2022**	21-Sep-2022	✓
HDPE Soil Jar (EP231X) BH05_0-0.5, BH06_0.5-1.0, BH06_2.5-3.0, BH07_0.5-1.0, BH07_2.5-3.0, QC101	**29-Jul-2022**	**12-Aug-2022**	25-Jan-2023	✓	**12-Aug-2022**	21-Sep-2022	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) BH01_0-0.5, BH01_2.5-3.0, BH02_0-0.1, BH02_2.5-3.0, BH03_0.5-1.0, BH03_2.0-2.5, BH04_0-0.5, BH04_2.5-3.0, MW1_0-0.5, MW1_3-3.5, MW2_0-0.5, MW2_3-3.5, QC102	**28-Jul-2022**	**12-Aug-2022**	24-Jan-2023	✓	**12-Aug-2022**	21-Sep-2022	✓
HDPE Soil Jar (EP231X) BH05_0-0.5, BH06_0.5-1.0, BH06_2.5-3.0, BH07_0.5-1.0, BH07_2.5-3.0, QC101	**29-Jul-2022**	**12-Aug-2022**	25-Jan-2023	✓	**12-Aug-2022**	21-Sep-2022	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA005P: pH by PC Titrator								
Clear Plastic Bottle - Natural (EA005-P)								
RN01,	RN02	**29-Jul-2022**	**----**	----	----	**05-Aug-2022**	29-Jul-2022	×
EG020T: Total Metals by ICP-MS								
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG020B-T)								
RN01,	RN02	**29-Jul-2022**	**04-Aug-2022**	25-Jan-2023	✓	**04-Aug-2022**	25-Jan-2023	✓
EG035T: Total Recoverable Mercury by FIMS								
Clear Plastic Bottle - Unfiltered; Lab-acidified (EG035T)								
RN01,	RN02	**29-Jul-2022**	**----**	----	----	**04-Aug-2022**	26-Aug-2022	✓
EG050T: Total Hexavalent Chromium								
Clear Plastic Bottle - NaOH (EG050G-T)								
RN01,	RN02	**29-Jul-2022**	**----**	----	----	**10-Aug-2022**	26-Aug-2022	✓
EK026SF: Total CN by Segmented Flow Analyser								
Opaque plastic bottle - NaOH (EK026SF)								
RN01,	RN02	**29-Jul-2022**	**----**	----	----	**02-Aug-2022**	12-Aug-2022	✓
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser								
Opaque plastic bottle - NaOH (EK028SF)								
RN01,	RN02	**29-Jul-2022**	**----**	----	----	**02-Aug-2022**	12-Aug-2022	✓
EK040P: Fluoride by PC Titrator								
Clear Plastic Bottle - Natural (EK040P)								
RN01,	RN02	**29-Jul-2022**	**----**	----	----	**05-Aug-2022**	26-Aug-2022	✓
EP066: Polychlorinated Biphenyls (PCB)								
Amber Glass Bottle - Unpreserved (EP066)								
RN01,	RN02	**29-Jul-2022**	**04-Aug-2022**	05-Aug-2022	✓	**05-Aug-2022**	13-Sep-2022	✓
EP068A: Organochlorine Pesticides (OC)								
Amber Glass Bottle - Unpreserved (EP068)								
RN01,	RN02	**29-Jul-2022**	**04-Aug-2022**	05-Aug-2022	✓	**05-Aug-2022**	13-Sep-2022	✓
EP070: Total Petroleum Hydrocarbons - Speciation								
Amber Glass Bottle - Unpreserved (EP070)								
RN01,	RN02	**29-Jul-2022**	**04-Aug-2022**	05-Aug-2022	✓	**10-Aug-2022**	13-Sep-2022	✓
EP080/071: Total Petroleum Hydrocarbons								
Amber Glass Bottle - Unpreserved (EP071)								
RN01,	RN02	**29-Jul-2022**	**04-Aug-2022**	05-Aug-2022	✓	**05-Aug-2022**	13-Sep-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
TSW 041,	TSW 041 Control	**27-Jul-2022**	**03-Aug-2022**	10-Aug-2022	✓	**03-Aug-2022**	10-Aug-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
TBW 865		**28-Jul-2022**	**03-Aug-2022**	11-Aug-2022	✓	**03-Aug-2022**	11-Aug-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
RN01,	RN02	**29-Jul-2022**	**03-Aug-2022**	12-Aug-2022	✓	**03-Aug-2022**	12-Aug-2022	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
Amber Glass Bottle - Unpreserved (EP071)								
RN01,	RN02	**29-Jul-2022**	**04-Aug-2022**	05-Aug-2022	✓	**05-Aug-2022**	13-Sep-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
TSW 041,	TSW 041 Control	**27-Jul-2022**	**03-Aug-2022**	10-Aug-2022	✓	**03-Aug-2022**	10-Aug-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
TBW 865		**28-Jul-2022**	**03-Aug-2022**	11-Aug-2022	✓	**03-Aug-2022**	11-Aug-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
RN01,	RN02	**29-Jul-2022**	**03-Aug-2022**	12-Aug-2022	✓	**03-Aug-2022**	12-Aug-2022	✓
EP080: BTEXN								
Amber VOC Vial - Sulfuric Acid (EP080)								
TSW 041,	TSW 041 Control	**27-Jul-2022**	**03-Aug-2022**	10-Aug-2022	✓	**03-Aug-2022**	10-Aug-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
TBW 865		**28-Jul-2022**	**03-Aug-2022**	11-Aug-2022	✓	**03-Aug-2022**	11-Aug-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080)								
RN01,	RN02	**29-Jul-2022**	**03-Aug-2022**	12-Aug-2022	✓	**03-Aug-2022**	12-Aug-2022	✓

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)							
ASS Field Screening Analysis	EA037	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	3	18	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	3	18	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH (1:5)	EA002	3	28	**10.71**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	4	37	**10.81**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	3	18	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS	EG020T	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035SF	3	19	**15.79**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Speciation	EP070	3	18	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	18	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	18	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	3	18	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
WAD Cyanide by Segmented Flow Analyser	EK028SF	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH (1:5)	EA002	4	28	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	2	37	**5.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Total Metals by ICP-MS	EG020T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035SF	2	19	**10.53**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Speciation	EP070	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
WAD Cyanide by Segmented Flow Analyser	EK028SF	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	2	37	**5.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS	EG020T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035SF	2	19	**10.53**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Speciation	EP070	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
WAD Cyanide by Segmented Flow Analyser	EK028SF	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	2	37	**5.41**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Fluoride	EK040T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS	EG020T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Phenol By Discrete Analyser	EP035SF	2	19	**10.53**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
TPH - Speciation	EP070	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
WAD Cyanide by Segmented Flow Analyser	EK028SF	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Fluoride by Auto Titrator	EK040P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Total	EG050G-T	1	5	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	2	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	2	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	2	12	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	7	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite B	EG020B-T	1	2	**50.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Speciation	EP070	0	2	**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
Weak Acid Dissociable Cyanide by Segmented Flow Analyser	EK028SF	2	13	**15.38**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Fluoride by Auto Titrator	EK040P	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Total	EG050G-T	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	2	12	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite B	EG020B-T	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Speciation	EP070	1	2	**50.00**	**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
Weak Acid Dissociable Cyanide by Segmented Flow Analyser	EK028SF	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Method Blanks (MB) - Continued							
Fluoride by Auto Titrator	EK040P	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Total	EG050G-T	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite B	EG020B-T	1	2	**50.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Speciation	EP070	1	2	**50.00**	**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
Weak Acid Dissociable Cyanide by Segmented Flow Analyser	EK028SF	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Fluoride by Auto Titrator	EK040P	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Total	EG050G-T	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	2	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	2	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	7	**14.29**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Speciation	EP070	0	2	**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
Weak Acid Dissociable Cyanide by Segmented Flow Analyser	EK028SF	1	13	**7.69**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
pH (1:5)	EA002	SOIL	In house: Referenced to Rayment and Lyons 4A1 and APHA 4500H+. pH is determined on soil samples after a 1:5 soil/water leach. This method is compliant with NEPM Schedule B(3).
Suspension Peroxide Oxidation-Combined Acidity and Sulphate	EA029	SOIL	In house: Referenced to Ahern et al 2004 - a suspension peroxide oxidation method following the 'sulfur trail' by determining the level of 1M KCL extractable sulfur and the sulfur level after oxidation of soil sulphides. The 'acidity trail' is followed by measurement of TAA, TPA and TSA. Liming Rate is based on results for samples as submitted and incorporates a minimum safety factor of 1.5.
ASS Field Screening Analysis	* EA037	SOIL	In house: Referenced to Acid Sulfate Soils Laboratory Methods Guidelines. As received samples are tested for pH field and pH fox and assessed for a reaction rating.
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 Metals by ICP-MS	EG020T	SOIL	In house: Referenced to APHA 3125; USEPA SW846 - 6020. Metals in solids are determined following an appropriate acid digestion. The ICPMS technique ionizes selected elements. Ions are passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass / charge ratios prior to measurement by a discrete dynode ion detector. 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 (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	SOIL	In house: Referenced to USEPA SW846, Method 3060. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
Total Cyanide by Segmented Flow Analyser	EK026SF	SOIL	In house: Referenced to APHA 4500-CN C / ASTM D7511 / ISO 14403. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM Schedule B(3).
WAD Cyanide by Segmented Flow Analyser	EK028SF	SOIL	In house: Referenced to APHA 4500-CN C&O / ISO 14403. Caustic leachates of soil samples are introduced into an automated segmented flow analyser. Hydrogen cyanide is liberated from a slightly acidified (pH 4.5) and is dialysed. Tight cyanide complexes that would not be amenable to oxidation by chlorine are not converted. Iron cyanide complexes are precipitated with zinc acetate. Liberated HCN diffuses through a membrane into a stream of sodium hydroxide where it is carried as CN- The cyanide in caustic solution is buffered to pH 5.2 and further converted to cyanogen chloride by reaction with chloramine-T. Cyanogen chloride subsequently reacts with 4 ¿pyridine carboxylic and 1,3 - dimethylbarbituric acids to give a red colour complex. This colour is measured at 600 nm. This method is compliant with NEPM Schedule B(3).
Total Fluoride	EK040T	SOIL	(In-house) Total fluoride is determined by ion specific electrode (ISE) in a solution obtained after a Sodium Carbonate / Potassium Carbonate fusion dissolution.
Total Phenol By Discrete Analyser	EP035SF	SOIL	In house: Referenced to ISO 14402. Phenols are extracted in 1M NaOH. The extract is diluted by 10 and then in-line-distilled at pH 1- 4. The distillate, containing steam-volatile phenolic compounds is then oxidised by hexacyanoferrate(III). The resulting quinones react with 4-aminoantipyrine forming red condensation products, which are measured spectrometrically in a flow spectrometer at 505 nm. This method is compliant with NEPM Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	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 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).
TPH - Speciation	EP070	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 - C36. This method is compliant with the QC requirements of 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).
Volatile Organic Compounds	EP074	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. This method is 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)

Analytical Methods	Method	Matrix	Method Descriptions
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.
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202	SOIL	In house: LCMS (Electrospray in negative mode). Residues of acid herbicides are extracted from soil samples under the alkaline condition. An aliquot of the alkaline aqueous phase is taken and acidified before a SPE cleanup. After eluting off from the SPE cartridge, residues of acid herbicides are dissolved in HPLC mobile phase prior to instrument analysis.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-house: Analysis of soils by solvent extraction followed by LC-Electrospray-MS-MS, Negative Mode using MRM using internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to a portion of soil which is then extracted with MTBE and an ion pairing reagent. A portion of extract is exchanged into the analytical solvent mixture, combined with an equal volume reagent water and filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite B	EG020B-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Hexavalent Chromium by Discrete Analyser - Total	EG050G-T	WATER	In house: Referenced to APHA 3500 Cr-A & B. Hexavalent chromium is determined directly on water sample by Descrete Analyser as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM Schedule B(3).
Total Cyanide by Segmented Flow Analyser	EK026SF	WATER	In house: Referenced to APHA 4500-CN C&O / ASTM D7511 / ISO 14403. Sodium hydroxide preserved samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
Weak Acid Dissociable Cyanide by Segmented Flow Analyser	EK028SF	WATER	In house: Referenced to APHA 4500-CN C&O / ISO 14403. Samples preserved with sodium hydroxide are introduced into an automated segmented flow analyser. Hydrogen cyanide is liberated from a slightly acidified (pH 4.5) and is dialysed. Tight cyanide complexes that would not be amenable to oxidation by chlorine are not converted. Iron cyanide complexes are precipitated with zinc acetate. Liberated HCN diffuses through a membrane into a stream of sodium hydroxide where it is carried as CN- The cyanide in caustic solution is buffered to pH 5.2 and further converted to cyanogen chloride by reaction with chloramine-T. Cyanogen chloride subsequently reacts with 4 ¿pyridine carboxylic and 1,3 - dimethylbarbituric acids to give a red colour complex. This colour is measured at 600 nm. This method is compliant with NEPM Schedule B(3)
Fluoride by Auto Titrator	EK040P	WATER	In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	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)
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)
TPH - Speciation	EP070	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 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)
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
NaOH leach for CN in Soils	CN-PR	SOIL	In house: APHA 4500 CN. Samples are extracted by end-over-end tumbling with NaOH.
Alkaline digestion for Hexavalent Chromium	EG048PR	SOIL	In house: Referenced to USEPA SW846, Method 3060A.
Total Fluoride	EK040T-PR	SOIL	In house: Samples are fused with Sodium Carbonate / Potassium Carbonate flux.
Drying only	EN020D	SOIL	In house
Drying at 85 degrees, bagging and labelling (ASS)	EN020PR	SOIL	In house
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of reagent grade water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.

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).
Extraction for Total Phenols in soil	EP035-PR	SOIL	In house: Soil sub-sample is extracted in 1M NaOH by tumbling for between 6 and 16 hours. The resulting extract is diluted 10 times with reagent grade water prior to analysis.
Extraction for Phenoxy Acid Herbicides in Soils.	EP202-PR	SOIL	In-House: Alkaline extract followed by SPE clean up of acidified portion of the sample extract.
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.
Tumbler Extraction of Solids (Option B - Non-concentrating)	ORG17-SP	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.
QuECheRS Extraction of Solids	ORG71	SOIL	In house: Sequential extractions with Acetonitrile/Methanol by shaking. Extraction efficiency aided by the addition of salts under acidic conditions. Where relevant, interferences from co-extracted organics are removed with dispersive clean-up media (dSPE). The extract is either diluted or concentrated and exchanged into the analytical solvent.
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)
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.

CHAIN OF CUSTODY

ALS Laboratory: please tick →

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CLIENT: Aurecon	**TURNAROUND REQUIREMENTS :** (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Standard TAT **(List due date):** ☐ Non Standard or urgent TAT **(List due date):**
OFFICE: Level 5, 863 Hay Street, Perth, WA 6000		
PROJECT: Bunbry Quantem Terminal	**ALS QUOTE NO.:**	**COC SEQUENCE NUMBER (Circle)** COC: 1 2 3 4 5 6 7 OF: 1 2 3 4 5 6 7
PURCHASE ORDER NUMBER:	**COUNTRY OF ORIGIN: AUSTRALIA**	
PROJECT MANAGER: Mathew Kemp	**CONTACT PH:** +64 21 319069	
SAMPLER: Ali Anwar	**SAMPLER MOBILE:** 0421 876 595	
COC Emailed to ALS?	**EDD FORMAT (or default):**	
~~Email Reports to: ali.anwar@aurecongroup.com and nathan.seaver@aurecongroup.com~~		
Email Invoice to: vinderinvoices@aurecongroup.com and mathew.kemp@aurecongroup.com		

FOR LABORATORY USE ONLY (Circle)

Custody Seal Intact?	Yes	No	N/A
Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt:		°C	
Other comment:	10.7		

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE/TIME:	DATE/TIME: NB 17:00 29.07.22	DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE (refer to codes below)	TOTAL BOTTLES	P19/1	EP231X	EA200	EP080	SPOCAS	pH2+pHPOX			Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	BH01_0-0.5	28/7/22	S		6	X	X	X		X	X			
2	BH01_2.5-3.0	〃	S		6	X	X	X		X	X			
3	BH02_0-0.5	〃	S		6	X	X	X		X	X			
4	BH02_2.5-3.0	〃	S		6	X	X	X		X	X			
5	BH03_1-1.5	〃	S		6	X	X	X		X	X			
6	BH03_2.5-3.0	〃	S		6	X	X	X		X	X			
7	BH04_0-0.5	〃	S		6	X	X	X		X	X			
8	BH04_2.5-3.0	〃	S		6	X	X	X		X	X			
9	BH05_1-1.5	29/7/22	S		6	X	X	X		X	X			
	~~BH05~~	〃	S											
10	BH06_0-0.5	〃	S											
11	BH06_2.5-3.0	〃	S											
				TOTAL										

Environmental Division Perth

Work Order Reference

EP2209615

Telephone : +61-8-9406 1301

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; LI = Lugols Iodine Preserved Bottles; STT = Sterile Sodium Thiosulfate Preserved Bottles.

CHAIN OF CUSTODY

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CLIENT: Aurecon	**TURNAROUND REQUIREMENTS :** (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Standard TAT (List due date):	**FOR LABORATORY USE ONLY (Circle)**
OFFICE: Level 5, 863 Hay Street, Perth, WA 6000		☐ Non Standard or urgent TAT (List due date):	Custody Seal Intact? Yes No N/A
PROJECT: Bunbury Quantem Terminal	**ALS QUOTE NO.:**	**COC SEQUENCE NUMBER (Circle)**	Free ice / frozen ice bricks present upon receipt? Yes No N/A
PURCHASE ORDER NUMBER:	**COUNTRY OF ORIGIN: AUSTRALIA**	COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER: Mathew Kemp	**CONTACT PH:** +64 21 319069	OF: 1 2 3 4 5 6 7	Other comment:
SAMPLER: Ali Anwar	**SAMPLER MOBILE:** 0421 876 595	**RELINQUISHED BY:**	**RECEIVED BY:** NO
COC Emailed to ALS?	**EDD FORMAT (or default):**		
Email Reports to: ali.anwar@aurecongroup.com and nathan.seaver@aurecongroup.com		DATE/TIME:	DATE/TIME: 17:00 29.07.22
Email Invoice to: vinderinvoices@aurecongroup.com and mathew.kemp@aurecongroup.com			

RELINQUISHED BY:	**RECEIVED BY:**
DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required)								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*	TOTAL BOTTLES + Bags	P19/1	EP231X	EA200	EP080	SPOCAS	Acid-pHeox			Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
12	BH07_0-0.5	24/7/22 8:55	S		6	X	X	X		X	X			
13	BH07_2.5-3.0	〃	S		6	X	X	X		X	X			
14	MW1_0-0.5	28/7/22-11.00	S		6	X	X	X		X	X			
15	MW1_3-3.5	〃	S		6	X	X	X		X	X			
16	MW2_0-0.5	〃	〃		6	X	X	X		X	X			
17	MW2_3-3.5	〃	〃		6	X	X	X		X	X			
18	QC101	〃	〃		6	X	X	X		X	X			
	~~QC102~~													
	~~QC103~~													
—	QC201				6									→ Eurofins
	~~QC202~~													
	~~QC203~~													
				TOTAL										

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☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT: Aurecon

OFFICE: Level 5, 863 Hay Street, Perth, WA 6000

PROJECT: Bunbry Quantem Terminal

PURCHASE ORDER NUMBER:

PROJECT MANAGER: Mathew Kemp — **CONTACT PH:** +64 21 319069

SAMPLER: Ali Anwar — **SAMPLER MOBILE:** 0421 876 595

COC Emailed to ALS? — **EDD FORMAT (or default):**

Email Reports to: ali.anwar@aurecongroup.com and nathan.seaver@aurecongroup.com

Email Invoice to: vinderinvoices@aurecongroup.com and mathew.kemp@aurecongroup.com

TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)

☐ Standard TAT **(List due date):**

☐ Non Standard or urgent TAT **(List due date):**

ALS QUOTE NO.:

COUNTRY OF ORIGIN: AUSTRALIA

COC SEQUENCE NUMBER (Circle)

COC: 1 2 3 4 5 6 7

OF: 1 2 3 4 5 6 7

FOR LABORATORY USE ONLY (Circle)

Custody Seal Intact? Yes No N/A

Free ice / frozen ice bricks present upon receipt? Yes No N/A

Random Sample Temperature on Receipt: °C

Other comment:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE/TIME:	DATE/TIME: NP 29.07.22 17-00	DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY

SAMPLE DETAILS MATRIX: Solid(S) Water(W)

CONTAINER INFORMATION

ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price)

Where **Metals** are required, specify **Total** (unfiltered bottle required) or **Dissolved** (field filtered bottle required).

Additional Information

LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*	TOTAL BOTTLES	P19/1	EP231X	EA200	EP080	VSPOCAS	pH - pH Ox			Additional Information
19	MW1_40-45	28/7/22@1120	S		1					X	X			
20	MW2_45-50	28/7/22@1235	S		1					X	X			H_2S Smell
				TOTAL										

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; Li = Lugols Iodine Preserved Bottles; STT = Sterile Sodium Thiosulfate Preserved Bottles.

CHAIN OF CUSTODY

ALS Laboratory: please tick →

☐ADELAIDE 21 Burma Road Pooraka SA 5095 Ph: 08 8359 0890 E: adelaide@alsglobal.com

☐BRISBANE 32 Shand Street Stafford QLD 4053 Ph: 07 3243 7222 E: samples.brisbane@alsglobal.com

☐GLADSTONE 46 Callemondah Drive Clinton QLD 4680 Ph: 07 7471 5600 E: gladstone@alsglobal.com

☐MACKAY 78 Harbour Road Mackay QLD 4740 Ph: 07 4944 0177 E: mackay@alsglobal.com

☐MELBOURNE 2-4 Westall Road Springvale VIC 3171 Ph: 03 8549 9600 E: samples.melbourne@alsglobal.com

☐MUDGEE 27 Sydney Road Mudgee NSW 2850 Ph: 02 6372 6735 E: mudgee mail@alsglobal.com

☐NEWCASTLE 5 Rose Gum Road Warabrook NSW 2304 Ph: 02 4968 9433 E: samples.newcastle@alsglobal.com

☐NOWRA 4/13 Geary Place North Nowra NSW 2541 Ph: 02 4423 2063 E: nowra@alsglobal.com

☐PERTH 26 Rigali Way, Wangara WA 6065 Ph: 08 9406 1301 E: samples.perth@alsglobal.com

☐SYDNEY 277-289 Woodpark Road Smithfield NSW 2164 Ph: 02 8784 8555 E: samples.sydney@alsglobal.com

☐TOWNSVILLE 14-15 Desma Court Bohle QLD 4818 Ph: 07 4796 0600 E: townsville.environmental@alsglobal.com

☐WOLLONGONG 99 Kenny Street Wollongong NSW 2500 Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT: Aurecon	**TURNAROUND REQUIREMENTS :** (Standard TAT may be longer for some tests e.g., Ultra Trace Organics)	☐ Standard TAT **(List due date):**	**FOR LABORATORY USE ONLY (Circle)**
OFFICE: Level 5, 863 Hay Street, Perth, WA 6000		☐ Non Standard or urgent TAT **(List due date):**	Custody Seal Intact? Yes No N/A
PROJECT: Bunbry Quantem Terminal	**ALS QUOTE NO.:**	**COC SEQUENCE NUMBER (Circle)**	Free ice / frozen ice bricks present upon receipt? Yes No N/A
PURCHASE ORDER NUMBER:	**COUNTRY OF ORIGIN: AUSTRALIA**	COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER: Mathew Kemp	**CONTACT PH:** +64 21 319069	OF: 1 2 3 4 5 6 7	Other comment:
SAMPLER: Ali Anwar	**SAMPLER MOBILE:** 0421 876 595	**RELINQUISHED BY:**	**RECEIVED BY:** NO
COC Emailed to ALS?	**EDD FORMAT (or default):**		
Email Reports to: ali.anwar@aurecongroup.com and nathan.seaver@aurecongroup.com		DATE/TIME:	DATE/TIME: 29.07.22
Email Invoice to: vinderinvoices@aurecongroup.com and mathew.kemp@aurecongroup.com			

RELINQUISHED BY:	**RECEIVED BY:**	**RELINQUISHED BY:**	**RECEIVED BY:**
DATE/TIME:	DATE/TIME:	DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required)								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*	TOTAL BOTTLES	P19/1	EP231X	EA200	EP080					Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
21	RN01					X	X	X						
22	RN02					X	X	X						
23-25	TRW								X					
				TOTAL										

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; LI = Lugols Iodine Preserved Bottles; STT = Sterile Sodium Thiosulfate Preserved Bottles.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EP2210465**	Page	: 1 of 12
Client	: **AURECON AUSTRALASIA PTY LTD**	Laboratory	: Environmental Division Perth
Contact	: ALI ANWAR	Contact	: Tyler Anderson
Address	: LEVEL 5 863 HAY STREET PERTH 6000	Address	: 26 Rigali Way Wangara Western Australia Australia 6065
Telephone	: ----	Telephone	: +61 2 8784 8555
Project	: Quantem Bunbury Terminal GME 2022	Date Samples Received	: 17-Aug-2022 18:45
Order number	: ----	Date Analysis Commenced	: 19-Aug-2022
C-O-C number	: ----	Issue Date	: 26-Aug-2022 23:49
Sampler	: Will Dumble		
Site	: ----		
Quote number	: EP/584/22		
No. of samples received	: 8		
No. of samples analysed	: 8		

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.

Signatories	*Position*	*Accreditation Category*
Canhuang Ke	Inorganics Supervisor	Perth Inorganics, Wangara, Western Australia
David Viner	SENIOR LAB TECH	Perth Organics, Wangara, Western Australia
Franco Lentini	LCMS Coordinator	Sydney Organics, 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.

- EP202SL and EP231X conducted by ALS Sydney, NATA accreditation no. 825, site no 10911.
- 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.
- EP231X - Per- and Polyfluoroalkyl Substances (PFAS): Samples received in 20ml or 125ml bottles have been tested in accordance with the QSM5.3 compliant, NATA accredited method. 60mL or 250mL bottles have been tested to the legacy QSM 5.1 aligned, NATA accredited method.
- 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.
- EP074: Where reported, Total Trihalomethanes is the sum of the reported concentrations of all Trihalomethanes at or above the LOR.
- EP074: Where reported, Total Trimethylbenzenes is the sum of the reported concentrations of 1.2.3-Trimethylbenzene, 1.2.4-Trimethylbenzene and 1.3.5-Trimethylbenzene 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.
- EP231: Stable isotope enriched internal standards are added to samples prior to extraction. Target compounds have a direct analogous internal standard with the exception of PFPeS, PFHpA, PFDS, PFTrDA and 10:2 FTS. These compounds use an internal standard that is chemically related and has a retention time close to that of the target compound. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. These practices are in line with recommendations in the National Environmental Management Plan for PFAS (Australian HEPA) and also conform to QSM 5.3 (US DoD) requirements.

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW1_220816	MW2_220816	B-015B_220816	QC102	RN3
			Sampling date / time	16-Aug-2022 11:50	16-Aug-2022 13:15	16-Aug-2022 15:30	16-Aug-2022 00:00	16-Aug-2022 18:30
Compound	CAS Number	LOR	Unit	EP2210465-001	EP2210465-002	EP2210465-003	EP2210465-004	EP2210465-006
				Result	Result	Result	Result	Result
EA005P: pH by PC Titrator								
pH Value	----	0.01	pH Unit	**7.92**	**7.74**	**8.07**	**----**	**6.32**
EG020T: Total Metals by ICP-MS								
Aluminium	7429-90-5	0.01	mg/L	**0.03**	**0.45**	**0.01**	**0.42**	<0.01
Arsenic	7440-38-2	0.001	mg/L	**0.006**	**0.010**	<0.001	**0.009**	<0.001
Boron	7440-42-8	0.05	mg/L	**0.08**	**0.40**	<0.05	**0.41**	<0.05
Barium	7440-39-3	0.001	mg/L	**0.005**	**0.031**	**0.060**	**0.031**	<0.001
Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	7440-47-3	0.001	mg/L	**0.004**	**0.003**	**0.002**	**0.002**	<0.001
Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	**0.001**	<0.001	<0.001
Manganese	7439-96-5	0.001	mg/L	**0.024**	**0.154**	**0.001**	**0.154**	<0.001
Nickel	7440-02-0	0.001	mg/L	**0.002**	**0.003**	**0.002**	**0.002**	<0.001
Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	**0.001**	<0.001	<0.001
Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005
Molybdenum	7439-98-7	0.001	mg/L	**0.010**	**0.008**	**0.008**	**0.008**	<0.001
Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
EG050T: Total Hexavalent Chromium								
Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01
EK026SF: Total CN by Segmented Flow Analyser								
Total Cyanide	57-12-5	0.004	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser								
Weak Acid Dissociable Cyanide	----	0.004	mg/L	<0.004	<0.004	<0.004	<0.004	<0.004
EK040P: Fluoride by PC Titrator								
Fluoride	16984-48-8	0.1	mg/L	**0.6**	**0.4**	**0.3**	**----**	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
^ Total Polychlorinated biphenyls	----	1	µg/L	<1	<1	<1	<1	<1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.5	µg/L	<0.5	<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	<0.5

Analytical Results

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

Compound	CAS Number	LOR	Unit	Sample ID	MW1_220816	MW2_220816	B-015B_220816	QC102	RN3
				Sampling date / time	16-Aug-2022 11:50	16-Aug-2022 13:15	16-Aug-2022 15:30	16-Aug-2022 00:00	16-Aug-2022 18:30
					EP2210465-001	EP2210465-002	EP2210465-003	EP2210465-004	EP2210465-006
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
beta-BHC	319-85-7	0.5	µg/L		<0.5	<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	<0.5
delta-BHC	319-86-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Heptachlor	76-44-8	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Aldrin	309-00-2	0.5	µg/L		<0.5	<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	<0.5
trans-Chlordane	5103-74-2	0.5	µg/L		<0.5	<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	<0.5
cis-Chlordane	5103-71-9	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Dieldrin	60-57-1	0.5	µg/L		<0.5	<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	<0.5
Endrin	72-20-8	0.5	µg/L		<0.5	<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	<0.5
4.4`-DDD	72-54-8	0.5	µg/L		<0.5	<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	<0.5
Endosulfan sulfate	1031-07-8	0.5	µg/L		<0.5	<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	<2.0
Endrin ketone	53494-70-5	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
Methoxychlor	72-43-5	2.0	µg/L		<2.0	<2.0	<2.0	<2.0	<2.0
^ Total Chlordane (sum)	----	0.5	µg/L		<0.5	<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	<0.5
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L		<0.5	<0.5	<0.5	<0.5	<0.5
EP070: Total Petroleum Hydrocarbons - Speciation									
Aromatic C10-C14	----	50	µg/L		<50	<50	<50	<50	<50
Aromatic C15-C28	----	100	µg/L		<100	<100	<100	<100	<100
Aromatic C29-C36	----	50	µg/L		<50	<50	<50	<50	<50
Aliphatic C10-C14	----	50	µg/L		<50	<50	<50	<50	<50
Aliphatic C15-C28	----	100	µg/L		<100	<100	<100	<100	<100
Aliphatic C29-C36	----	50	µg/L		<50	<50	<50	<50	<50
EP074A: Monocyclic Aromatic Hydrocarbons									
Styrene	100-42-5	5	µg/L		<5	<5	<5	<5	<5
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	1.0	µg/L		<1.0	<1.0	<1.0	<1.0	<1.0

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW1_220816	MW2_220816	B-015B_220816	QC102	RN3
			Sampling date / time	16-Aug-2022 11:50	16-Aug-2022 13:15	16-Aug-2022 15:30	16-Aug-2022 00:00	16-Aug-2022 18:30
Compound	CAS Number	LOR	Unit	EP2210465-001	EP2210465-002	EP2210465-003	EP2210465-004	EP2210465-006
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued								
2-Chlorophenol	95-57-8	1.0	µg/L	<1.0	<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	<1.0
3- & 4-Methylphenol	1319-77-3	2.0	µg/L	<2.0	<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	<1.0
2.4-Dimethylphenol	105-67-9	1.0	µg/L	<1.0	<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	<1.0
2.6-Dichlorophenol	87-65-0	1.0	µg/L	<1.0	<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	<1.0
2.4.6-Trichlorophenol	88-06-2	1.0	µg/L	<1.0	<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	<1.0
Pentachlorophenol	87-86-5	2.0	µg/L	<2.0	<2.0	<2.0	<2.0	<2.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Acenaphthene	83-32-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluorene	86-73-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Phenanthrene	85-01-8	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Anthracene	120-12-7	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Fluoranthene	206-44-0	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Pyrene	129-00-0	1.0	µg/L	<1.0	<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	<1.0
Chrysene	218-01-9	1.0	µg/L	<1.0	<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	<1.0
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	<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	<1.0
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L	<1.0	<1.0	<1.0	<1.0	<1.0
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	<0.5	<0.5	<0.5	<0.5
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	<20	<20	<20	<20
C10 - C14 Fraction	----	50	µg/L	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	µg/L	<100	<100	<100	<100	<100

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW1_220816	MW2_220816	B-015B_220816	QC102	RN3
				Sampling date / time	16-Aug-2022 11:50	16-Aug-2022 13:15	16-Aug-2022 15:30	16-Aug-2022 00:00	16-Aug-2022 18:30
Compound	CAS Number	LOR	Unit		EP2210465-001	EP2210465-002	EP2210465-003	EP2210465-004	EP2210465-006
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C29 - C36 Fraction	----	50	µg/L		<50	<50	<50	<50	<50
^ C10 - C36 Fraction (sum)	----	50	µg/L		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	<20	<20	<20	<20
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	<20	<20	<20	<20
>C10 - C16 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C16 - C34 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	<100	<100	<100	<100
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	<100	<100	<100	<100
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	<1	<1	<1	<1
Toluene	108-88-3	2	µg/L		<2	<2	<2	<2	<2
Ethylbenzene	100-41-4	2	µg/L		<2	<2	<2	<2	<2
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	<2	<2	<2	<2
ortho-Xylene	95-47-6	2	µg/L		<2	<2	<2	<2	<2
^ Total Xylenes	----	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
EP202A: Phenoxyacetic Acid Herbicides by LCMS									
4-Chlorophenoxy acetic acid	122-88-3	10	µg/L		<10	<10	<10	<10	<10
2.4-DB	94-82-6	10	µg/L		<10	<10	<10	<10	<10
Dicamba	1918-00-9	10	µg/L		<10	<10	<10	<10	<10
Mecoprop	93-65-2	10	µg/L		<10	<10	<10	<10	<10
MCPA	94-74-6	10	µg/L		<10	<10	<10	<10	<10
2.4-DP	120-36-5	10	µg/L		<10	<10	<10	<10	<10
2.4-D	94-75-7	10	µg/L		<10	<10	<10	<10	<10
Triclopyr	55335-06-3	10	µg/L		<10	<10	<10	<10	<10
Silvex (2.4.5-TP/Fenoprop)	93-72-1	10	µg/L		<10	<10	<10	<10	<10
2.4.5-T	93-76-5	10	µg/L		<10	<10	<10	<10	<10
MCPB	94-81-5	10	µg/L		<10	<10	<10	<10	<10
Picloram	1918-02-1	10	µg/L		<10	<10	<10	<10	<10
Clopyralid	1702-17-6	10	µg/L		<10	<10	<10	<10	<10

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	MW1_220816	MW2_220816	B-015B_220816	QC102	RN3
			Sampling date / time	16-Aug-2022 11:50	16-Aug-2022 13:15	16-Aug-2022 15:30	16-Aug-2022 00:00	16-Aug-2022 18:30
Compound	CAS Number	LOR	Unit	EP2210465-001	EP2210465-002	EP2210465-003	EP2210465-004	EP2210465-006
				Result	Result	Result	Result	Result
EP202A: Phenoxyacetic Acid Herbicides by LCMS - Continued								
Fluroxypyr	69377-81-7	10	µg/L	<10	<10	<10	<10	<10
2.6-D	575-90-6	10	µg/L	<10	<10	<10	<10	<10
2.4.6-T	575-89-3	10	µg/L	<10	<10	<10	<10	<10
EP231A: Perfluoroalkyl Sulfonic Acids								
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
EP231B: Perfluoroalkyl Carboxylic Acids								
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	<0.1	<0.1	<0.1
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	<0.01	<0.01	<0.01
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
EP231C: Perfluoroalkyl Sulfonamides								
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	<0.02	<0.02	<0.02

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	MW1_220816	MW2_220816	B-015B_220816	QC102	RN3
				Sampling date / time	16-Aug-2022 11:50	16-Aug-2022 13:15	16-Aug-2022 15:30	16-Aug-2022 00:00	16-Aug-2022 18:30
Compound	CAS Number	LOR	Unit		EP2210465-001	EP2210465-002	EP2210465-003	EP2210465-004	EP2210465-006
					Result	Result	Result	Result	Result
EP231C: Perfluoroalkyl Sulfonamides - Continued									
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	<0.02	<0.02	<0.02	<0.02
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	<0.05	<0.05	<0.05	<0.05
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
Sum of PFAS (WA DER List)	----	0.01	µg/L		<0.01	<0.01	<0.01	<0.01	<0.01
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	1	%		**56.4**	**55.3**	**71.5**	**55.0**	**60.6**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%		**91.2**	**85.5**	**95.8**	**97.7**	**74.7**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%		**74.5**	**68.8**	**73.2**	**79.2**	**62.8**
EP070S:TPH Surrogates - Speciation									

Analytical Results

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

Compound	CAS Number	LOR	Unit	Sample ID	MW1_220816	MW2_220816	B-015B_220816	QC102	RN3
				Sampling date / time	16-Aug-2022 11:50	16-Aug-2022 13:15	16-Aug-2022 15:30	16-Aug-2022 00:00	16-Aug-2022 18:30
					EP2210465-001	EP2210465-002	EP2210465-003	EP2210465-004	EP2210465-006
					Result	Result	Result	Result	Result
EP070S:TPH Surrogates - Speciation - Continued									
2-Fluorobiphenyl	321-60-8	1	%		105	106	99.8	94.2	94.6
2-Bromonaphthalene	580-13-2	1	%		103	102	95.8	90.5	91.8
EP074S: VOC Surrogates									
1.2-Dichloroethane-D4	17060-07-0	5	%		85.0	77.1	81.2	80.2	101
Toluene-D8	2037-26-5	5	%		107	106	108	105	106
4-Bromofluorobenzene	460-00-4	5	%		94.6	95.7	95.4	95.6	94.8
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		24.0	18.9	20.2	23.4	18.8
2-Chlorophenol-D4	93951-73-6	1.0	%		62.2	50.6	53.8	62.5	53.9
2.4.6-Tribromophenol	118-79-6	1.0	%		80.3	81.0	83.8	90.7	79.2
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		81.4	71.3	74.4	82.5	71.3
Anthracene-d10	1719-06-8	1.0	%		77.2	72.1	89.4	81.8	78.0
4-Terphenyl-d14	1718-51-0	1.0	%		65.3	58.0	73.2	83.0	68.1
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		82.5	75.0	79.3	77.9	98.1
Toluene-D8	2037-26-5	2	%		107	106	108	105	105
4-Bromofluorobenzene	460-00-4	2	%		95.5	97.0	98.2	96.6	96.6
EP202S: Phenoxyacetic Acid Herbicide Surrogate									
2.4-Dichlorophenyl Acetic Acid	19719-28-9	10	%		112	113	117	108	111
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.02	%		97.1	95.3	96.5	99.9	92.4
13C8-PFOA	----	0.02	%		100	98.9	96.2	101	101

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)			Sample ID	TBW 970	TSW 050	TSW 050 Control	----	----
			Sampling date / time	15-Aug-2022 00:00	15-Aug-2022 00:00	15-Aug-2022 00:00	----	----
Compound	CAS Number	LOR	Unit	EP2210465-007	EP2210465-008	EP2210465-009	--------	--------
				Result	Result	Result	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	20	µg/L	<20	**210**	**220**	**----**	**----**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	20	µg/L	<20	**270**	**290**	**----**	**----**
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L	<20	**170**	**180**	**----**	**----**
EP080: BTEXN								
Benzene	71-43-2	1	µg/L	<1	**15**	**16**	**----**	**----**
Toluene	108-88-3	2	µg/L	<2	**16**	**17**	**----**	**----**
Ethylbenzene	100-41-4	2	µg/L	<2	**17**	**18**	**----**	**----**
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	**35**	**36**	**----**	**----**
ortho-Xylene	95-47-6	2	µg/L	<2	**18**	**18**	**----**	**----**
^ **Total Xylenes**	----	2	µg/L	<2	**53**	**54**	**----**	**----**
^ **Sum of BTEX**	----	1	µg/L	<1	**101**	**105**	**----**	**----**
Naphthalene	91-20-3	5	µg/L	<5	<5	**5**	**----**	**----**
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	2	%	**91.8**	**89.5**	**87.6**	**----**	**----**
Toluene-D8	2037-26-5	2	%	**94.2**	**87.1**	**93.2**	**----**	**----**
4-Bromofluorobenzene	460-00-4	2	%	**112**	**112**	**116**	**----**	**----**

Surrogate Control Limits

Sub-Matrix: **WATER**

Compound	CAS Number	Recovery Limits (%) Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	27	136
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	50	146
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	27	153
EP070S:TPH Surrogates - Speciation			
2-Fluorobiphenyl	321-60-8	70	130
2-Bromonaphthalene	580-13-2	70	130
EP074S: VOC Surrogates			
1.2-Dichloroethane-D4	17060-07-0	62	134
Toluene-D8	2037-26-5	75	124
4-Bromofluorobenzene	460-00-4	64	118
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	67
2-Chlorophenol-D4	93951-73-6	29	120
2.4.6-Tribromophenol	118-79-6	10	131
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	34	131
Anthracene-d10	1719-06-8	43	126
4-Terphenyl-d14	1718-51-0	41	142
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	61	141
Toluene-D8	2037-26-5	73	126
4-Bromofluorobenzene	460-00-4	60	125
EP202S: Phenoxyacetic Acid Herbicide Surrogate			
2.4-Dichlorophenyl Acetic Acid	19719-28-9	64	140
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

Inter-Laboratory Testing

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology).

(WATER) EP202A: Phenoxyacetic Acid Herbicides by LCMS

(WATER) EP202S: Phenoxyacetic Acid Herbicide Surrogate

(WATER) EP231A: Perfluoroalkyl Sulfonic Acids

(WATER) EP231B: Perfluoroalkyl Carboxylic Acids

(WATER) EP231C: Perfluoroalkyl Sulfonamides

(WATER) EP231D: (n:2) Fluorotelomer Sulfonic Acids

(WATER) EP231P: PFAS Sums

(WATER) EP231S: PFAS Surrogate

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EP2210465**	Page	: 1 of 19
Client	: **AURECON AUSTRALASIA PTY LTD**	Laboratory	: Environmental Division Perth
Contact	: ALI ANWAR	Contact	: Tyler Anderson
Address	: LEVEL 5 863 HAY STREET PERTH 6000	Address	: 26 Rigali Way Wangara Western Australia Australia 6065
Telephone	: ----	Telephone	: +61 2 8784 8555
Project	: Quantem Bunbury Terminal GME 2022	Date Samples Received	: 17-Aug-2022
Order number	: ----	Date Analysis Commenced	: 19-Aug-2022
C-O-C number	: ----	Issue Date	: 26-Aug-2022
Sampler	: Will Dumble		
Site	: ----		
Quote number	: EP/584/22		
No. of samples received	: 8		
No. of samples analysed	: 8		

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

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, 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*
Canhuang Ke	Inorganics Supervisor	Perth Inorganics, Wangara, Western Australia
David Viner	SENIOR LAB TECH	Perth Organics, Wangara, Western Australia
Franco Lentini	LCMS Coordinator	Sydney Organics, 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 (%)
EA005P: pH by PC Titrator (QC Lot: 4538151)									
EP2210460-004	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.88	7.86	0.3	0% - 20%
EP2210467-002	Anonymous	EA005-P: pH Value	----	0.01	pH Unit	7.03	7.06	0.4	0% - 20%
EG020T: Total Metals by ICP-MS (QC Lot: 4534995)									
EP2210106-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Barium	7440-39-3	0.001	mg/L	0.548	0.552	0.7	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.145	0.147	1.4	0% - 20%
		EG020A-T: Molybdenum	7439-98-7	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.004	0.003	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.015	0.012	23.1	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	0.13	0.11	13.4	0% - 50%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	0.10	0.10	0.0	No Limit
EP2210460-006	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0003	0.0003	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.015	0.015	0.0	0% - 50%
		EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Barium	7440-39-3	0.001	mg/L	0.083	0.084	1.9	0% - 20%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.011	0.012	0.0	0% - 50%

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 (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 4534995) - continued									
EP2210460-006	Anonymous	EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.018	0.018	0.0	0% - 50%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.036	0.036	0.0	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.305	0.306	0.0	0% - 20%
		EG020A-T: Molybdenum	7439-98-7	0.001	mg/L	0.036	0.037	3.3	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.018	0.017	0.0	0% - 50%
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.050	0.049	2.1	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	4.50	4.74	5.2	0% - 20%
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Vanadium	7440-62-2	0.01	mg/L	0.02	0.02	0.0	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	0.15	0.15	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 4534997)									
EP2210465-006	RN3	EG020B-T: Silver	7440-22-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
EG020T: Total Metals by ICP-MS (QC Lot: 4534998)									
EP2210514-002	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Barium	7440-39-3	0.001	mg/L	0.010	0.010	0.0	0% - 50%
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.026	0.026	0.0	0% - 20%
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	0.012	0.012	0.0	0% - 50%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.003	<0.001	98.3	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	0.001	0.001	0.0	No Limit
		EG020A-T: Molybdenum	7439-98-7	0.001	mg/L	0.005	0.004	26.2	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	1.27	1.26	0.4	0% - 20%
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	2.44	2.52	3.2	0% - 20%
EP2210465-006	RN3	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Barium	7440-39-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Molybdenum	7439-98-7	0.001	mg/L	<0.001	<0.001	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 4534998) - continued									
EP2210465-006	RN3	EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
		EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	<0.01	0.0	No Limit
		EG020A-T: Boron	7440-42-8	0.05	mg/L	<0.05	<0.05	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4535021)									
EP2210418-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EP2210460-009	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	0.0003	0.0003	0.0	No Limit
EG050T: Total Hexavalent Chromium (QC Lot: 4539691)									
EP2210465-001	MW1_220816	EG050G-T: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EP2210664-005	Anonymous	EG050G-T: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	<0.01	0.0	No Limit
EK026SF: Total CN by Segmented Flow Analyser (QC Lot: 4530060)									
EP2210392-001	Anonymous	EK026SF: Total Cyanide	57-12-5	0.004	mg/L	0.494	0.489	1.1	0% - 50%
EP2210392-011	Anonymous	EK026SF: Total Cyanide	57-12-5	0.004	mg/L	<0.040	<0.040	0.0	No Limit
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser (QC Lot: 4530061)									
EP2210392-001	Anonymous	EK028SF: Weak Acid Dissociable Cyanide	----	0.004	mg/L	<0.040	<0.040	0.0	No Limit
EP2210392-011	Anonymous	EK028SF: Weak Acid Dissociable Cyanide	----	0.004	mg/L	<0.040	<0.040	0.0	No Limit
EK040P: Fluoride by PC Titrator (QC Lot: 4538150)									
EP2210437-001	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.2	0.2	0.0	No Limit
EP2210448-003	Anonymous	EK040P: Fluoride	16984-48-8	0.1	mg/L	0.4	0.4	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 4532498)									
EP2210465-001	MW1_220816	EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	<1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4532497)									
EP2210465-001	MW1_220816	EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: Endrin	72-20-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	<0.5	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 (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4532497) - continued									
EP2210465-001	MW1_220816	EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	<2.0	0.0	No Limit
		EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	<2.0	0.0	No Limit
EP070: Total Petroleum Hydrocarbons - Speciation (QC Lot: 4532499)									
EP2210465-001	MW1_220816	EP070: Aliphatic C15-C28	----	100	µg/L	<100	<100	0.0	No Limit
		EP070: Aromatic C15-C28	----	100	µg/L	<100	<100	0.0	No Limit
		EP070: Aliphatic C10-C14	----	50	µg/L	<50	<50	0.0	No Limit
		EP070: Aliphatic C29-C36	----	50	µg/L	<50	<50	0.0	No Limit
		EP070: Aromatic C10-C14	----	50	µg/L	<50	<50	0.0	No Limit
		EP070: Aromatic C29-C36	----	50	µg/L	<50	<50	0.0	No Limit
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 4529746)									
EP2210465-001	MW1_220816	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 4532501)									
EP2210465-001	MW1_220816	EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	<2.0	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	<2.0	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4532501)									
EP2210465-001	MW1_220816	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	<1.0	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 (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4532501) - continued									
EP2210465-001	MW1_220816	EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	<1.0	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	<1.0	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4529747)									
EP2210465-001	MW1_220816	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4529749)									
EP2210445-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<0.02 mg/L	<20	0.0	No Limit
EP2210456-002	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	0.84 mg/L	990	16.1	0% - 20%
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4532500)									
EP2210465-001	MW1_220816	EP071: C15 - C28 Fraction	----	100	µg/L	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	µg/L	<50	<50	0.0	No Limit
		EP071: C29 - C36 Fraction	----	50	µg/L	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4529747)									
EP2210465-001	MW1_220816	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4529749)									
EP2210445-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<0.02 mg/L	<20	0.0	No Limit
EP2210456-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	1.10 mg/L	1260	13.1	0% - 20%
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4532500)									
EP2210465-001	MW1_220816	EP071: >C10 - C16 Fraction	----	100	µg/L	<100	<100	0.0	No Limit
		EP071: >C16 - C34 Fraction	----	100	µg/L	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	µg/L	<100	<100	0.0	No Limit
EP080: BTEXN (QC Lot: 4529747)									
EP2210465-001	MW1_220816	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	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		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
EP080: BTEXN (QC Lot: 4529749)									
EP2210445-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<0.001 mg/L	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<0.002 mg/L	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<0.002 mg/L	<2	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 (%)*
EP080: BTEXN (QC Lot: 4529749) - continued									
EP2210445-001	Anonymous	EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<0.002 mg/L	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<0.002 mg/L	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<0.005 mg/L	<5	0.0	No Limit
EP2210456-002	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<0.001 mg/L	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	0.002 mg/L	2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	0.002 mg/L	3	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	0.010 mg/L	12	22.5	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	0.006 mg/L	8	18.5	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<0.005 mg/L	<5	0.0	No Limit
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QC Lot: 4531939)									
EB2224095-014	Anonymous	EP202-SL: 4-Chlorophenoxy acetic acid	122-88-3	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: 2.4-DB	94-82-6	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: Dicamba	1918-00-9	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: Mecoprop	93-65-2	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: MCPA	94-74-6	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: 2.4-DP	120-36-5	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: 2.4-D	94-75-7	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: Triclopyr	55335-06-3	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: Silvex (2.4.5-TP/Fenoprop)	93-72-1	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: 2.4.5-T	93-76-5	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: MCPB	94-81-5	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: Picloram	1918-02-1	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: Clopyralid	1702-17-6	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: Fluroxypyr	69377-81-7	10	µg/L	<10	<10	0.0	No Limit
EP2210465-004	QC102	EP202-SL: 4-Chlorophenoxy acetic acid	122-88-3	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: 2.4-DB	94-82-6	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: Dicamba	1918-00-9	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: Mecoprop	93-65-2	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: MCPA	94-74-6	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: 2.4-DP	120-36-5	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: 2.4-D	94-75-7	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: Triclopyr	55335-06-3	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: Silvex (2.4.5-TP/Fenoprop)	93-72-1	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: 2.4.5-T	93-76-5	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: MCPB	94-81-5	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: Picloram	1918-02-1	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: Clopyralid	1702-17-6	10	µg/L	<10	<10	0.0	No Limit
		EP202-SL: Fluroxypyr	69377-81-7	10	µg/L	<10	<10	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 (%)*
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 4540476)									
EP2210465-001	MW1_220816	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
ES2229589-001	Anonymous	EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.02	75.0	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	0.08	0.08	0.0	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 4540476)									
EP2210465-001	MW1_220816	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
ES2229589-001	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.0	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	0.07	0.06	0.0	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.0	No Limit
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4540476)									
EP2210465-001	MW1_220816	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	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 (%)*
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 4540476) - continued									
EP2210465-001	MW1_220816	EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
ES2229589-001	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 4540476)									
EP2210465-001	MW1_220816	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
ES2229589-001	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.0	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.0	No Limit
EP231P: PFAS Sums (QC Lot: 4540476)									

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 (%)*
EP231P: PFAS Sums (QC Lot: 4540476) - continued									
EP2210465-001	MW1_220816	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.0	No Limit
ES2229589-001	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.15	0.16	6.5	0% - 50%

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**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EA005P: pH by PC Titrator (QCLot: 4538151)								
EA005-P: pH Value	----	----	pH Unit	----	4 pH Unit	100	98.5	102
				----	7 pH Unit	100	98.5	102
EG020T: Total Metals by ICP-MS (QCLot: 4534995)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	105	91.6	114
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	106	92.6	113
EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	0.1 mg/L	106	82.2	127
EG020A-T: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	108	91.0	112
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	106	91.8	111
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	106	90.9	109
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	103	90.5	110
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	102	90.8	110
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	103	92.3	108
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	102	90.3	109
EG020A-T: Molybdenum	7439-98-7	0.001	mg/L	<0.001	0.1 mg/L	113	98.8	121
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	103	89.3	110
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	104	85.7	110
EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	104	92.0	111
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	104	90.7	113
EG020A-T: Boron	7440-42-8	0.05	mg/L	<0.05	0.5 mg/L	116	79.6	130
EG020T: Total Metals by ICP-MS (QCLot: 4534997)								
EG020B-T: Silver	7440-22-4	0.001	mg/L	<0.001	0.02 mg/L	114	92.5	124
EG020T: Total Metals by ICP-MS (QCLot: 4534998)								
EG020A-T: Aluminium	7429-90-5	0.01	mg/L	<0.01	0.5 mg/L	106	91.6	114
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	106	92.6	113
EG020A-T: Beryllium	7440-41-7	0.001	mg/L	<0.001	0.1 mg/L	108	82.2	127
EG020A-T: Barium	7440-39-3	0.001	mg/L	<0.001	0.1 mg/L	105	91.0	112
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	104	91.8	111
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	104	90.9	109
EG020A-T: Cobalt	7440-48-4	0.001	mg/L	<0.001	0.1 mg/L	103	90.5	110
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	103	90.8	110
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	102	92.3	108
EG020A-T: Manganese	7439-96-5	0.001	mg/L	<0.001	0.1 mg/L	101	90.3	109
EG020A-T: Molybdenum	7439-98-7	0.001	mg/L	<0.001	0.1 mg/L	114	98.8	121
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	103	89.3	110

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 4534998) - continued								
EG020A-T: Selenium	7782-49-2	0.01	mg/L	<0.01	0.1 mg/L	103	85.7	110
EG020A-T: Vanadium	7440-62-2	0.01	mg/L	<0.01	0.1 mg/L	104	92.0	111
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	106	90.7	113
EG020A-T: Boron	7440-42-8	0.05	mg/L	<0.05	0.5 mg/L	115	79.6	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4535021)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.005 mg/L	95.0	83.7	120
EG050T: Total Hexavalent Chromium (QCLot: 4539691)								
EG050G-T: Hexavalent Chromium	18540-29-9	0.01	mg/L	<0.01	0.5 mg/L	104	93.2	108
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 4530060)								
EK026SF: Total Cyanide	57-12-5	0.004	mg/L	<0.004	0.2 mg/L	100	75.0	127
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser (QCLot: 4530061)								
EK028SF: Weak Acid Dissociable Cyanide	----	0.004	mg/L	<0.004	0.2 mg/L	99.7	92.2	112
EK040P: Fluoride by PC Titrator (QCLot: 4538150)								
EK040P: Fluoride	16984-48-8	0.1	mg/L	<0.1	5 mg/L	93.0	86.0	116
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 4532498)								
EP066: Total Polychlorinated biphenyls	----	1	µg/L	<1	5 µg/L	62.8	36.2	90.2
EP068A: Organochlorine Pesticides (OC) (QCLot: 4532497)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	56.4	42.3	112
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	58.7	39.0	108
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	62.8	45.5	116
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	62.4	43.0	118
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	66.6	46.2	115
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	66.9	39.0	111
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	75.4	39.7	114
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	74.8	42.4	122
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	73.4	43.6	121
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	107	42.1	129
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	74.0	42.7	123
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	74.0	42.4	121
EP068: 4.4`-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	67.2	43.8	123
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	72.2	26.9	127
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	73.6	44.9	128
EP068: 4.4`-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	68.4	41.7	128
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	41.3	32.2	121
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	66.4	40.7	120
EP068: 4.4`-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	53.3	31.6	123
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	57.8	36.4	124
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	39.4	25.4	124

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP070: Total Petroleum Hydrocarbons - Speciation (QCLot: 4532499)								
EP070: Aliphatic C10-C14	----	50	µg/L	<50	2674 µg/L	85.5	76.1	125
EP070: Aliphatic C15-C28	----	100	µg/L	<100	7406 µg/L	111	89.6	138
EP070: Aliphatic C29-C36	----	50	µg/L	<50	----	----	----	----
EP070: Aromatic C10-C14	----	50	µg/L	<50	1621 µg/L	79.5	46.6	128
EP070: Aromatic C15-C28	----	100	µg/L	<100	2920 µg/L	96.2	53.4	159
EP070: Aromatic C29-C36	----	50	µg/L	<50	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 4529746)								
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	92.5	80.0	118
EP075(SIM)A: Phenolic Compounds (QCLot: 4532501)								
EP075(SIM): Phenol	108-95-2	1	µg/L	<1.0	10 µg/L	24.6	9.07	46.0
EP075(SIM): 2-Chlorophenol	95-57-8	1	µg/L	<1.0	10 µg/L	65.4	34.3	96.6
EP075(SIM): 2-Methylphenol	95-48-7	1	µg/L	<1.0	10 µg/L	56.4	24.9	92.6
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	2	µg/L	<2.0	20 µg/L	52.8	21.8	83.4
EP075(SIM): 2-Nitrophenol	88-75-5	1	µg/L	<1.0	10 µg/L	79.5	33.9	104
EP075(SIM): 2.4-Dimethylphenol	105-67-9	1	µg/L	<1.0	10 µg/L	63.6	33.9	102
EP075(SIM): 2.4-Dichlorophenol	120-83-2	1	µg/L	<1.0	10 µg/L	73.6	34.3	104
EP075(SIM): 2.6-Dichlorophenol	87-65-0	1	µg/L	<1.0	10 µg/L	76.6	38.4	102
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	1	µg/L	<1.0	10 µg/L	84.3	29.8	106
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	1	µg/L	<1.0	10 µg/L	87.3	31.9	109
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	1	µg/L	<1.0	10 µg/L	96.3	34.2	110
EP075(SIM): Pentachlorophenol	87-86-5	2	µg/L	<2.0	10 µg/L	45.4	13.6	104
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4532501)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	10 µg/L	64.0	41.9	99.1
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	10 µg/L	84.0	36.1	113
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	10 µg/L	69.1	35.8	102
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	10 µg/L	70.4	33.5	113
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	10 µg/L	78.5	36.5	115
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	10 µg/L	69.2	46.4	109
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	10 µg/L	72.7	40.4	124
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	10 µg/L	67.3	40.2	123
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	10 µg/L	73.2	40.2	126
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	10 µg/L	72.1	45.6	121
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	10 µg/L	76.6	43.2	123
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	10 µg/L	70.5	47.3	121
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	10 µg/L	77.2	44.8	123
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	10 µg/L	96.2	38.8	120
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	10 µg/L	72.5	39.4	119

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4532501) - continued								
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	10 µg/L	69.4	40.1	123
EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4529747)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	85.1	73.6	113
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4529749)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	360 µg/L	94.1	73.6	113
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4532500)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	368 µg/L	98.8	39.3	103
EP071: C15 - C28 Fraction	----	100	µg/L	<100	369 µg/L	116	47.2	122
EP071: C29 - C36 Fraction	----	50	µg/L	<50	297 µg/L	87.0	42.5	119
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4529747)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	87.2	73.9	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4529749)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	450 µg/L	96.0	73.9	115
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4532500)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	370 µg/L	101	42.0	104
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	482 µg/L	103	46.2	116
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	283 µg/L	58.5	24.7	137
EP080: BTEXN (QCLot: 4529747)								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	86.6	84.1	114
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	91.2	81.0	115
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	89.8	84.4	113
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	89.4	84.3	114
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	90.9	86.5	111
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	79.6	77.0	118
EP080: BTEXN (QCLot: 4529749)								
EP080: Benzene	71-43-2	1	µg/L	<1	20 µg/L	97.8	84.1	114
EP080: Toluene	108-88-3	2	µg/L	<2	20 µg/L	98.0	81.0	115
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	20 µg/L	96.4	84.4	113
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	40 µg/L	97.2	84.3	114
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	20 µg/L	96.9	86.5	111
EP080: Naphthalene	91-20-3	5	µg/L	<5	5 µg/L	102	77.0	118
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QCLot: 4531939)								
EP202-SL: 4-Chlorophenoxy acetic acid	122-88-3	10	µg/L	<10	100 µg/L	113	82.0	136
EP202-SL: 2.4-DB	94-82-6	10	µg/L	<10	100 µg/L	120	65.0	147

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QCLot: 4531939) - continued								
EP202-SL: Dicamba	1918-00-9	10	µg/L	<10	100 µg/L	124	83.0	137
EP202-SL: Mecoprop	93-65-2	10	µg/L	<10	100 µg/L	119	75.0	143
EP202-SL: MCPA	94-74-6	10	µg/L	<10	100 µg/L	118	76.0	140
EP202-SL: 2.4-DP	120-36-5	10	µg/L	<10	100 µg/L	118	76.0	144
EP202-SL: 2.4-D	94-75-7	10	µg/L	<10	100 µg/L	117	77.0	139
EP202-SL: Triclopyr	55335-06-3	10	µg/L	<10	100 µg/L	123	77.0	141
EP202-SL: Silvex (2.4.5-TP/Fenoprop)	93-72-1	10	µg/L	<10	100 µg/L	119	75.0	143
EP202-SL: 2.4.5-T	93-76-5	10	µg/L	<10	100 µg/L	122	78.0	140
EP202-SL: MCPB	94-81-5	10	µg/L	<10	100 µg/L	120	69.2	139
EP202-SL: Picloram	1918-02-1	10	µg/L	<10	100 µg/L	119	70.0	144
EP202-SL: Clopyralid	1702-17-6	10	µg/L	<10	100 µg/L	120	70.0	145
EP202-SL: Fluroxypyr	69377-81-7	10	µg/L	<10	100 µg/L	122	77.0	145
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4540476)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.25 µg/L	98.4	72.0	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.25 µg/L	106	71.0	127
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.01	µg/L	<0.01	0.25 µg/L	106	68.0	131
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.25 µg/L	102	69.0	134
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.25 µg/L	98.4	65.0	140
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.25 µg/L	94.4	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4540476)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	1.25 µg/L	86.8	73.0	129
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.25 µg/L	109	72.0	129
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.25 µg/L	107	72.0	129
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.25 µg/L	113	72.0	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.25 µg/L	114	71.0	133
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.25 µg/L	120	69.0	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.25 µg/L	105	71.0	129
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.25 µg/L	110	69.0	133
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.25 µg/L	108	72.0	134
EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	0.25 µg/L	117	65.0	144
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	0.625 µg/L	104	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4540476)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.25 µg/L	116	67.0	137
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	0.625 µg/L	97.0	68.0	141
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	0.625 µg/L	84.7	62.6	147
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	0.625 µg/L	91.9	66.0	145

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4540476) - continued								
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	0.625 µg/L	93.6	57.6	145
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.25 µg/L	107	65.0	136
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.25 µg/L	107	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4540476)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.25 µg/L	111	63.0	143
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.25 µg/L	102	64.0	140
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.25 µg/L	114	67.0	138
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.25 µg/L	94.0	71.4	144

Matrix Spike (MS) Report

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

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 4534995)							
EP2210106-002	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	110	70.0	130
		EG020A-T: Beryllium	7440-41-7	1 mg/L	99.6	70.0	130
		EG020A-T: Barium	7440-39-3	1 mg/L	105	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	106	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	97.0	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	104	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	102	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	107	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	97.2	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	102	70.0	130
		EG020A-T: Vanadium	7440-62-2	1 mg/L	99.8	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	106	70.0	130
EG020T: Total Metals by ICP-MS (QCLot: 4534998)							
EP2210469-001	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	106	70.0	130
		EG020A-T: Beryllium	7440-41-7	1 mg/L	106	70.0	130
		EG020A-T: Barium	7440-39-3	1 mg/L	107	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	107	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	102	70.0	130
		EG020A-T: Cobalt	7440-48-4	1 mg/L	105	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
EG020T: Total Metals by ICP-MS (QCLot: 4534998) - continued							
EP2210469-001	Anonymous	EG020A-T: Copper	7440-50-8	1 mg/L	109	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	115	70.0	130
		EG020A-T: Manganese	7439-96-5	1 mg/L	104	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	105	70.0	130
		EG020A-T: Vanadium	7440-62-2	1 mg/L	103	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	105	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4535021)							
EP2210465-001	MW1_220816	EG035T: Mercury	7439-97-6	0.005 mg/L	103	70.0	130
EG050T: Total Hexavalent Chromium (QCLot: 4539691)							
EP2210465-001	MW1_220816	EG050G-T: Hexavalent Chromium	18540-29-9	0.5 mg/L	98.4	70.0	130
EK026SF: Total CN by Segmented Flow Analyser (QCLot: 4530060)							
EP2210392-002	Anonymous	EK026SF: Total Cyanide	57-12-5	2 mg/L	100	70.0	130
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser (QCLot: 4530061)							
EP2210392-002	Anonymous	EK028SF: Weak Acid Dissociable Cyanide	----	2 mg/L	100	70.0	130
EK040P: Fluoride by PC Titrator (QCLot: 4538150)							
EP2210439-001	Anonymous	EK040P: Fluoride	16984-48-8	4.9 mg/L	86.1	70.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 4532501)							
EP2210465-001	MW1_220816	EP075(SIM): Phenol	108-95-2	10 µg/L	20.4	18.8	59.2
		EP075(SIM): 2-Chlorophenol	95-57-8	10 µg/L	54.5	34.2	122
		EP075(SIM): 2-Nitrophenol	88-75-5	10 µg/L	55.2	31.8	134
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 µg/L	74.0	39.0	118
		EP075(SIM): Pentachlorophenol	87-86-5	10 µg/L	17.8	17.5	118
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4532501)							
EP2210465-001	MW1_220816	EP075(SIM): Acenaphthene	83-32-9	10 µg/L	65.6	44.0	124
		EP075(SIM): Pyrene	129-00-0	10 µg/L	72.7	61.6	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4529747)							
EP2210465-002	MW2_220816	EP080: C6 - C9 Fraction	----	240 µg/L	109	77.0	137
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4529749)							
EP2210450-001	Anonymous	EP080: C6 - C9 Fraction	----	240 µg/L	97.3	77.0	137
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4532500)							
EP2210465-001	MW1_220816	EP071: C10 - C14 Fraction	----	430 µg/L	75.5	44.5	122
		EP071: C15 - C28 Fraction	----	445 µg/L	116	55.1	143
		EP071: C29 - C36 Fraction	----	299 µg/L	127	53.6	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4529747)							
EP2210465-002	MW2_220816	EP080: C6 - C10 Fraction	C6_C10	290 µg/L	101	77.0	137

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4529749)							
EP2210450-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	290 µg/L	90.7	77.0	137
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4532500)							
EP2210465-001	MW1_220816	EP071: >C10 - C16 Fraction	----	431 µg/L	80.2	44.5	122
		EP071: >C16 - C34 Fraction	----	540 µg/L	139	55.1	143
		EP071: >C34 - C40 Fraction	----	193 µg/L	114	53.6	128
EP080: BTEXN (QCLot: 4529747)							
EP2210465-002	MW2_220816	EP080: Benzene	71-43-2	20 µg/L	99.2	77.0	122
		EP080: Toluene	108-88-3	20 µg/L	108	73.5	126
EP080: BTEXN (QCLot: 4529749)							
EP2210450-001	Anonymous	EP080: Benzene	71-43-2	20 µg/L	111	77.0	122
		EP080: Toluene	108-88-3	20 µg/L	109	73.5	126
EP202A: Phenoxyacetic Acid Herbicides by LCMS (QCLot: 4531939)							
EB2224095-014	Anonymous	EP202-SL: Mecoprop	93-65-2	100 µg/L	109	75.0	143
		EP202-SL: MCPA	94-74-6	100 µg/L	124	76.0	140
		EP202-SL: 2.4-D	94-75-7	100 µg/L	126	77.0	139
		EP202-SL: Triclopyr	55335-06-3	100 µg/L	119	77.0	141
		EP202-SL: 2.4.5-T	93-76-5	100 µg/L	122	78.0	140
		EP202-SL: Picloram	1918-02-1	100 µg/L	98.0	70.0	144
		EP202-SL: Clopyralid	1702-17-6	100 µg/L	96.6	70.0	145
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 4540476)							
ES2229588-010	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.25 µg/L	99.2	72.0	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.25 µg/L	97.8	71.0	127
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.25 µg/L	90.6	68.0	131
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.25 µg/L	97.8	69.0	134
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.25 µg/L	105	65.0	140
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.25 µg/L	93.2	53.0	142
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4540476)							
ES2229588-010	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	1.25 µg/L	84.1	73.0	129
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.25 µg/L	79.0	72.0	129
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.25 µg/L	# Not Determined	72.0	129
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.25 µg/L	105	72.0	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.25 µg/L	110	71.0	133
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.25 µg/L	116	69.0	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.25 µg/L	97.6	71.0	129
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.25 µg/L	104	69.0	133
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.25 µg/L	105	72.0	134

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 4540476) - continued							
ES2229588-010	Anonymous	EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.25 µg/L	109	65.0	144
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.625 µg/L	102	71.0	132
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 4540476)							
ES2229588-010	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.25 µg/L	113	67.0	137
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.625 µg/L	97.4	68.0	141
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.625 µg/L	94.6	62.6	147
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.625 µg/L	90.2	66.0	145
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.625 µg/L	97.2	57.6	145
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.25 µg/L	111	65.0	136
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.25 µg/L	105	61.0	135
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 4540476)							
ES2229588-010	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.25 µg/L	100	63.0	143
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.25 µg/L	101	64.0	140
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.25 µg/L	112	67.0	138
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.25 µg/L	92.4	71.4	144

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EP2210465**	Page	: 1 of 11
Client	: **AURECON AUSTRALASIA PTY LTD**	Laboratory	: Environmental Division Perth
Contact	: ALI ANWAR	Telephone	: +61 2 8784 8555
Project	: Quantem Bunbury Terminal GME 2022	Date Samples Received	: 17-Aug-2022
Site	: ----	Issue Date	: 26-Aug-2022
Sampler	: Will Dumble	No. of samples received	: 8
Order number	: ----	No. of samples analysed	: 8

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

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

Summary of Outliers

Outliers : Quality Control Samples

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

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

Outliers : Analysis Holding Time Compliance

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

Outliers : Frequency of Quality Control Samples

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

Outliers : Quality Control Samples

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **WATER**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP231B: Perfluoroalkyl Carboxylic Acids	ES2229588--010	Anonymous	**Perfluorohexanoic acid (PFHxA)**	307-24-4	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Outliers : Analysis Holding Time Compliance

Matrix: **WATER**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EA005P: pH by PC Titrator						
Clear Plastic Bottle - Natural						
MW1_220816, MW2_220816, B-015B_220816, RN3	----	----	----	24-Aug-2022	17-Aug-2022	**7**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Matrix Spikes (MS)					
Pesticides by GCMS	0	6	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	0	5	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TPH - Speciation	0	5	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
EA005P: pH by PC Titrator							
Clear Plastic Bottle - Natural (EA005-P)							
MW1_220816, MW2_220816, B-015B_220816, RN3	**16-Aug-2022**	**----**	----	----	**24-Aug-2022**	17-Aug-2022	×

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
EG020T: Total Metals by ICP-MS							
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified (EG020B-T)							
MW1_220816, MW2_220816, B-015B_220816, QC102, RN3	**16-Aug-2022**	**23-Aug-2022**	12-Feb-2023	✓	**23-Aug-2022**	12-Feb-2023	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear HDPE (U-T ORC) - Unfiltered; Lab-acidified (EG035T)							
MW1_220816, MW2_220816, B-015B_220816, QC102, RN3	**16-Aug-2022**	**----**	----	----	**23-Aug-2022**	13-Sep-2022	✓
EG050T: Total Hexavalent Chromium							
Clear Plastic Bottle - NaOH (EG050G-T)							
MW1_220816, MW2_220816, B-015B_220816, QC102, RN3	**16-Aug-2022**	**----**	----	----	**24-Aug-2022**	13-Sep-2022	✓
EK026SF: Total CN by Segmented Flow Analyser							
White Plastic Bottle-NaOH (EK026SF)							
MW1_220816, MW2_220816, B-015B_220816, QC102, RN3	**16-Aug-2022**	**----**	----	----	**19-Aug-2022**	30-Aug-2022	✓
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser							
White Plastic Bottle-NaOH (EK028SF)							
MW1_220816, MW2_220816, B-015B_220816, QC102, RN3	**16-Aug-2022**	**----**	----	----	**19-Aug-2022**	30-Aug-2022	✓
EK040P: Fluoride by PC Titrator							
Clear Plastic Bottle - Natural (EK040P)							
MW1_220816, MW2_220816, B-015B_220816, RN3	**16-Aug-2022**	**----**	----	----	**24-Aug-2022**	13-Sep-2022	✓
EP066: Polychlorinated Biphenyls (PCB)							
Amber Glass Bottle - Unpreserved (EP066)							
MW1_220816, MW2_220816, B-015B_220816, QC102, RN3	**16-Aug-2022**	**23-Aug-2022**	23-Aug-2022	✓	**25-Aug-2022**	02-Oct-2022	✓
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068)							
MW1_220816, MW2_220816, B-015B_220816, QC102, RN3	**16-Aug-2022**	**23-Aug-2022**	23-Aug-2022	✓	**25-Aug-2022**	02-Oct-2022	✓

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
EP070: Total Petroleum Hydrocarbons - Speciation							
Amber Glass Bottle - Unpreserved (EP070)							
MW1_220816, B-015B_220816, RN3 / MW2_220816, QC102,	**16-Aug-2022**	**23-Aug-2022**	23-Aug-2022	✓	**24-Aug-2022**	02-Oct-2022	✓
EP074A: Monocyclic Aromatic Hydrocarbons							
Amber VOC Vial - Sulfuric Acid (EP074)							
MW1_220816, B-015B_220816, RN3 / MW2_220816, QC102,	**16-Aug-2022**	**22-Aug-2022**	30-Aug-2022	✓	**22-Aug-2022**	30-Aug-2022	✓
EP075(SIM)A: Phenolic Compounds							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
MW1_220816, B-015B_220816, RN3 / MW2_220816, QC102,	**16-Aug-2022**	**23-Aug-2022**	23-Aug-2022	✓	**25-Aug-2022**	02-Oct-2022	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
MW1_220816, B-015B_220816, RN3 / MW2_220816, QC102,	**16-Aug-2022**	**23-Aug-2022**	23-Aug-2022	✓	**25-Aug-2022**	02-Oct-2022	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071)							
MW1_220816, B-015B_220816, RN3 / MW2_220816, QC102,	**16-Aug-2022**	**23-Aug-2022**	23-Aug-2022	✓	**25-Aug-2022**	02-Oct-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
TBW 970, TSW 050 - Control / TSW 050,	**15-Aug-2022**	**20-Aug-2022**	29-Aug-2022	✓	**20-Aug-2022**	29-Aug-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
MW1_220816, B-015B_220816, RN3 / MW2_220816, QC102,	**16-Aug-2022**	**22-Aug-2022**	30-Aug-2022	✓	**22-Aug-2022**	30-Aug-2022	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071)							
MW1_220816, B-015B_220816, RN3 / MW2_220816, QC102,	**16-Aug-2022**	**23-Aug-2022**	23-Aug-2022	✓	**25-Aug-2022**	02-Oct-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
TBW 970, TSW 050 - Control / TSW 050,	**15-Aug-2022**	**20-Aug-2022**	29-Aug-2022	✓	**20-Aug-2022**	29-Aug-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
MW1_220816, B-015B_220816, RN3 / MW2_220816, QC102,	**16-Aug-2022**	**22-Aug-2022**	30-Aug-2022	✓	**22-Aug-2022**	30-Aug-2022	✓
EP080: BTEXN							
Amber VOC Vial - Sulfuric Acid (EP080)							
TBW 970, TSW 050 - Control / TSW 050,	**15-Aug-2022**	**20-Aug-2022**	29-Aug-2022	✓	**20-Aug-2022**	29-Aug-2022	✓
Amber VOC Vial - Sulfuric Acid (EP080)							
MW1_220816, B-015B_220816, RN3 / MW2_220816, QC102,	**16-Aug-2022**	**22-Aug-2022**	30-Aug-2022	✓	**22-Aug-2022**	30-Aug-2022	✓
EP202A: Phenoxyacetic Acid Herbicides by LCMS							
Amber Bottle Unpreserved for Specialist Organics (EP202-SL)							
MW1_220816, B-015B_220816, RN3 / MW2_220816, QC102,	**16-Aug-2022**	**----**	----	----	**22-Aug-2022**	23-Aug-2022	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
MW1_220816, B-015B_220816, RN3 / MW2_220816, QC102,	**16-Aug-2022**	**26-Aug-2022**	12-Feb-2023	✓	**26-Aug-2022**	12-Feb-2023	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X)							
MW1_220816, B-015B_220816, RN3 / MW2_220816, QC102,	**16-Aug-2022**	**26-Aug-2022**	12-Feb-2023	✓	**26-Aug-2022**	12-Feb-2023	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X)							
MW1_220816, B-015B_220816, RN3 / MW2_220816, QC102,	**16-Aug-2022**	**26-Aug-2022**	12-Feb-2023	✓	**26-Aug-2022**	12-Feb-2023	✓

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
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X)							
MW1_220816, MW2_220816, B-015B_220816, QC102, RN3	**16-Aug-2022**	**26-Aug-2022**	12-Feb-2023	✓	**26-Aug-2022**	12-Feb-2023	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X)							
MW1_220816, MW2_220816, B-015B_220816, QC102, RN3	**16-Aug-2022**	**26-Aug-2022**	12-Feb-2023	✓	**26-Aug-2022**	12-Feb-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: **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)							
Fluoride by Auto Titrator	EK040P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Total	EG050G-T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	5	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	14	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	6	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202-SL	2	12	**16.67**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	5	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	4	28	**14.29**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite B	EG020B-T	1	5	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Speciation	EP070	1	5	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	5	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	23	**13.04**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	5	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Weak Acid Dissociable Cyanide by Segmented Flow Analyser	EK028SF	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Fluoride by Auto Titrator	EK040P	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Total	EG050G-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
pH by Auto Titrator	EA005-P	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202-SL	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	28	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite B	EG020B-T	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Speciation	EP070	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	23	**8.70**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Control Samples (LCS) - Continued							
Weak Acid Dissociable Cyanide by Segmented Flow Analyser	EK028SF	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Fluoride by Auto Titrator	EK040P	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Total	EG050G-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	6	**16.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202-SL	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	28	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite B	EG020B-T	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Speciation	EP070	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	23	**8.70**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Weak Acid Dissociable Cyanide by Segmented Flow Analyser	EK028SF	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Fluoride by Auto Titrator	EK040P	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Discrete Analyser - Total	EG050G-T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	14	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	6	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202-SL	1	12	**8.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	0	5	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Cyanide by Segmented Flow Analyser	EK026SF	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	28	**7.14**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TPH - Speciation	EP070	0	5	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	23	**8.70**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Weak Acid Dissociable Cyanide by Segmented Flow Analyser	EK028SF	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
pH by Auto Titrator	EA005-P	WATER	In house: Referenced to APHA 4500 H+ B. This procedure determines pH of water samples by automated ISE. This method is compliant with NEPM Schedule B(3)
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Metals by ICP-MS - Suite B	EG020B-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).
Hexavalent Chromium by Discrete Analyser - Total	EG050G-T	WATER	In house: Referenced to APHA 3500 Cr-A & B. Hexavalent chromium is determined directly on water sample by Descrete Analyser as received by pH adjustment and colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM Schedule B(3).
Total Cyanide by Segmented Flow Analyser	EK026SF	WATER	In house: Referenced to APHA 4500-CN C&O / ASTM D7511 / ISO 14403. Sodium hydroxide preserved samples are introduced into an automated segmented flow analyser. Complex bound cyanide is decomposed in a continuously flowing stream, at a pH of 3.8, by the effect of UV light. A UV-B lamp (312 nm) and a decomposition spiral of borosilicate glass are used to filter out UV light with a wavelength of less than 290 nm thus preventing the conversion of thiocyanate into cyanide. The hydrogen cyanide present at a pH of 3.8 is separated by gas dialysis. The hydrogen cyanide is then determined photometrically, based on the reaction of cyanide with chloramine-T to form cyanogen chloride. This then reacts with 4-pyridine carboxylic acid and 1,3-dimethylbarbituric acid to give a red colour which is measured at 600 nm. This method is compliant with NEPM Schedule B(3)
Weak Acid Dissociable Cyanide by Segmented Flow Analyser	EK028SF	WATER	In house: Referenced to APHA 4500-CN C&O / ISO 14403. Samples preserved with sodium hydroxide are introduced into an automated segmented flow analyser. Hydrogen cyanide is liberated from a slightly acidified (pH 4.5) and is dialysed. Tight cyanide complexes that would not be amenable to oxidation by chlorine are not converted. Iron cyanide complexes are precipitated with zinc acetate. Liberated HCN diffuses through a membrane into a stream of sodium hydroxide where it is carried as CN- The cyanide in caustic solution is buffered to pH 5.2 and further converted to cyanogen chloride by reaction with chloramine-T. Cyanogen chloride subsequently reacts with 4 ¿pyridine carboxylic and 1,3 - dimethylbarbituric acids to give a red colour complex. This colour is measured at 600 nm. This method is compliant with NEPM Schedule B(3)

Analytical Methods	Method	Matrix	Method Descriptions
Fluoride by Auto Titrator	EK040P	WATER	In house: Referenced to APHA 4500-F C: CDTA is added to the sample to provide a uniform ionic strength background, adjust pH, and break up complexes. Fluoride concentration is determined by either manual or automatic ISE measurement. This method is compliant with NEPM Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	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)
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)
TPH - Speciation	EP070	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 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)
Volatile Organic Compounds	EP074	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. This method is compliant with 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)
Phenoxyacetic Acid Herbicides (LCMS - Standard DL)	EP202-SL	WATER	In house: LCMS (Electrospray in negative mode). After adding surrogate and acetic acid, water samples are injected on a C18 column for LC/MS determination.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In-house: Analysis of fresh and saline waters by Solid Phase Extraction (SPE) followed by LC-Electrospray-MS-MS, Negative Mode using MRM and internal standard quantitation. Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures and data quality objectives conform to US DoD QSM 5.3, table B-15 requirements.

Preparation Methods	Method	Matrix	Method Descriptions
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM 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.
Solid Phase Extraction (SPE) for PFAS in water	ORG72	WATER	In-house: Isotopically labelled analogues of target analytes used as internal standards and surrogates are added to the sample container. The entire contents are transferred to a solid phase extraction (SPE) cartridge. The sample container is successively rinsed with aliquots of the elution solvent. The eluted extract is combined with an equal volume of reagent water and a portion is filtered for analysis. Method procedures conform to US DoD QSM 5.3, table B-15 requirements.

CHAIN OF CUSTODY

ALS Laboratory: please tick →

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CLIENT: Aurecon	**TURNAROUND REQUIREMENTS :** Standard TAT (List due date) (Standard TAT may be longer for some tests e.g.. Ultra Trace Organics)	**FOR LABORATORY USE ONLY (Circle)**
OFFICE: ALS Perth	**ALS QUOTE NO.:** EN/585/22	Custody Seal Intact? Yes No N/A
PROJECT: Quantem Bunbury Terminal GME 2022	**COUNTRY OF ORIGIN:** AUSTRALIA	Free ice / frozen ice bricks present upon receipt? Yes No N/A
PURCHASE ORDER NUMBER: 521240	**COC SEQUENCE NUMBER (Circle)** COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt: °C
PROJECT MANAGER: Ali Anwar **CONTACT PH:** 0421 876 595	OF: 1 2 3 4 5 6 7	Other comment:
SAMPLER: Will Dumble **SAMPLER MOBILE:** 0467610459	**RELINQUISHED BY:** *Will Dumble* DATE/TIME:	**RECEIVED BY:** DATE/TIME: 17/8 1645
COC Emailed to ALS? (YES / NO) **EDD FORMAT (or default):** ESdat	**RELINQUISHED BY:** DATE/TIME:	**RECEIVED BY:** DATE/TIME:
Email Reports to: Ali.Anwar@aurecongroup.com; Will.Dumble@aurecongroup.com		
Email Invoice to: Vendorinvoices@aurecongroup.com		

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where **Metals** are required, specify **Total** (unfiltered bottle required) or **Dissolved** (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*	TOTAL BOTTLES	EP/585/22								Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
1	MW1_220816	16/08/2022 11:50	W			X								Filter Metals/Cyanide in lab
2	MW2_220816	16/08/2022 13:15	W			X								Filter Metals/Cyanide in lab
3	B-015B_220816	16/08/2022 15:30	W			X								
4	QC102_220816	16/08/2022	W			X								
EUROFINS ~~5~~	QC202_220816	16/08/2022	W			X								Forward to Eurofins
6	RN3_220816	16/08/2022 18:30	W			X								
	TBW_970													
	TBW_050													
				TOTAL		6								

Environmental Division
Perth
Work Order Reference
EP2210465

Telephone : -- 61-8-9406 1301

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; LI = Lugols Iodine Preserved Bottles; STT = Sterile Sodium Thiosulfate Preserved Bottles.

Appendix I
Sample Location Plan

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Legend

Invesitagtion Locations

Type

- Borehole
- Monitoring Well
- Approximate Site Location

Notes: Esri, HERE, Garmin, FAO, NOAA, USGS, Esri, USGS

Date: 14/09/2022 Version: 1

A4 scale: 1:2,500

0 37.5 75 Metres

Job No: P521420

Coordinate System: GDA 1994 MGA Zone 50

Quantem Bunbury Terminal

Investigation Locations

Author: PVC

C:\Users\nicola.webb\Aurecon Group\521420 - Quantem Bunbury Terminal ID Stage - 8. GIS Figures\Spatial Workspace\Working\P521420_Quantem_20220808\

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