Soil Assessment

1 Olympic Boulevard, Olympic Park, NSW

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ARC ENVIRONMENTAL

Soil Assessment

1 Olympic Boulevard, Olympic Park, NSW

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List of Acronyms

ABC	Ambient Background Concentration
ACL	Added Contaminant Limits
ACM	Asbestos Containing Materials
AHD	Australian Height Datum
AS	Australian Standard
AST	Aboveground Storage Tank
bgl	Below ground level
btoc	Below top of casing
CEC	Cation Exchange Capacity
COC	Chain of Custody
CS	Characteristic Scenario
BTEX	Benzene, toluene, ethylbenzene, xylenes
BTEXN	Benzene, toluene, ethylbenzene, xylenes, naphthalene
DELWP	Department of Environment, Land, Water and Planning
DSE	Department of Sustainability and Environment
DSI	Detailed Site Investigation
DO	Dissolved oxygen
DQO	Data Quality Objectives
EC	Electrical Conductivity
EIL	Ecological Investigation Level
ERS	Environmental Reference Standard
ESA	Environmental Site Assessment
ESL	Ecological Screening Level
EMP	Environment Management Plan
EPA	Environment Protection Authority
GSV	Gas Screening Value
HIL	Human Health Investigation Level
HSL	Human Health Screening Level
IWRG	Industrial Waste Resource Guidelines
km	Kilometre
L	Litre
LOR	Limits of Reporting
LFG	Landfill Gas
m	Metre
MGA	Map Grip of Australia
mm	Millimetre
MoE	Maintenance of Ecosystems
MW	Monitoring well
NATA	National Association of Testing Authorities
NDD	Non-destructive digging
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure

Acronym	Definition
NHMRC	National Health and Medical Research Council
OCP	Organochlorine Pesticides
PAH	Polycyclic Aromatic hydrocarbon
PCB	Polychlorinated Biphenyls
PCR	Primary Contact Recreation
PID	Photo-ionisation Detector
PIR	Property Information Report
PSI	Preliminary Site Investigation
ppm	Parts per million
QAQC	Quality Assurance / Quality Control
RPD	Relative Percentage Difference
SB	Soil Bore
SOPA	Sydney Olympic Park Authority
TCE	Trichloroethylene
TDS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
UPSS	Underground Petroleum Storage Systems
USCS	Unified Soil Classification System
USEPA	United States Environment Protection Authority
UST	Underground Storage Tank
VHC	Volatile Chlorinated Hydrocarbons
VOCs	Volatile Organic Compounds
WHO	World Health Organisation

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Executive Summary

ARC Environmental has completed a Soil Assessment at the GWS Centre of Excellence located at 1 Olympic Boulevard, Sydney Olympic Park, NSW ('the Site').

This Soil Assessment was undertaken to assess the suitability of surplus soils from the Light Tower Footings excavations and Camera Pole Footing for reuse in the proposed Spectator Mounds. Works completed included the advancement of thirteen (13) soil bores at depths of up to 1.9 mbgl, within the extent of the current clay capping layer, and the collection of soil samples

The results of this assessment indicated that fill soils at SB09 at 0.5 mbgl, contained concentrations of Benzo(a)pyrene (TEQ) exceeding adopted human health criteria. The results indicated that concentrations could present a potential risk to users of the Site (i.e. the proposed Spectator Mound) through ingestion or dermal absorption exposure pathways. The adopted health criteria are calculated for chronic exposure. Considering the use of the Spectator Mound by visitors would not be over a long period of time and access to the subsurface would be limited by grass cover, the soils to be excavated for the proposed light tower footings in the south-east of the Site (SB07-SB09) are considered to be suitable to be reused for the Spectator Mound, subject to the soil being located below a 1 metre layer of other suitable soil.

The results of the assessment of all other areas were below adopted human health criteria indicating that soil to be excavated for footings is suitable for reuse in the proposed Spectator mound.

The result at soil bores SB09 and SB13 at depths of 0.5 mbgl also contained concentrations of benzo(a)pyrene exceeding adopted ecological criteria. These criteria are significant for root zones; however, the vegetation within the investigation areas did not appear distressed, which indicates that the impact to the environment is considered to be low and acceptable.

Anthropogenic inclusions such as slag, ash, plastic sheet, and porcelain tile fragments were noted in shallow fill material. These aesthetic impacts could adversely impact upon the use of the land at site if not managed appropriately.

1. Introduction

ARC Environmental (ARC) was engaged by FDC Construction to undertake a Soil Assessment for surplus spoils generated by the proposed development and construction of Field Lighting Footings for reuse within the proposed Spectator Mound at the Centre of Excellence (CoE) located at 1 Olympic Boulevard, Olympic Park, NSW ("the Site"). The area and location of the Site is defined in ***Figure 1***.

ARC understands that FDC Construction propose to reuse the surplus soils generated during the excavation of the Pool Hall and Light Footings to create a Spectator Mound in the Southeast corner of the Site. As such, the suitability of the soil for reuse will be assessed. It is understood that the Light Tower Footings will be approximately 5m x 5m x 1.2m depth and the Camera Pole Footing will be approximately 0.6m x 0.6m x 1.9m depth and are proposed in the following areas outlined in ***Figure 2***.

1.1 Objectives

The project objective is to assess the suitability of surplus soils from the Light Tower Footings and Camera Pole Footing excavations for reuse in the proposed Spectator Mounds.

1.2 Scope of Works

Based on the project objectives, the scope of works completed by ARC included the following:

- Preparation of project-specific health and safety documentation appropriate for the scope of works, and completion of required inductions;
- Mobilisation to the Site and collection of soil samples from the advancement of thirteen (13) soil bores to a depth of up to 1.2 metres below ground level (mbgl) with a hand auger at each of the four (4) proposed Light Footings and to a depth of 1.9 mbgl at one (1) camera footing location. The location of soil bores at the Site is defined in ***Figure 2****:*
- Logging the soil profile encountered and screening of soil samples for Volatile Organic Compounds (VOCs) with a Photo-Ionisation Detector (PID);
- Laboratory analysis of soil samples by a laboratory accredited by the National Association of Testing Authorities (NATA) for the methods used; and
- Collation and interpretation of the data, including a quality assurance / quality control (QA/QC) data validation process; and preparation of this Soil Assessment report.

2. Field Activities

2.1 Fieldworks Methodology

Field activities that were undertaken as part of the scope of works are summarised in ***Table 2.1***.

Table 2.1 Summary of Field Activities

Activity	Description
Dates of Field Activity	**30 July 2024** Advancement of thirteen (13) soil bores (SB01 – SB13), including collection of soil samples.
Sampling Rationale	Sampling locations targeted in-situ soils at the proposed footings excavations as follows: • Three (3) bores to a depth of up to 1.2 mbgl with a hand auger at each of the four (4) proposed Light Footings location; and • One bore to a depth of 1.9mbgl.
Soil Boring	ARC advanced a total of thirteen (13) soil bores using a hand auger to a maximum depth of up to 1.9 mbgl. All observations and readings, including visual and olfactory assessments, were recorded in the field on soil bore logs and in line with the USCS (Unified Soil Classification System). Borehole logs are included in ***Appendix A.***
Soil Sampling	Soil samples were generally collected *in-situ* at the surface, 0.5 m depths, and one metre. Duplicate soil samples were collected in snap-lock bags for screening with a calibrated PID. The PID calibration certificate is included within ***Appendix B.*** Clean disposable nitrile gloves were used for soil sampling collection. Samples were placed in laboratory prepared glass jar sample containers with individual and unique identification including project number, sampling date and sample number, and then placed into a cooled, insulated, and sealed container for transport to the laboratory under Chain of Custody (COC) procedures. Copies of the COC documentation are presented in ***Appendix C***.
Sampling Location Reinstatement	Following completion of logging and sampling, the soil bores were backfilled with soil in the order that they were removed.
Equipment Decontamination	Decontamination of re-useable equipment including the hand auger, comprised rinsing in a mixture of industrial grade phosphate free detergent (Decon 90) and tap water, followed by a rinse in Decon 90 and de-ionised water and a final rinse in de-ionised water. Any excess soil was removed from the hand auger with a scrubbing brush. In addition, a new pair of Nitrile gloves was used between each sample collection location.

2.2 Laboratory Analysis

The soil samples and Quality Assurance / Quality Control (QAQC) samples were transported to ALS Laboratories (ALS) in Melbourne for chemical analysis. ALS are accredited by the National Association of Testing Authorities (NATA) for the analyses undertaken. Laboratory documentation is included within ***Appendix C***.

Soil samples were submitted for analysis to a NATA certified testing laboratory for the following analysis:

- 4 x NEPM (2013) HIL Table 1A (1) Screen;
- 23 x 8 metals (As, Cd, Cr, Cu, Ni, Pb, Zn, Hg); and
- 23 x Polycyclic Aromatic Hydrocarbons (PAH).

In addition, four (4) quality control samples during soil sampling were analysed as follows:

- One (1) intra-laboratory duplicate: 8 metals / PAH;
- One (1) inter-laboratory duplicate: 8 metals / PAH;
- One (1) rinsate blank: 8 metals / PAH; and
- One (1) trip blank: TRH C_6-C_9 / BTEXN.

3. Regulatory Framework and Assessment Criteria

The environmental assessment was undertaken in accordance with regulatory framework and assessment criteria outlined below.

3.1 Regulatory Framework for Soil

The following regulatory guidance documents have been referenced in conducting the soil assessment:

- NSW EPA Contaminated Land Guidelines - Sampling Design Part 1 – Application, 2022.
- NSW EPA Contaminated Land Guidelines - Sampling Design Part 2 – Interpretation, 2022.
- NSW Government Office of Environment & Heritage, Guidelines for Consultants Reporting on Contaminated Sites, 2011.
- National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013.
- National Environment Protection Council, and including ERRATA update 6 February 2014.

State Environmental Planning Policy 55 Managing Land Contamination 1998 (SEPP 55) sets out the regulatory framework for the management of contaminated land within the State of NSW. The intent of this policy is to provide for a state-wide planning approach to the remediation of contaminated land and to reduce the risk of harm to human health or any other aspect of the environment. The SEPP 55 was introduced in 1998 under the Environmental Planning and Assessment Act 1979.

SEPP 55 specifies when contamination and remediation is to be considered in determining development applications. Consideration of risk must include risks during construction and operation of the development. The former includes work safety issues as well as the potential for works to disturb contamination and cause off-site movement of chemicals.

3.2 Soil Quality Assessment Criteria

Assessment criteria has been selected to provide an appropriate indication of the environmental status of the Light Tower and Camera Pole Footing area with consideration given to the current and future proposed commercial land use, and intrusive workers during works. ARC refers to the National Environment Protection Council (NEPC) (2013) - National Environment Protection (Assessment of Site Contamination) Amendment Measure, 1999 (ASC NEPM, 2013) for site assessment criteria as approved by the NSW EPA.

The applicable Health-based Investigation Levels (HILs) and Health Screening Levels (HSL's) for this investigation will include recreational for soil reuse in the proposed spectator mounds, as follows:

- NEPM 2013 Health Investigation Levels and Health Screening Levels (HIL/HSL C - Recreational);
- CRC Care Soil Health Screening Levels for Vapour Intrusion (C – Recreational/Open Space); and
- CRC Care Soil Health Screening Levels for Direct Contact –Intrusive Maintenance Workers.

The applicable Ecological-based Investigation Levels (EILs) and Ecological Screening Levels (ESL's) for this investigation will include the following:

- Maintenance of Ecosystems – Modified and Highly Modified Ecosystems: NEPM 2013 Ecological Investigation Levels and Ecological Screening Levels (industrial and public open space).

In the absence of soil characteristic data, the lowest NEPM added contaminant limit (ACL) value has been adopted as the site-specific EILs.

With respect to asbestos containing materials (ACM), ARC has adopted a criterion of “no visible ACM” in surface soils (upper 10 cm) as well as Western Australia Department of Health (WA DoH) Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (2009).

The ecological and human health “investigation levels” are not intended to be interpreted as “maximum permissible levels”, “clean up levels” or “safe levels”, rather, they are levels at which further investigation or assessment should be undertaken to provide assurance that unacceptable contamination does not occur. Subsequent assessment on a site-specific basis often results in higher levels being acceptable. However, since the “investigation levels” are generally set at conservatively low levels, they are often taken to be the acceptable levels.

4. Field and Laboratory Results

4.1 Soil Results

4.1.1 Site Geology

Based on a review of borelogs from the site investigation the Site is predominantly underlain by crushed rock/gravels, gravelly sand and sandy clays, followed by low-medium plasticity, dry clays. Gravelly clays, likely associated with the backfilling of the excavation during the installation of the former UPSS was present in SB02. Borelogs are presented in ***Appendix A*** and the subsurface geology is summarised in ***Table 4.1***.

Table 4.1 Summary of Site Geology

Approximate Depth (mbgl)	Geological Description
SB01 – SB06, SB10 – SB13	
0 – 0.1	Topsoil overlain by grass.
0.1 – 0.35	FILL: Clayey Sand, crushed rocks/gravels, ash, limestone cobbles, siltstone cobbles, porcelain tiles, slag, brown/grey, medium-coarse grain, moist.
0.35 – 1.9	FILL: Sandy, gravelly Clay, hard, ash, basalt cobbles, basalt cobbles, mottled light brown/grey, low-medium plasticity, hard, dry.
Southeast corner of Site (SB07 – SB09)*	
0 – 0.2	Topsoil overlain by grass and underlain by geofabric layer.
0.2 – 0.3	Fill: Gravelly Sands, large rocks, slag, brown/grey, coarse, moist.
0.3 – 0.4	FILL: Silty Sand, dark brown, fine, moist.
0.4 – 0.8	FILL: Gravelly Sand/Clay intermixed, basalt cobbles, ash, hard, dry.

Previous soil logging undertaken as part of the Environmental and Geotechnical Site Assessment (ARC, December 2019) included a bore (BH14) in the vicinity of the proposed southeast light tower which indicated consistent silty clay fill with underlying waste not encountered until a depth of 3 mbgl. Although the target depth of 1.2m was not achieved in soil bores SB07-SB09 (maximum depth sampled was 0.8 mbgl) due to hand auger refusal, it can be considered that the sampling results above 0.8 mbgl would reflect the conditions to a depth of 1.2 mbgl.

4.1.2 Soil Investigation Field Observations

Odours and / or staining during sampling was noted as follows:

- No staining was noted throughout;
- No odour was observed throughout with the exception of a rotten egg / sulphur odour form 0.3 – 0.5 mbgl at SB07.

- No elevated PID reading were noted, with all measurements reading ≤1.2 ppm; and
- Fill material (the clay capping layer) was observed across the Site to a maximum depth of 1.9 mbgl. Anthropogenic inclusions such as slag, ash, plastic sheet, and porcelain tile fragments were noted in shallow fill material. Asbestos Containing Material (ACM) was not observed within fill materials.

Field screening results, including visual and olfactory observations of the soil matrix and the PID head space field measurements, are included in the bore logs presented in ***Appendix A***.

4.1.3 Soil Analytical Results

Soil analytical results and adopted assessment criteria are presented in ***Attached Table 1***. The NATA certified laboratory reports and accompanying Chain of Custody (CoC) documentation are included with the laboratory reports included within ***Appendix C***. The analytical results exceeding adopted assessment criteria are summarised in **Table 4.2**.

Table 4.2 Exceedances of Adopted Soil Assessment Criteria

Analyte	Results		Criteria Exceeded	
	Soil ID	Concentration (mg/kg)	Criteria (mg/kg)	Source
TRH >C16-C34 Fraction (F3)	SB07_0.6	330	300	NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0 - 2m)
Copper	SB10_0.5*	76	60	NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0 - 2m)
Zinc	SB03_1.0 SB07_0.6 SB10_0.5*	109 73 110	70	NEPM Generic EILs - Public Open Space
Benzo(a) pyrene	SB09_0.5 SB13_0.5	12.3 1.8	0.7	NEPM 2013 Table 1B(6) ESLs for Public Open Space
Benzo(a)pyrene TEQ calc (Half)	SB09_0.5	17.8	3	NEPM 2013 Table 1A(1) HILs Rec C Soil
Benzo(a)pyrene TEQ (LOR)	SB09_0.5	17.8	3	NEPM 2013 Table 1A(1) HILs Rec C Soil
Benzo(a)pyrene TEQ calc (Zero)	SB09_0.5	17.8	3	NEPM 2013 Table 1A(1) HILs Rec C Soil

* Denotes that the inter- / intra-laboratory duplicate was adopted where QA/QC results exceeded the adopted criteria, but the primary sample did not.

Laboratory results also indicated that:

- Exceedances of the adopted assessment criteria were limited to soil bores SB03, SB07, SB09, SB10 and SB13.
- All samples collected within the top 1.0 m had reported results below the adopted assessment criteria, with the exception of one exceedance of ecological criteria for copper and two for zinc;

- With the exception of slightly elevated concentrations in SB07_0.6, TPH/TRH concentrations were below laboratory limits of reporting (LORs) in all soil samples. There was insufficient data available to conduct 95% Upper Confidence Level (UCL) calculations for TRH >C16-C34 Fraction (F3);
- BTEXN concentrations were reported below LORs in all soil samples;
- Concentrations of phenols, Organochlorine Pesticides, Organophosphorous Pesticides, pesticides, and halogenated benzenes were reported below laboratory LORs across all samples.
- Concentrations of metals were generally reported above LORs in most samples, but below the adopted assessment criteria in all soil samples, with the exception of the above;
- The maximum observed contaminant concentration generally provides a conservative assessment of exposure. However, a maximum concentration may not be representative of the source as a whole and may result in an overestimation of risk. Although individual concentrations of Copper and Zinc exceeded the ecological criteria, when 95% Upper Confidence Limits (UCL) (attached in ***Appendix D***) is applied across the data set for the Site, results for the mean contaminant concentration are below adopted criteria; and
- Individual concentrations of BaP and BaP (TEQ) exceeded the adopted health and ecological criteria, when 95% Upper Confidence Limits (UCL) (attached in ***Appendix D***) is applied across the data set for the Site, results for the mean contaminant concentration are above the adopted criteria. Further, for BaP and BaP (TEQ), the standard deviations were >50% of the respective adopted human health or ecological criteria, in addition, the maximum concentrations for each of these contaminants exceeded 250% of their respective human health / ecological screening level. As such, BaP and BaP (TEQ) concentrations are statistically significant. below indicates where UCLs compared to the adopted criteria within the Site;

Table 4.3 95% UCLs compared to the adopted Human Health / Ecological Criteria

Analyte	95% UCL	Standard Deviation	Maximum Concentration	Criteria	Criteria Exceeded
Copper	22.04	13.58	76	60	NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil (0 - 2m)
Zinc	53.36	27.24	110	70 110	NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil NEPM 2013 T1B(5) Generic EIL - Comm/Ind
Benzo(a)pyrene	***2.906***	***2.272***	***12.3***	0.7 1.4	NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil NEPM 2013 Table 1B(6) ESLs for Comm/Ind, Coarse Soil
Benzo(a)pyrene TEQ (Half)	***4.153***	***3.304***	***17.8***	3	NEPM 2013 Table 1A(1) HILs Rec C Soil
Benzo(a)pyrene TEQ (LOR)	***4.572***	***3.194***	***17.8***	3	NEPM 2013 Table 1A(1) HILs Rec C Soil

Analyte	95% UCL	Standard Deviation	Maximum Concentration	Criteria	Criteria Exceeded
Benzo(a)pyrene TEQ (Zero)	***4.036***	***3.327***	***17.8***	3	NEPM 2013 Table 1A(1) HILs Rec C Soil

Bold/Italics indicates an exceedance of the adopted criteria / summary statistic.

4.2 Quality Assurance/Quality Control

To ensure that representative soil samples are collected, and the analytical results are representative of the actual field conditions, rigorous field and laboratory Quality Assurance and Quality Control (QA/QC) procedures were adopted during sampling and laboratory analysis.

A summary of field quality assessment/quality control (QA/QC) samples collected during the course of this soil assessment is presented in ***Table 4.4***.

Table 4.4 Data Quality Objectives

Parameter	Data Quality Objective	Data Quality Assessment
Field QAQC		
COC Documentation	Documentation completed	Samples were provided to the laboratories with completed chain of custody documentation (attached in ***Appendix C***).
Blank Samples (Rinsate, Trip Blank, Trip Spike)	Concentrations at or near the Limit of Reporting (LOR)	Analytical results for the blank samples are analysed in **Attached Table 3.** Concentrations reported for the trip blank sample QC06 were all less than the LOR, therefore no cross contamination during transit to the laboratory has occurred. Concentrations reported for the rinsate sample QC05 were all less than the LOR, therefore correct rinsing techniques have been employed.
Inter and Intra-Laboratory Samples (1 in 20 samples)	Relative Percentage Difference (RPD) < 30%	Analytical results for the blank samples are analysed in **Attached Table 2.** Intra- and inter-laboratory samples were collected at a rate of at least 1 in 20 samples (2 soil samples for 27 primary soil samples. All RPDs between the primary sample and intra- and inter-laboratory duplicate samples were within the acceptable range according to AS4482.1 – 2005 with exception to: • SB10_0.5 and QC04 for Copper (110.2%) • SB10_0.5 and QC04 for Lead (68%) • SB10_0.5 and QC04 for Zinc (73.29%) Note that RPDs > 50% due to differences where concentrations were reported less than 10 times the detection limits, are not considered to impact the quality of the data. To take a conservative approach, the higher of the results have been adopted for interpretation.
Handling and Preservation	Samples received intact and cold (near 4˚C)	The soil samples were received by the laboratory cooled to a measured ambient temperatures of 13.4, 16.5 and 19.3ºC with ice present in the eskies. Though an elevated temperature was measured for the samples, since ice was present it is considered

Parameter	Data Quality Objective	Data Quality Assessment
		that the samples were sufficiently cooled to prevent the loss of volatiles.
Laboratory QAQC		
Holding Time	Samples analysed within specified holding times	Samples were analysed within recommended holding times for the analysis requested.
Method Blank Samples (1 in 20 samples)	Concentrations at or below the LOR	The laboratory analysis of method blank samples showed all blank results below the laboratory reporting limits.
Laboratory Duplicate Samples (1 in 20 samples)	RPD < 50% or as per laboratory requirement	The laboratory analysis of duplicate samples showed all samples within acceptable limits, with the exception of Manganese. The frequency of laboratory duplicates was adequate for soil analysis, with the exception of PAH/Phenols.
Laboratory Control Samples (1 in 20 samples)	Recovery 75–125% or as per laboratory requirement	Laboratory control spike recoveries showed all results within the acceptable range and with adequate frequency.
Matrix Spikes (1 in 20 Samples)	Recovery 75–125% or as per laboratory requirement	Matrix spike recoveries were all within the laboratory requirements and with adequate frequency, with the exception of PAH/Phenols.
Surrogate (Every Sample)	Recovery with statistically derived QC limits or 70–130%	The laboratory analysis of surrogate recovery samples showed all results within the range 70 – 130% for all regular sample matrices, with the exception of PAH.
Laboratory LORs	LORs lower than adopted guidelines	Limits of reporting for soil samples were deemed to be sufficiently low to enable comparison of contaminant concentrations with adopted assessment criteria.

Overall, the data quality information provides confidence that the soil data is of sufficient quality (in terms of completeness, comparability, representativeness, precision and accuracy) and that the analytical data is suitable for the purposes of this assessment.

5. Discussion and Conclusions

This Soil Assessment was undertaken to assess the suitability of surplus soils from the Light Tower Footings excavations and Camera Pole Footing for reuse in the proposed Spectator Mounds. Works completed included the advancement of thirteen (13) soil bores at depths of up to 1.9 mbgl, within the extent of the current clay capping layer, and the collection of soil samples

The results of this assessment indicated that fill soils at SB09 at 0.5 mbgl, contained concentrations of Benzo(a)pyrene (TEQ) exceeding adopted human health criteria. The results indicated that concentrations could present a potential risk to users of the Site (i.e. the proposed Spectator Mound) through ingestion or dermal absorption exposure pathways. The adopted health criteria are calculated for chronic exposure. Considering the use of the Spectator Mound by visitors would not be over a long period of time and access to the subsurface would be limited by grass cover, the soils to be excavated for the proposed light tower footings in the south-east of the Site (SB07-SB09) are considered to be suitable to be reused for the Spectator Mound, subject to the soil being located below a 1 metre layer of other suitable soil.

The results of the assessment of all other areas were below adopted human health criteria indicating that soil to be excavated for footings is suitable for reuse in the proposed Spectator mound.

The result at soil bores SB09 and SB13 at depths of 0.5 mbgl also contained concentrations of benzo(a)pyrene exceeding adopted ecological criteria. These criteria are significant for root zones; however, the vegetation within the investigation areas did not appear distressed, which indicates that the impact to the environment is considered to be low and acceptable.

Anthropogenic inclusions such as slag, ash, plastic sheet, and porcelain tile fragments were noted in shallow fill material. These aesthetic impacts could adversely impact upon the use of the land at site if not managed appropriately.

6. Limitations

This report was prepared in accordance with the scope of work outlined and/or referenced within this report and subject to the applicable cost, time and other constraints. ARC Environmental performed the services in a manner consistent with the normal level of care and expertise exercised by members of the environmental profession. No warranties, expressed or implied, are made.

ARC Environmental makes no warranty concerning the suitability of the site for any purpose or the permissibility of any use, development or re-development of the site. Use of the site for any purpose may require planning and other approvals and, in some cases, EPA and accredited site auditor approvals. ARC Environmental offers no opinion as to the likelihood of obtaining any such approvals, or the conditions and obligations which such approvals may impose, which may include the requirement for additional environment works.

Except as otherwise stated, ARC Environmental's assessment is limited strictly to identifying specified environmental conditions associated with the subject site and does not evaluate structural or geotechnical conditions of any part of the site (including any buildings, equipment or infrastructure).

This assessment is based on site conditions observed by ARC Environmental personnel in the course of performing their work, sampling and analyses described in the report, and information provided by FDC Construction ("the Client"). Conclusions and recommendations made in the report are the professional opinions of the ARC Environmental personnel involved with the project and, while normal checking of the accuracy of data has been conducted, ARC Environmental assumes no responsibility or liability for errors in data obtained from such sources, regulatory agencies and/or any other external sources, nor from occurrences outside the scope of this project.

The information relating to the soil conditions in this document is considered to be accurate at the date of site issue. Subsurface conditions can vary across a particular site, which cannot be wholly defined by investigation. As a result, it is unlikely that the results and estimations presented in this report will represent the extremes of conditions within the site. Subsurface conditions including impact concentrations can change in a limited period of time.

Only the chemicals specifically referred to in this report have been considered. ARC Environmental makes no statement or representation as to the existence (or otherwise) of any chemicals other than those specifically referred to herein. Except as otherwise specifically stated in this report, ARC Environmental makes no warranty or representation as to the presence or otherwise of asbestos and/or asbestos containing materials (“ACM”) on the site.

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7. References

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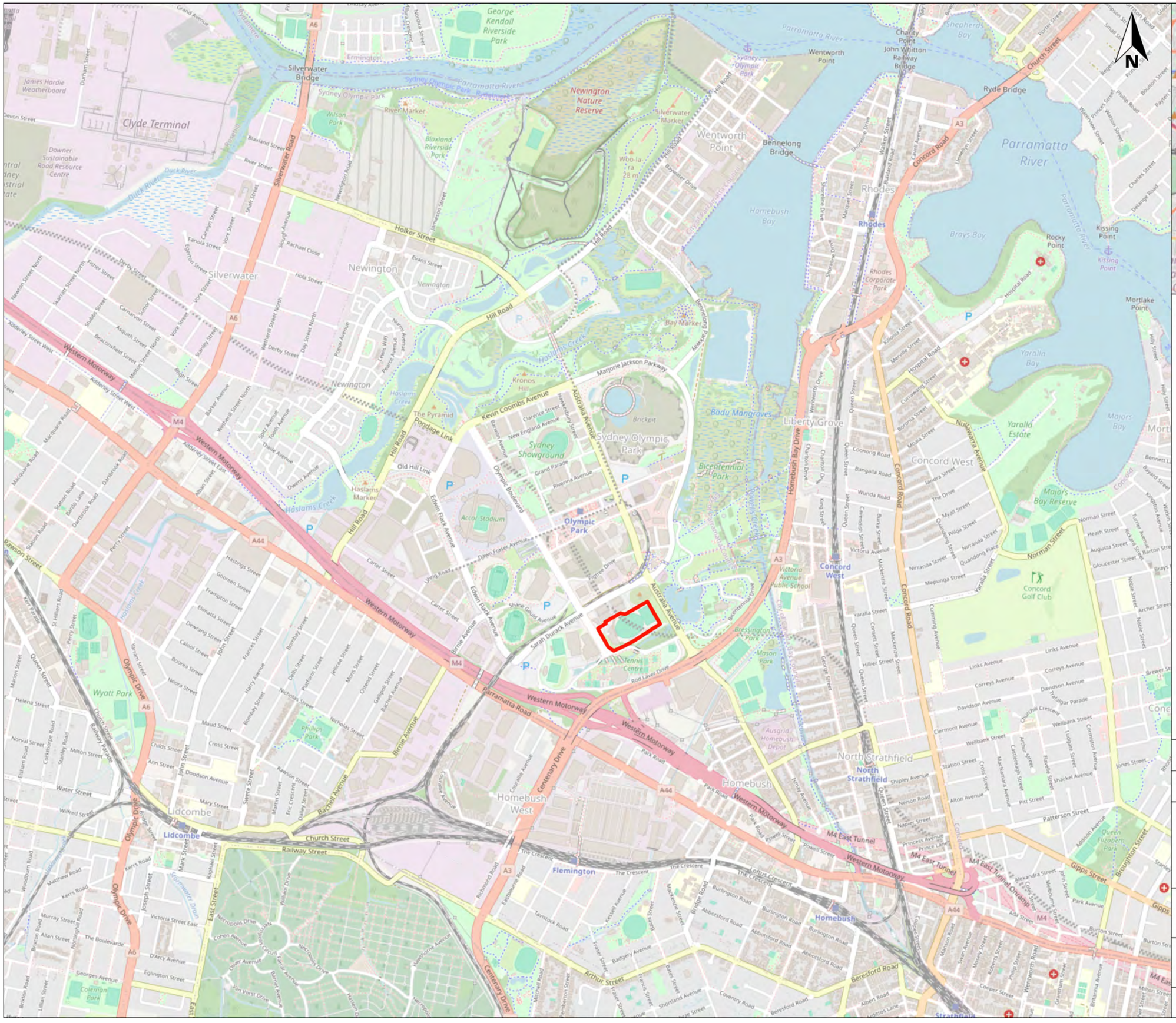
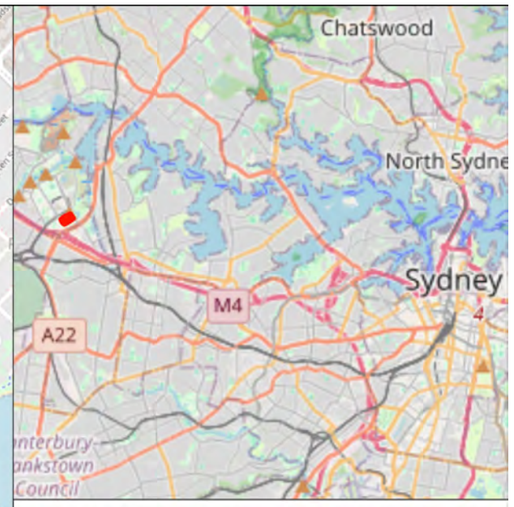
- Standards Australia, 1999. AS 4482.2 – 1999 *Guide to the sampling and investigation of potentially contaminated soil. Part 2: Volatile Substances*

Figures





Legend

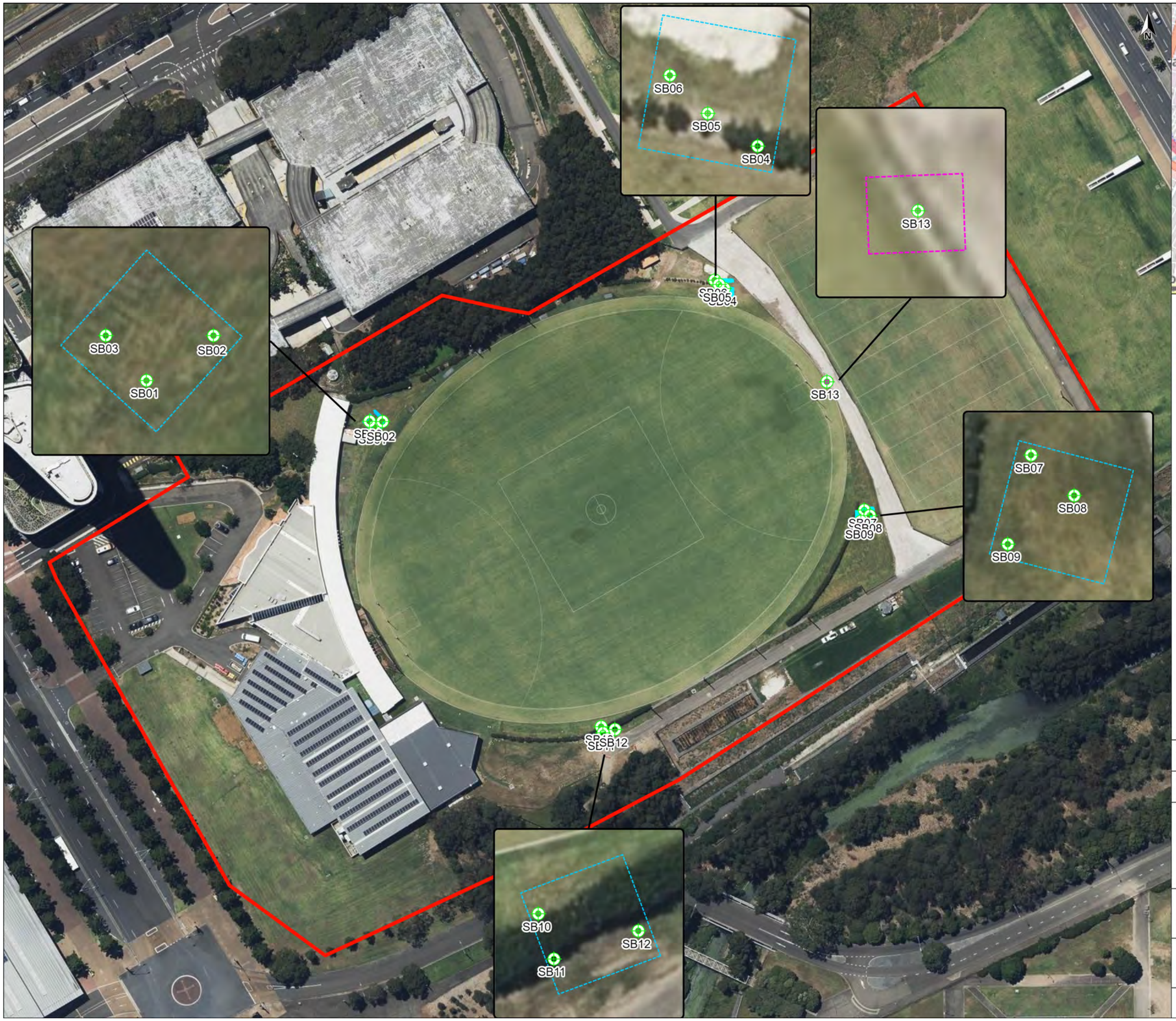
- Site Boundary
- Base Group

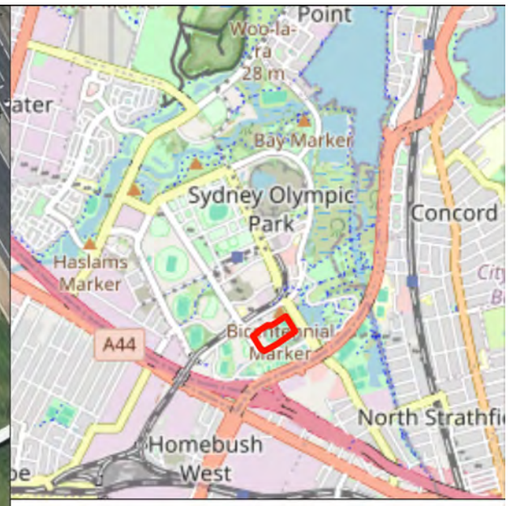
0 250 m 500 m

ARC ENVIRONMENTAL

Produced by **Datanest.earth**

Title: Site Location		
Client: FDC Construction		Size: A3
Project: FDC GWS Spectator Mound DA	Drawn: MF	Figure No.: 1
Date: 07-08-2024	Checked: DT	
Proj No: 2407374	Scale: 1:21000	Version: Final
Projection: EPSG:3308 GDA94 / NSW Lambert		





Legend

- Soil Bores
- 1000 LUX Sports Lighting Pole Footings
- Camera Pole Footings
- Site Boundary

0 25 m 50 m

ARC ENVIRONMENTAL

Produced by **Datanest.earth**

Title: Site Layout		
Client: FDC Construction		Size: A3
Project: FDC GWS Spectator Mound DA	Drawn: MF	Figure No.: 2
Date: 07-08-2024	Checked: DT	
Proj No: 2407374	Scale: 1:1200	Version: Final
Projection: EPSG:3308 GDA94 / NSW Lambert		

Tables

Table 1
Soil Analytical Results
GWS Giants CoE
1 Olympic Boulevard, Olympic Park NSW
2407374

						TPH (mg/kg)					TRH (mg/kg)							BTEX (mg/kg)							
						C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)	C6-C10 Fraction (F1)	C6-C10 (F1 minus BTEX)	>C10-C16 Fraction (F2)	>C10-C16 Fraction (F2 minus Naphthalene)	>C16-C34 Fraction (F3)	>C34-C40 Fraction (F4)	>C10-C40 Fraction (Sum)	Benzene	Toluene	Ethylbenzene	Xylene, m- & p-	Xylene (o)	Xylene Total	Total BTEX	Naphthalene (VOC)
						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						10	50	100	100	50	10	10	50	50	100	100	50	0.2	0.5	0.5	0.5	0.5	0.5	0.2	1
NEPM 2013 EILS Table 1B(5) EIL - Urban Res & Public Open Space						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 ESLS Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2m)						-	-	-	-	-	-	180[11#32]	-	120[11#32]	300[11]	2,800[11]	-	50[11]	85[11]	70[11]	-	-	45[11]	-	-
NEPM 2013 HILS Table 1A(1) HILs Rec C Soil						-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 HSL Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Sand (0-1m)						-	-	-	-	-	-	NL[7#26]	-	NL[7#25]	-	-	-	NL[7]	NL[7]	NL[7]	-	-	NL[7]	-	-
NEPM 2013 HSL Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Sand (1-2m)						-	-	-	-	-	-	NL[7#26]	-	NL[7#25]	-	-	-	NL[7]	NL[7]	NL[7]	-	-	NL[7]	-	-
CRC CARE Tech Report 10 - Part 1 _Technical Intrusive Maintenance Worker (Shallow Trench)						-	-	-	-	-	NL[3]	-	NL[3]	-	-	-	-	77[3]	NL[3]	NL[3#30,31]	-	-	NL[3]	-	-
CRC CARE Tech Report 10 - Part 1 _Technical HSL-C (Recreational/Open Space)						-	-	-	-	-	5,100[1]	-	3,800[1]	-	5,300[1]	7,400[1]	-	120[1]	18,000[1]	5,300[1#30,31]	-	-	15,000[1]	-	-
Sample Code	**Depth**	**Sampled Date**	**Matrix Type**	**Sample Type**																					
SB01_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB01_0.5	0.5	30-07-2024	Fill	Normal	< 10	< 50	< 100	< 100	< 50	< 10	< 10	< 50	< 50	< 100	< 100	< 50	< 0.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.2	< 1
SB02_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB03_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC01	0.2	30-07-2024	Fill	QA/QC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC02	0.2	30-07-2024	Fill	QA/QC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB03_1.0	1	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB04_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB04_1.0	1	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB05_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB05_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB06_0.2	0.2	30-07-2024	Fill	Normal	< 10	< 50	< 100	< 100	< 50	< 10	< 10	< 50	< 50	< 100	< 100	< 50	< 0.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.2	< 1
SB06_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB06_1.0	1	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB07_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB07_0.4	0.4	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB07_0.6	0.6	30-07-2024	Fill	Normal	< 10	< 50	170	230	400	< 10	< 10	< 50	< 50	330	160	490	< 0.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.2	< 1
SB08_0.7	0.7	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB09_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB09_0.8	0.8	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB10_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB10_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC03	0.5	30-07-2024	Fill	QA/QC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC04	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB11_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB11_1.0	1	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB12_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB12_1.0	1	30-07-2024	Fill	Normal	< 10	< 50	< 100	< 100	< 50	< 10	< 10	< 50	< 50	< 100	< 100	< 50	< 0.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.2	< 1
SB13_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB13_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB13_1.9	1.9	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 1
Soil Analytical Results
GWS Giants CoE
1 Olympic Boulevard, Olympic Park NSW
2407374

	TPH (mg/kg)					TRH (mg/kg)							BTEX (mg/kg)							
	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Sum)	C6-C10 Fraction (F1)	C6-C10 (F1 minus BTEX)	>C10-C16 Fraction (F2)	>C10-C16 Fraction (F2 minus Naphthalene)	>C16-C34 Fraction (F3)	>C34-C40 Fraction (F4)	>C10-C40 Fraction (Sum)	Benzene	Toluene	Ethylbenzene	Xylene, m- & p-	Xylene (o)	Xylene Total	Total BTEX	Naphthalene (VOC)
	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
Statistics																				
Number of Results	5	4	4	4	4	5	5	4	4	4	4	4	5	5	5	5	5	5	5	5
Number of Detects	0	0	1	1	1	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0
Minimum Concentration			< 100	< 100	< 50					< 100	< 100	< 50								
Minimum Detect	ND	ND	170	230	400	ND	ND	ND	ND	330	160	490	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	< 10	< 50	170	230	400	< 10	< 10	< 50	< 50	330	160	490	< 0.2	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.2	< 1
Maximum Detect	ND	ND	170	230	400	ND	ND	ND	ND	330	160	490	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration *	10	50	117.5	132.5	137.5	10	10	50	50	157.5	115	160	0.2	0.5	0.5	0.5	0.5	0.5	0.2	1
Median Concentration *	10	50	100	100	50	10	10	50	50	100	100	50	0.2	0.5	0.5	0.5	0.5	0.5	0.2	1
Standard Deviation *	0	0	30.31	56.29	151.55	0	0	0	0	99.59	25.98	190.53	0	0	0	0	0	0	0	0
95% UCL (Student's-t) *	10	50	147.2	187.66	286.02	10	10	50	50	255.1	140.46	346.71	0.2	0.5	0.5	0.5	0.5	0.5	0.2	1
ProUCL Percentage																				
% of Detects	0	0	25	25	25	0	0	0	0	25	25	25	0	0	0	0	0	0	0	0

Guideline Notes:

[#1]Lead: HIL is based on blood lead models (IEUBK for HILs A, B and C and adult lead model for HIL D where 50% oral bioavailability has been considered
[#2]Site-specific bioavailability may be important and should be considered where appropriate
[#3]Arsenic: HIL assumes 70% oral bioavailability
[#4]Site-specific bioavailability may be important and should be considered where appropriate (refer Schedule B7)
[#5]Elemental mercury: HIL does not address elemental mercury
[#6]A site-specific assessment should be considered if elemental mercury is present, or suspected to be present,
[#7]Aged values are applicable to arsenic contamination present in soil for at least two years
[#8]For fresh contamination refer to Schedule B5c
[#9]Insufficient data was available to calculate aged values for DDT and naphthalene, consequently the values for fresh contamination should be used
[#10]Total PAHs: Based on sum of 16 most common reported (WHO 98)
[#11]HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & napthalene (should meet relevant HSL)
[#12]Lead: HIL is based on blood lead models (IEUBK for HILs A, B and C and adult lead model for HIL D where 50% oral bioavailability has been considered
[#13]Site-specific bioavailability may be important and should be considered where appropriate
[#14]Arsenic: HIL assumes 70% oral bioavailability
[#15]Site-specific bioavailability may be important and should be considered where appropriate (refer Schedule B7)
[#16]Elemental mercury: HIL does not address elemental mercury
[#17]A site-specific assessment should be considered if elemental mercury is present, or suspected to be present,
[#18]Total PAHs: Based on sum of 16 most common reported (WHO 98)
[#19]HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & napthalene (should meet relevant HSL)
[#20]Carcinogenic PAHs: HIL is based on the 8 carcinogenic PAHs and their TEFs (potency relative to B(a)P) adopted by CCME 2008 (refer Schedule B7)
[#21]The B(a)P TEQ is calculated by multiplying the concentration of each carcinogenic PAH in the sample by its B(a)P TEF, given below, and summing these products
[#22]Where the B(a)P occurs in bitumen fragments it is relatively immobile and does not represent a significant health risk
[#23]PCBs: HIL relates to non-dioxin-like PCBs only
[#24]Where a PCB source is known, or suspected, to be present at a site, a site-specific assessment of exposure to all PCBs (including dioxin-like PCBs) should be undertaken
[#25]To obtain F2 subtract napthalene from the >C10 - C16 fraction
[#26]To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction
[#27]Aged values are applicable to arsenic contamination present in soil for at least two years
[#28]For fresh contamination refer to Schedule B5c
[#29]Insufficient data was available to calculate aged values for DDT and naphthalene, consequently the values for fresh contamination should be used
[#30]Ethylbenzene and naphthalene are classified by IARC as Group 2B (possible carcinogenic to humans), however slope factors have yet to be published by US EPA IRIS and WHO
[#31]Therefore, the HSLs have been based on a threshold endpoint and may be subject to change in the future
[#32]ESLs are of low reliability except where indicated with this note which indicates that the ESL is of moderate reliability

Table 1
Soil Analytical Results
GWS Giants CoE
1 Olympic Boulevard, Olympic Park NSW
2407374

					Metals (mg/kg)																Inorganics (mg/kg)
					Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium (hexavalent)	Chromium (III+VI)	Cobalt	Copper	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium	Zinc	Total Cyanide
					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					**5**	**10**	**1**	**50**	**1**	**0.5**	**2**	**2**	**5**	**5**	**5**	**0.1**	**2**	**5**	**5**	**5**	**1**
NEPM 2013 EILS Table 1B(5) EIL - Urban Res & Public Open Space					100[9#27,28]	-	-	-	-	-	-	-	60[9]	1,100[9]	-	-	30[9]	-	-	70[9]	-
NEPM 2013 ESLS Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2m)					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 HILS Table 1A(1) HILs Rec C Soil					300[5#14,15]	-	90[5]	20,000[5]	90[5]	300[5]	-	300[5]	17,000[5]	600[5#12,13]	19,000[5]	80[5#16,17]	1,200[5]	700[5]	-	30,000[5]	-
NEPM 2013 HSL Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Sand (0-1m)					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 HSL Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Sand (1-2m)					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CRC CARE Tech Report 10 - Part 1 _Technical Intrusive Maintenance Worker (Shallow Trench)					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CRC CARE Tech Report 10 - Part 1 _Technical HSL-C (Recreational/Open Space)					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sample Code	**Depth**	**Sampled Date**	**Matrix Type**	**Sample Type**																	
SB01_0.2	**0.2**	**30-07-2024**	**Fill**	**Normal**	< 5	-	-	-	< 1	-	7	-	20	25	-	< 0.1	5	-	-	45	-
SB01_0.5	**0.5**	**30-07-2024**	**Fill**	**Normal**	6	160	< 1	< 50	< 1	< 0.5	14	6	23	37	197	0.2	12	< 5	28	60	< 1
SB02_0.5	**0.5**	**30-07-2024**	**Fill**	**Normal**	< 5	-	-	-	< 1	-	11	-	21	44	-	0.2	9	-	-	62	-
SB03_0.2	**0.2**	**30-07-2024**	**Fill**	**Normal**	< 5	-	-	-	< 1	-	8	-	12	23	-	< 0.1	5	-	-	43	-
QC01	**0.2**	**30-07-2024**	**Fill**	**QA/QC**	< 5	-	-	-	< 1	-	7	-	13	22	-	< 0.1	7	-	-	46	-
QC02	**0.2**	**30-07-2024**	**Fill**	**QA/QC**	4	-	-	-	< 0.4	-	10	-	16	26	-	< 0.1	8.7	-	-	59	-
SB03_1.0	**1**	**30-07-2024**	**Fill**	**Normal**	5	-	-	-	< 1	-	16	-	15	33	-	0.3	7	-	-	109	-
SB04_0.2	**0.2**	**30-07-2024**	**Fill**	**Normal**	< 5	-	-	-	< 1	-	8	-	11	21	-	< 0.1	6	-	-	29	-
SB04_1.0	**1**	**30-07-2024**	**Fill**	**Normal**	< 5	-	-	-	< 1	-	11	-	12	18	-	< 0.1	3	-	-	15	-
SB05_0.2	**0.2**	**30-07-2024**	**Fill**	**Normal**	< 5	-	-	-	< 1	-	8	-	9	26	-	< 0.1	4	-	-	40	-
SB05_0.5	**0.5**	**30-07-2024**	**Fill**	**Normal**	< 5	-	-	-	< 1	-	9	-	8	16	-	< 0.1	< 2	-	-	7	-
SB06_0.2	**0.2**	**30-07-2024**	**Fill**	**Normal**	< 5	40	< 1	< 50	< 1	< 0.5	6	2	9	25	82	< 0.1	5	< 5	13	28	< 1
SB06_0.5	**0.5**	**30-07-2024**	**Fill**	**Normal**	< 5	-	-	-	< 1	-	13	-	12	36	-	< 0.1	8	-	-	42	-
SB06_1.0	**1**	**30-07-2024**	**Fill**	**Normal**	< 5	-	-	-	< 1	-	17	-	10	15	-	< 0.1	3	-	-	11	-
SB07_0.2	**0.2**	**30-07-2024**	**Fill**	**Normal**	< 5	-	-	-	< 1	-	7	-	12	17	-	< 0.1	7	-	-	34	-
SB07_0.4	**0.4**	**30-07-2024**	**Fill**	**Normal**	< 5	-	-	-	< 1	-	9	-	19	34	-	< 0.1	13	-	-	53	-
SB07_0.6	**0.6**	**30-07-2024**	**Fill**	**Normal**	< 5	80	< 1	< 50	< 1	< 0.5	11	6	33	31	395	< 0.1	21	< 5	25	73	< 1
SB08_0.7	**0.7**	**30-07-2024**	**Fill**	**Normal**	< 5	-	-	-	< 1	-	10	-	13	31	-	< 0.1	14	-	-	41	-
SB09_0.5	**0.5**	**30-07-2024**	**Fill**	**Normal**	< 5	-	-	-	< 1	-	9	-	14	57	-	< 0.1	5	-	-	56	-
SB09_0.8	**0.8**	**30-07-2024**	**Fill**	**Normal**	< 5	-	-	-	< 1	-	13	-	29	34	-	< 0.1	9	-	-	60	-
SB10_0.2	**0.2**	**30-07-2024**	**Fill**	**Normal**	< 5	-	-	-	< 1	-	9	-	16	19	-	< 0.1	18	-	-	37	-
SB10_0.5	**0.5**	**30-07-2024**	**Fill**	**Normal**	5	-	-	-	< 1	-	11	-	22	33	-	0.2	13	-	-	51	-
QC03	**0.5**	**30-07-2024**	**Fill**	**QA/QC**	< 5	-	-	-	< 1	-	13	-	30	35	-	0.2	12	-	-	60	-
QC04	**0.5**	**30-07-2024**	**Fill**	**Normal**	9.3	-	-	-	< 0.4	-	15	-	76	67	-	< 0.1	15	-	-	110	-
SB11_0.2	**0.2**	**30-07-2024**	**Fill**	**Normal**	< 5	-	-	-	< 1	-	8	-	18	25	-	< 0.1	14	-	-	39	-
SB11_1.0	**1**	**30-07-2024**	**Fill**	**Normal**	< 5	-	-	-	< 1	-	12	-	22	49	-	0.3	8	-	-	67	-
SB12_0.5	**0.5**	**30-07-2024**	**Fill**	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB12_1.0	**1**	**30-07-2024**	**Fill**	**Normal**	5	130	< 1	< 50	< 1	< 0.5	14	6	21	45	265	0.4	10	< 5	26	57	< 1
SB13_0.2	**0.2**	**30-07-2024**	**Fill**	**Normal**	< 5	-	-	-	< 1	-	3	-	< 5	< 5	-	< 0.1	< 2	-	-	< 5	-
SB13_0.5	**0.5**	**30-07-2024**	**Fill**	**Normal**	6	-	-	-	< 1	-	24	-	11	14	-	< 0.1	4	-	-	13	-
SB13_1.9	**1.9**	**30-07-2024**	**Fill**	**Normal**	5	-	-	-	< 1	-	12	-	11	16	-	< 0.1	3	-	-	14	-

Table 1
Soil Analytical Results
GWS Giants CoE
1 Olympic Boulevard, Olympic Park NSW
2407374

	Metals (mg/kg)																Inorganics (mg/kg)
	Arsenic	Barium	Beryllium	Boron	Cadmium	Chromium (hexavalent)	Chromium (III+VI)	Cobalt	Copper	Lead	Manganese	Mercury	Nickel	Selenium	Vanadium	Zinc	Total Cyanide
	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
Statistics																	
Number of Results	30	4	4	4	30	4	30	4	30	30	4	30	30	4	4	30	4
Number of Detects	8	0	4	0	0	0	30	4	29	29	4	7	28	0	4	29	0
Minimum Concentration	4		40				3	2	< 5	< 5	82	< 0.1	< 2		13	< 5	
Minimum Detect	4	ND	40	ND	ND	ND	3	2	8	14	82	0.2	3	ND	13	7	ND
Maximum Concentration	9.3	< 50	160	< 1	< 1	< 0.5	24	6	76	67	395	0.4	21	< 5	28	110	< 1
Maximum Detect	9.3	ND	160	ND	ND	ND	24	6	76	67	395	0.4	21	ND	28	110	ND
Average Concentration *	5.18	50	102.5	1	0.96	0.5	10.83	5	18.1	29.3	234.75	0.14	8.42	5	23	45.53	1
Median Concentration *	5	50	105	1	1	0.5	10.5	6	14.5	26	231	0.1	7.5	5	25.5	44	1
Standard Deviation *	0.83	0	46.03	0	0.15	0	3.95	1.73	12.65	13.24	113.31	0.08	4.81	0	5.87	25.17	0
95% UCL (Student's-t) *	5.47	50	147.6	1	1.01	0.5	12.24	6.69	22.62	34.03	345.78	0.16	10.14	5	28.75	54.54	1
ProUCL Percentage																	
% of Detects	27	0	100	0	0	0	100	100	97	97	100	23	93	0	100	97	0

Guideline Notes:

[#1]Lead: HIL is based on blood lead models (IEUBK for HILs A, B and C and adult lead model for HIL D where 50% oral b
[#2]Site-specific bioavailability may be important and should be considered where appropriate
[#3]Arsenic: HIL assumes 70% oral bioavailability
[#4]Site-specific bioavailability may be important and should be considered where appropriate (refer Schedule B7)
[#5]Elemental mercury: HIL does not address elemental mercury
[#6]A site-specific assessment should be considered if elemental mercury is present, or suspected to be present,
[#7]Aged values are applicable to arsenic contamination present in soil for at least two years
[#8]For fresh contamination refer to Schedule B5c
[#9]Insufficient data was available to calculate aged values for DDT and naphthalene, consequently the values for fresh co
[#10]Total PAHs: Based on sum of 16 most common reported (WHO 98)
[#11]HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & napthalene (should me
[#12]Lead: HIL is based on blood lead models (IEUBK for HILs A, B and C and adult lead model for HIL D where 50% oral
[#13]Site-specific bioavailability may be important and should be considered where appropriate
[#14]Arsenic: HIL assumes 70% oral bioavailability
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[#16]Elemental mercury: HIL does not address elemental mercury
[#17]A site-specific assessment should be considered if elemental mercury is present, or suspected to be present,
[#18]Total PAHs: Based on sum of 16 most common reported (WHO 98)
[#19]HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & napthalene (should me
[#20]Carcinogenic PAHs: HIL is based on the 8 carcinogenic PAHs and their TEFs (potency relative to B(a)P) adopted by C
[#21]The B(a)P TEQ is calculated by multiplying the concentration of each carcinogenic PAH in the sample by its B(a)P TE
[#22]Where the B(a)P occurs in bitumen fragments it is relatively immobile and does not represent a significant health risk
[#23]PCBs: HIL relates to non-dioxin-like PCBs only
[#24]Where a PCB source is known, or suspected, to be present at a site, a site-specific assessment of exposure to all PC
[#25]To obtain F2 subtract napthalene from the >C10 - C16 fraction
[#26]To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction
[#27]Aged values are applicable to arsenic contamination present in soil for at least two years
[#28]For fresh contamination refer to Schedule B5c
[#29]Insufficient data was available to calculate aged values for DDT and naphthalene, consequently the values for fresh co
[#30]Ethylbenzene and naphthalene are classified by IARC as Group 2B (possible carcinogenic to humans), however slope
[#31]Therefore, the HSLs have been based on a threshold endpoint and may be subject to change in the future
[#32]ESLs are of low reliability except where indicated with this note which indicates that the ESL is of moderate reliability

Table 1
Soil Analytical Results
GWS Giants CoE
1 Olympic Boulevard, Olympic Park NSW
2407374

					Phenols (mg/kg)											
					3&4-Methylphenol (m&p-cresol)	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,6-Dichlorophenol	2-Chlorophenol	2-Methylphenol	2-Nitrophenol	4-chloro-3-methylphenol	Pentachlorophenol	Phenol
					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	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.5
NEPM 2013 EILS Table 1B(5) EIL - Urban Res & Public Open Space					-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 ESLS Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2m)					-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 HILS Table 1A(1) HILs Rec C Soil					-	-	-	-	-	-	-	-	-	-	120[5]	40,000[5]
NEPM 2013 HSL Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Sand (0-1m)					-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 HSL Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Sand (1-2m)					-	-	-	-	-	-	-	-	-	-	-	-
CRC CARE Tech Report 10 - Part 1 _Technical Intrusive Maintenance Worker (Shallow Trench)					-	-	-	-	-	-	-	-	-	-	-	-
CRC CARE Tech Report 10 - Part 1 _Technical HSL-C (Recreational/Open Space)					-	-	-	-	-	-	-	-	-	-	-	-
Sample Code	Depth	Sampled Date	Matrix Type	Sample Type												
SB01_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-
SB01_0.5	0.5	30-07-2024	Fill	Normal	< 1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2	< 0.5
SB02_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-
SB03_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-
QC01	0.2	30-07-2024	Fill	QA/QC	-	-	-	-	-	-	-	-	-	-	-	-
QC02	0.2	30-07-2024	Fill	QA/QC	-	-	-	-	-	-	-	-	-	-	-	-
SB03_1.0	1	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-
SB04_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-
SB04_1.0	1	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-
SB05_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-
SB05_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-
SB06_0.2	0.2	30-07-2024	Fill	Normal	< 1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2	< 0.5
SB06_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-
SB06_1.0	1	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-
SB07_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-
SB07_0.4	0.4	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-
SB07_0.6	0.6	30-07-2024	Fill	Normal	< 1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2	< 0.5
SB08_0.7	0.7	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-
SB09_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-
SB09_0.8	0.8	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-
SB10_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-
SB10_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-
QC03	0.5	30-07-2024	Fill	QA/QC	-	-	-	-	-	-	-	-	-	-	-	-
QC04	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-
SB11_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-
SB11_1.0	1	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-
SB12_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-
SB12_1.0	1	30-07-2024	Fill	Normal	< 1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2	< 0.5
SB13_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-
SB13_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-
SB13_1.9	1.9	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-

Table 1
Soil Analytical Results
GWS Giants CoE
1 Olympic Boulevard, Olympic Park NSW
2407374

	Phenols (mg/kg)											
	3&4-Methylphenol (m&p-cresol)	2,4,5-Trichlorophenol	2,4,6-Trichlorophenol	2,4-Dichlorophenol	2,4-Dimethylphenol	2,6-Dichlorophenol	2-Chlorophenol	2-Methylphenol	2-Nitrophenol	4-chloro-3-methylphenol	Pentachlorophenol	Phenol
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Statistics												
Number of Results	4	4	4	4	4	4	4	4	4	4	4	4
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration												
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	< 1	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 2	< 0.5
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration *	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.5
Median Concentration *	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.5
Standard Deviation *	0	0	0	0	0	0	0	0	0	0	0	0
95% UCL (Student's-t) *	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	2	0.5
ProUCL Percentage												
% of Detects	0	0	0	0	0	0	0	0	0	0	0	0

Guideline Notes:

#1 Lead: HIL is based on blood lead models (IEUBK for HILs A, B and C and adult lead model for HIL D where 50% oral b
#2 Site-specific bioavailability may be important and should be considered where appropriate
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#23 PCBs: HIL relates to non-dioxin-like PCBs only
#24 Where a PCB source is known, or suspected, to be present at a site, a site-specific assessment of exposure to all PCI
#25 To obtain F2 subtract napthalene from the >C10 - C16 fraction
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#31 Therefore, the HSLs have been based on a threshold endpoint and may be subject to change in the future
#32 ESLs are of low reliability except where indicated with this note which indicates that the ESL is of moderate reliability

Table 1
Soil Analytical Results
GWS Giants CoE
1 Olympic Boulevard, Olympic Park NSW
2407374

					Organochlorine Pesticides (mg/kg)																							
					4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	Aldrin + Dieldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor
					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	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	0.05	0.05	0.05	0.2
NEPM 2013 EILS Table 1B(5) EIL - Urban Res & Public Open Space					-	-	-	-	-	-	-	-	-	-	180[DW29]	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 ESLS Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2m)					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 HILS Table 1A(1) HILs Rec C Soil					-	-	-	10[5]	10[5]	-	-	-	-	-	-	400[5]	-	340[5]	-	-	-	20[5]	-	-	-	10[5]	-	400[5]
NEPM 2013 HSL Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Sand (0-1m)					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 HSL Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Sand (1-2m)					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CRC CARE Tech Report 10 - Part 1 _Technical Intrusive Maintenance Worker (Shallow Trench)					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CRC CARE Tech Report 10 - Part 1 _Technical HSL-C (Recreational/Open Space)					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sample Code	**Depth**	**Sampled Date**	**Matrix Type**	**Sample Type**																								
SB01_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB01_0.5	0.5	30-07-2024	Fill	Normal	< 0.05	< 0.05	< 0.05	< 0.1	< 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	< 0.05	< 0.05	< 0.05	< 0.2
SB02_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB03_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC01	0.2	30-07-2024	Fill	QA/QC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC02	0.2	30-07-2024	Fill	QA/QC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB03_1.0	1	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB04_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB04_1.0	1	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB05_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB05_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB06_0.2	0.2	30-07-2024	Fill	Normal	< 0.05	< 0.05	< 0.05	< 0.1	< 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	< 0.05	< 0.05	< 0.05	< 0.2
SB06_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB06_1.0	1	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB07_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB07_0.4	0.4	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB07_0.6	0.6	30-07-2024	Fill	Normal	< 0.05	< 0.05	< 0.05	< 0.1	< 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	< 0.05	< 0.05	< 0.05	< 0.2
SB08_0.7	0.7	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB09_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB09_0.8	0.8	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB10_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB10_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC03	0.5	30-07-2024	Fill	QA/QC	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC04	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB11_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB11_1.0	1	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB12_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB12_1.0	1	30-07-2024	Fill	Normal	< 0.05	< 0.05	< 0.05	< 0.1	< 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	< 0.05	< 0.05	< 0.05	< 0.2
SB13_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB13_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB13_1.9	1.9	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 1
Soil Analytical Results
GWS Giants CoE
1 Olympic Boulevard, Olympic Park NSW
2407374

	Organochlorine Pesticides (mg/kg)																							
	4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	Aldrin + Dieldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor
	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
Statistics																								
Number of Results	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration																								
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	< 0.05	< 0.05	< 0.05	< 0.1	< 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	< 0.05	< 0.05	< 0.05	< 0.2
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration *	0.05	0.05	0.05	0.1	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	0.05	0.05	0.05	0.2
Median Concentration *	0.05	0.05	0.05	0.1	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	0.05	0.05	0.05	0.2
Standard Deviation *	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95% UCL (Student's-t) *	0.05	0.05	0.05	0.1	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	0.05	0.05	0.05	0.2
ProUCL Percentage																								
% of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Guideline Notes:

[#1]Lead: HIL is based on blood lead models (IEUBK for HILs A, B and C and adult lead model for HIL D where 50% oral b
[#2]Site-specific bioavailability may be important and should be considered where appropriate
[#3]Arsenic: HIL assumes 70% oral bioavailability
[#4]Site-specific bioavailability may be important and should be considered where appropriate (refer Schedule B7)
[#5]Elemental mercury: HIL does not address elemental mercury
[#6]A site-specific assessment should be considered if elemental mercury is present, or suspected to be present,
[#7]Aged values are applicable to arsenic contamination present in soil for at least two years
[#8]For fresh contamination refer to Schedule B5c
[#9]Insufficient data was available to calculate aged values for DDT and naphthalene, consequently the values for fresh co
[#10]Total PAHs: Based on sum of 16 most common reported (WHO 98)
[#11]HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & napthalene (should me
[#12]Lead: HIL is based on blood lead models (IEUBK for HILs A, B and C and adult lead model for HIL D where 50% oral
[#13]Site-specific bioavailability may be important and should be considered where appropriate
[#14]Arsenic: HIL assumes 70% oral bioavailability
[#15]Site-specific bioavailability may be important and should be considered where appropriate (refer Schedule B7)
[#16]Elemental mercury: HIL does not address elemental mercury
[#17]A site-specific assessment should be considered if elemental mercury is present, or suspected to be present,
[#18]Total PAHs: Based on sum of 16 most common reported (WHO 98)
[#19]HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & napthalene (should me
[#20]Carcinogenic PAHs: HIL is based on the 8 carcinogenic PAHs and their TEFs (potency relative to B(a)P) adopted by C
[#21]The B(a)P TEQ is calculated by multiplying the concentration of each carcinogenic PAH in the sample by its B(a)P TE
[#22]Where the B(a)P occurs in bitumen fragments it is relatively immobile and does not represent a significant health risk
[#23]PCBs: HIL relates to non-dioxin-like PCBs only
[#24]Where a PCB source is known, or suspected, to be present at a site, a site-specific assessment of exposure to all PCI
[#25]To obtain F2 subtract napthalene from the >C10 - C16 fraction
[#26]To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction
[#27]Aged values are applicable to arsenic contamination present in soil for at least two years
[#28]For fresh contamination refer to Schedule B5c
[#29]Insufficient data was available to calculate aged values for DDT and naphthalene, consequently the values for fresh co
[#30]Ethylbenzene and naphthalene are classified by IARC as Group 2B (possible carcinogenic to humans), however slope
[#31]Therefore, the HSLs have been based on a threshold endpoint and may be subject to change in the future
[#32]ESLs are of low reliability except where indicated with this note which indicates that the ESL is of moderate reliability

Table 1
Soil Analytical Results
GWS Giants CoE
1 Olympic Boulevard, Olympic Park NSW
2407374

					Organophosphorus Pesticides (mg/kg)															
					Azinophos methyl	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenthion	Malathion	Methyl parathion	Monocrotophos	Prothiofos
					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	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.2	0.05
NEPM 2013 EILS Table 1B(5) EIL - Urban Res & Public Open Space					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 ESLS Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2m)					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 HILS Table 1A(1) HILs Rec C Soil					-	-	-	-	250[5]	-	-	-	-	-	-	-	-	-	-
NEPM 2013 HSL Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Sand (0-1m)					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 HSL Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Sand (1-2m)					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CRC CARE Tech Report 10 - Part 1 _Technical Intrusive Maintenance Worker (Shallow Trench)					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CRC CARE Tech Report 10 - Part 1 _Technical HSL-C (Recreational/Open Space)					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sample Code	**Depth**	**Sampled Date**	**Matrix Type**	**Sample Type**															
SB01_0.2	**0.2**	**30-07-2024**	**Fill**	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB01_0.5	**0.5**	**30-07-2024**	**Fill**	**Normal**	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.2	< 0.2	< 0.05
SB02_0.5	**0.5**	**30-07-2024**	**Fill**	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB03_0.2	**0.2**	**30-07-2024**	**Fill**	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC01	**0.2**	**30-07-2024**	**Fill**	**QA/QC**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC02	**0.2**	**30-07-2024**	**Fill**	**QA/QC**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB03_1.0	**1**	**30-07-2024**	**Fill**	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB04_0.2	**0.2**	**30-07-2024**	**Fill**	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB04_1.0	**1**	**30-07-2024**	**Fill**	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB05_0.2	**0.2**	**30-07-2024**	**Fill**	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB05_0.5	**0.5**	**30-07-2024**	**Fill**	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB06_0.2	**0.2**	**30-07-2024**	**Fill**	**Normal**	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.2	< 0.2	< 0.05
SB06_0.5	**0.5**	**30-07-2024**	**Fill**	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB06_1.0	**1**	**30-07-2024**	**Fill**	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB07_0.2	**0.2**	**30-07-2024**	**Fill**	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB07_0.4	**0.4**	**30-07-2024**	**Fill**	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB07_0.6	**0.6**	**30-07-2024**	**Fill**	**Normal**	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.2	< 0.2	< 0.05
SB08_0.7	**0.7**	**30-07-2024**	**Fill**	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB09_0.5	**0.5**	**30-07-2024**	**Fill**	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB09_0.8	**0.8**	**30-07-2024**	**Fill**	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB10_0.2	**0.2**	**30-07-2024**	**Fill**	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB10_0.5	**0.5**	**30-07-2024**	**Fill**	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC03	**0.5**	**30-07-2024**	**Fill**	**QA/QC**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
QC04	**0.5**	**30-07-2024**	**Fill**	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB11_0.2	**0.2**	**30-07-2024**	**Fill**	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB11_1.0	**1**	**30-07-2024**	**Fill**	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB12_0.5	**0.5**	**30-07-2024**	**Fill**	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB12_1.0	**1**	**30-07-2024**	**Fill**	**Normal**	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.2	< 0.2	< 0.05
SB13_0.2	**0.2**	**30-07-2024**	**Fill**	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB13_0.5	**0.5**	**30-07-2024**	**Fill**	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SB13_1.9	**1.9**	**30-07-2024**	**Fill**	**Normal**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 1
Soil Analytical Results
GWS Giants CoE
1 Olympic Boulevard, Olympic Park NSW
2407374

	Organophosphorus Pesticides (mg/kg)														
	Azinophos methyl	Bromophos-ethyl	Carbophenothion	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dichlorvos	Dimethoate	Ethion	Fenthion	Malathion	Methyl parathion	Monocrotophos	Prothiofos
	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
Statistics															
Number of Results	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration															
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration															
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration *															
Median Concentration *															
Standard Deviation *															
95% UCL (Student's-t) *															
ProUCL Percentage															
% of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Guideline Notes:

#1 Lead: HIL is based on blood lead models (IEUBK for HILs A, B and C and adult lead model for HIL D where 50% oral b
#2 Site-specific bioavailability may be important and should be considered where appropriate
#3 Arsenic: HIL assumes 70% oral bioavailability
#4 Site-specific bioavailability may be important and should be considered where appropriate (refer Schedule B7)
#5 Elemental mercury: HIL does not address elemental mercury
#6 A site-specific assessment should be considered if elemental mercury is present, or suspected to be present,
#7 Aged values are applicable to arsenic contamination present in soil for at least two years
#8 For fresh contamination refer to Schedule B5c
#9 Insufficient data was available to calculate aged values for DDT and naphthalene, consequently the values for fresh co
#10 Total PAHs: Based on sum of 16 most common reported (WHO 98)
#11 HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & napthalene (should me
#12 Lead: HIL is based on blood lead models (IEUBK for HILs A, B and C and adult lead model for HIL D where 50% oral
#13 Site-specific bioavailability may be important and should be considered where appropriate
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#15 Site-specific bioavailability may be important and should be considered where appropriate (refer Schedule B7)
#16 Elemental mercury: HIL does not address elemental mercury
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#18 Total PAHs: Based on sum of 16 most common reported (WHO 98)
#19 HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & napthalene (should me
#20 Carcinogenic PAHs: HIL is based on the 8 carcinogenic PAHs and their TEFs (potency relative to B(a)P) adopted by C
#21 The B(a)P TEQ is calculated by multiplying the concentration of each carcinogenic PAH in the sample by its B(a)P TE
#22 Where the B(a)P occurs in bitumen fragments it is relatively immobile and does not represent a significant health risk
#23 PCBs: HIL relates to non-dioxin-like PCBs only
#24 Where a PCB source is known, or suspected, to be present at a site, a site-specific assessment of exposure to all PCI
#25 To obtain F2 subtract napthalene from the >C10 - C16 fraction
#26 To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction
#27 Aged values are applicable to arsenic contamination present in soil for at least two years
#28 For fresh contamination refer to Schedule B5c
#29 Insufficient data was available to calculate aged values for DDT and naphthalene, consequently the values for fresh co
#30 Ethylbenzene and naphthalene are classified by IARC as Group 2B (possible carcinogenic to humans), however slope
#31 Therefore, the HSLs have been based on a threshold endpoint and may be subject to change in the future
#32 ESLs are of low reliability except where indicated with this note which indicates that the ESL is of moderate reliability

Table 1
Soil Analytical Results
GWS Giants CoE
1 Olympic Boulevard, Olympic Park NSW
2407374

					Halogenated Benzenes (mg/kg)	Herbicides (mg/kg)	PCBs (mg/kg)	Pesticides (mg/kg)					
					Hexachlorobenzene	Atrazine	PCBs (Sum of total)	Bifenthrin	Demeton-S-methyl	Fenamiphos	Mirex	Parathion	Pirimphos-ethyl
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					0.05	0.05	0.1	0.05	0.05	0.05	0.2	0.2	0.05
NEPM 2013 EILS Table 1B(5) EIL - Urban Res & Public Open Space					-	-	-	-	-	-	-	-	-
NEPM 2013 ESLS Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2m)					-	-	-	-	-	-	-	-	-
NEPM 2013 HILS Table 1A(1) HILs Rec C Soil					10[5]	400[5]	1[5#23,24]	730[5]	-	-	20[5]	-	-
NEPM 2013 HSL Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Sand (0-1m)					-	-	-	-	-	-	-	-	-
NEPM 2013 HSL Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Sand (1-2m)					-	-	-	-	-	-	-	-	-
CRC CARE Tech Report 10 - Part 1 _Technical Intrusive Maintenance Worker (Shallow Trench)					-	-	-	-	-	-	-	-	-
CRC CARE Tech Report 10 - Part 1 _Technical HSL-C (Recreational/Open Space)					-	-	-	-	-	-	-	-	-
Sample Code	**Depth**	**Sampled Date**	**Matrix Type**	**Sample Type**									
SB01_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-
SB01_0.5	0.5	30-07-2024	Fill	Normal	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.2	< 0.2	< 0.05
SB02_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-
SB03_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-
QC01	0.2	30-07-2024	Fill	QA/QC	-	-	-	-	-	-	-	-	-
QC02	0.2	30-07-2024	Fill	QA/QC	-	-	-	-	-	-	-	-	-
SB03_1.0	1	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-
SB04_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-
SB04_1.0	1	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-
SB05_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-
SB05_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-
SB06_0.2	0.2	30-07-2024	Fill	Normal	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.2	< 0.2	< 0.05
SB06_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-
SB06_1.0	1	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-
SB07_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-
SB07_0.4	0.4	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-
SB07_0.6	0.6	30-07-2024	Fill	Normal	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.2	< 0.2	< 0.05
SB08_0.7	0.7	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-
SB09_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-
SB09_0.8	0.8	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-
SB10_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-
SB10_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-
QC03	0.5	30-07-2024	Fill	QA/QC	-	-	-	-	-	-	-	-	-
QC04	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-
SB11_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-
SB11_1.0	1	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-
SB12_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-
SB12_1.0	1	30-07-2024	Fill	Normal	< 0.05	< 0.05	< 0.1	< 0.05	< 0.05	< 0.05	< 0.2	< 0.2	< 0.05
SB13_0.2	0.2	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-
SB13_0.5	0.5	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-
SB13_1.9	1.9	30-07-2024	Fill	Normal	-	-	-	-	-	-	-	-	-

Table 1
Soil Analytical Results
GWS Giants CoE
1 Olympic Boulevard, Olympic Park NSW
2407374

	Halogenated Benzenes (mg/kg)	Herbicides (mg/kg)	PCBs (mg/kg)	Pesticides (mg/kg)					
	Hexachlorobenzene	Atrazine	PCBs (Sum of total)	Bifenthrin	Demeton-S-methyl	Fenamiphos	Mirex	Parathion	Pirimphos-ethyl
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Statistics									
Number of Results	4	4	4	4	4	4	4	4	4
Number of Detects	0	0	0	0	0	0	0	0	0
Minimum Concentration									
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration *	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Median Concentration *	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Standard Deviation *	0	0	0	0	0	0	0	0	0
95% UCL (Student's-t) *	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
ProUCL Percentage									
% of Detects	0	0	0	0	0	0	0	0	0

Guideline Notes:

[#1]Lead: HIL is based on blood lead models (IEUBK for HILs A, B and C and adult lead model for HIL D where 50% oral b
[#2]Site-specific bioavailability may be important and should be considered where appropriate
[#3]Arsenic: HIL assumes 70% oral bioavailability
[#4]Site-specific bioavailability may be important and should be considered where appropriate (refer Schedule B7)
[#5]Elemental mercury: HIL does not address elemental mercury
[#6]A site-specific assessment should be considered if elemental mercury is present, or suspected to be present,
[#7]Aged values are applicable to arsenic contamination present in soil for at least two years
[#8]For fresh contamination refer to Schedule B5c
[#9]Insufficient data was available to calculate aged values for DDT and naphthalene, consequently the values for fresh co
[#10]Total PAHs: Based on sum of 16 most common reported (WHO 98)
[#11]HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & napthalene (should me
[#12]Lead: HIL is based on blood lead models (IEUBK for HILs A, B and C and adult lead model for HIL D where 50% oral l
[#13]Site-specific bioavailability may be important and should be considered where appropriate
[#14]Arsenic: HIL assumes 70% oral bioavailability
[#15]Site-specific bioavailability may be important and should be considered where appropriate (refer Schedule B7)
[#16]Elemental mercury: HIL does not address elemental mercury
[#17]A site-specific assessment should be considered if elemental mercury is present, or suspected to be present,
[#18]Total PAHs: Based on sum of 16 most common reported (WHO 98)
[#19]HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & napthalene (should me
[#20]Carcinogenic PAHs: HIL is based on the 8 carcinogenic PAHs and their TEFs (potency relative to B(a)P) adopted by C
[#21]The B(a)P TEQ is calculated by multiplying the concentration of each carcinogenic PAH in the sample by its B(a)P TEI
[#22]Where the B(a)P occurs in bitumen fragments it is relatively immobile and does not represent a significant health risk
[#23]PCBs: HIL relates to non-dioxin-like PCBs only
[#24]Where a PCB source is known, or suspected, to be present at a site, a site-specific assessment of exposure to all PCI
[#25]To obtain F2 subtract napthalene from the >C10 - C16 fraction
[#26]To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction
[#27]Aged values are applicable to arsenic contamination present in soil for at least two years
[#28]For fresh contamination refer to Schedule B5c
[#29]Insufficient data was available to calculate aged values for DDT and naphthalene, consequently the values for fresh cc
[#30]Ethylbenzene and naphthalene are classified by IARC as Group 2B (possible carcinogenic to humans), however slope
[#31]Therefore, the HSLs have been based on a threshold endpoint and may be subject to change in the future
[#32]ESLs are of low reliability except where indicated with this note which indicates that the ESL is of moderate reliability

Table 1
Soil Analytical Results
GWS Giants CoE
1 Olympic Boulevard, Olympic Park NSW
2407374

	PAH (mg/kg)																			
	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a) pyrene	Benzo(b+j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Zero)	PAHs (Sum of total)
	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
NEPM 2013 EILS Table 1B(5) EIL - Urban Res & Public Open Space	-	-	-	-	-	-	-	-	-	-	-	-	-	170[9#29]	-	-	-	-	-	-
NEPM 2013 ESLS Table 1B(6) ESLs for Urban Res, Coarse Soil (0-2m)	-	-	-	-	0.7[11]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEPM 2013 HILS Table 1A(1) HILs Rec C Soil	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3[5#20,21,22]	3[5#20,21,22]	3[5#20,21,22]	300[5#18,19]
NEPM 2013 HSL Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Sand (0-1m)	-	-	-	-	-	-	-	-	-	-	-	-	-	NL[7]	-	-	-	-	-	-
NEPM 2013 HSL Table 1A(3) Rec C Soil HSL for Vapour Intrusion, Sand (1-2m)	-	-	-	-	-	-	-	-	-	-	-	-	-	NL[7]	-	-	-	-	-	-
CRC CARE Tech Report 10 - Part 1 _Technical Intrusive Maintenance Worker (Shallow Trench)	-	-	-	-	-	-	-	-	-	-	-	-	-	NL[3#30,31]	-	-	-	-	-	-
CRC CARE Tech Report 10 - Part 1 _Technical HSL-C (Recreational/Open Space)	-	-	-	-	-	-	-	-	-	-	-	-	-	1,900[1#30,31]	-	-	-	-	-	-
SB01_0.2	0.2	30-07-2024	Fill	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	< 0.5	< 0.5	< 0.5	< 0.5	0.6	1.2	< 0.5	< 0.5
SB01_0.5	0.5	30-07-2024	Fill	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	< 0.5	< 0.5	< 0.5	< 0.5	0.6	1.2	< 0.5	< 0.5
SB02_0.5	0.5	30-07-2024	Fill	Normal	< 0.5	< 0.5	< 0.5	0.6	0.5	0.6	< 0.5	< 0.5	0.5	< 0.5	1.4	< 0.5	< 0.5	< 0.5	1.1	1.3	0.9	1.2	0.6	6
SB03_0.2	0.2	30-07-2024	Fill	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	< 0.5	< 0.5	< 0.5	< 0.5	0.6	1.2	< 0.5	< 0.5
QC01	0.2	30-07-2024	Fill	QA/QC	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.6	1.2	< 0.5	< 0.5
QC02	0.2	30-07-2024	Fill	QA/QC	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.6	1.2	< 0.5	< 0.5
SB03_1.0	1	30-07-2024	Fill	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	< 0.5	< 0.5	< 0.5	< 0.5	0.6	1.2	< 0.5	< 0.5
SB04_0.2	0.2	30-07-2024	Fill	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	< 0.5	< 0.5	< 0.5	< 0.5	0.6	1.2	< 0.5	< 0.5
SB04_1.0	1	30-07-2024	Fill	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	< 0.5	< 0.5	< 0.5	< 0.5	0.6	1.2	< 0.5	< 0.5
SB05_0.2	0.2	30-07-2024	Fill	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	< 0.5	< 0.5	< 0.5	< 0.5	0.6	1.2	< 0.5	< 0.5
SB05_0.5	0.5	30-07-2024	Fill	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	< 0.5	< 0.5	< 0.5	< 0.5	0.6	1.2	< 0.5	< 0.5
SB06_0.2	0.2	30-07-2024	Fill	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	< 0.5	< 0.5	< 0.5	< 0.5	0.6	1.2	< 0.5	< 0.5
SB06_0.5	0.5	30-07-2024	Fill	Normal	< 0.5	< 0.5	< 0.5	0.6	0.6	0.6	< 0.5	< 0.5	0.5	< 0.5	1	< 0.5	< 0.5	< 0.5	< 0.5	1.2	1	1.3	0.7	4.5
SB06_1.0	1	30-07-2024	Fill	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	< 0.5	< 0.5	< 0.5	< 0.5	0.6	1.2	< 0.5	< 0.5
SB07_0.2	0.2	30-07-2024	Fill	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	< 0.5	< 0.5	< 0.5	< 0.5	0.6	1.2	< 0.5	< 0.5
SB07_0.4	0.4	30-07-2024	Fill	Normal	< 0.5	< 0.5	0.6	0.9	0.7	0.8	< 0.5	< 0.5	0.9	< 0.5	2	< 0.5	< 0.5	< 0.5	2.2	2.4	1.2	1.5	0.9	10.5
SB07_0.6	0.6	30-07-2024	Fill	Normal	< 0.5	< 0.5	< 0.5	0.5	0.5	0.6	< 0.5	< 0.5	0.5	< 0.5	0.9	< 0.5	< 0.5	< 0.5	< 0.5	1.1	0.9	1.2	0.6	4.1
SB08_0.7	0.7	30-07-2024	Fill	Normal	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.9	< 0.5	< 0.5	< 0.5	0.6	0.9	0.6	1.2	< 0.5	2.4
SB09_0.5	0.5	30-07-2024	Fill	Normal	4.6	< 0.5	10.7	15.7	12.3	13	6.3	4.8	15.5	1.4	37.7	2.9	5.1	< 0.5	40.4	40.1	17.8	17.8	17.8	210
SB09_0.8	0.8	30-07-2024	Fill	Normal	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.9	< 0.5	< 0.5	< 0.5	0.6	1	0.6	1.2	< 0.5	2.5
SB10_0.2	0.2	30-07-2024	Fill	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	< 0.5	< 0.5	< 0.5	< 0.5	0.6	1.2	< 0.5	< 0.5
SB10_0.5	0.5	30-07-2024	Fill	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	< 0.5	< 0.5	< 0.5	< 0.5	0.6	1.2	< 0.5	< 0.5
QC03	0.5	30-07-2024	Fill	QA/QC	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.6	1.2	< 0.5	< 0.5
QC04	0.5	30-07-2024	Fill	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	< 0.5	< 0.5	< 0.5	< 0.5	0.6	1.2	< 0.5	< 0.5
SB11_0.2	0.2	30-07-2024	Fill	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	< 0.5	< 0.5	< 0.5	< 0.5	0.6	1.2	< 0.5	< 0.5
SB11_1.0	1	30-07-2024	Fill	Normal	< 0.5	< 0.5	< 0.5	< 0.5	0.6	0.7	< 0.5	< 0.5	< 0.5	< 0.5	0.9	< 0.5	< 0.5	< 0.5	< 0.5	0.9	1	1.3	0.7	3.1
SB12_0.5	0.5	30-07-2024	Fill	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	< 0.5	< 0.5	< 0.5	< 0.5	0.6	1.2	< 0.5	< 0.5
SB12_1.0	1	30-07-2024	Fill	Normal	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	0.7	< 0.5	< 0.5	< 0.5	< 0.5	0.7	0.6	1.2	< 0.5	1.4
SB13_0.2	0.2	30-07-2024	Fill	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	< 0.5	< 0.5	< 0.5	< 0.5	0.6	1.2	< 0.5	< 0.5
SB13_0.5	0.5	30-07-2024	Fill	Normal	< 0.5	< 0.5	< 0.5	0.9	1.8	2.2	1.1	0.6	1	< 0.5	< 0.5	< 0.5	0.7	< 0.5	< 0.5	1.6	2.5	2.8	2.3	9.9
SB13_1.9	1.9	30-07-2024	Fill	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	< 0.5	< 0.5	< 0.5	< 0.5	0.6	1.2	< 0.5	< 0.5

Table 1
Soil Analytical Results
GWS Giants CoE
1 Olympic Boulevard, Olympic Park NSW
2407374

	PAH (mg/kg)																				
	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a) pyrene	Benzo(b+j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Benzo(a)pyrene TEQ calc (Half)	Benzo(a)pyrene TEQ (LOR)	Benzo(a)pyrene TEQ calc (Zero)	PAHs (Sum of total)
	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
Statistics																				
Number of Results	4	4	4	4	4	4	0	4	0	4	0	4	0	0	0	0	0	0	4	4
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration																				
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	< 0.05	< 0.05	< 0.05	< 0.2	< 0.2	< 0.05		< 0.05		< 0.05		< 0.1							< 0.05	< 0.05
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration *	0.05	0.05	0.05	0.2	0.2	0.05		0.05		0.05		0.1							0.05	0.05
Median Concentration *	0.05	0.05	0.05	0.2	0.2	0.05		0.05		0.05		0.1							0.05	0.05
Standard Deviation *	0	0	0	0	0	0		0		0		0							0	0
95% UCL (Student's-t) *	0.05	0.05	0.05	0.2	0.2	0.05		0.05		0.05		0.1							0.05	0.05
ProUCL Percentage																				
% of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Guideline Notes:

[#1]Lead: HIL is based on blood lead models (IEUBK for HILs A, B and C and adult lead model for HIL D where 50% oral b
[#2]Site-specific bioavailability may be important and should be considered where appropriate
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[#9]Insufficient data was available to calculate aged values for DDT and naphthalene, consequently the values for fresh co
[#10]Total PAHs: Based on sum of 16 most common reported (WHO 98)
[#11]HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & napthalene (should me
[#12]Lead: HIL is based on blood lead models (IEUBK for HILs A, B and C and adult lead model for HIL D where 50% oral
[#13]Site-specific bioavailability may be important and should be considered where appropriate
[#14]Arsenic: HIL assumes 70% oral bioavailability
[#15]Site-specific bioavailability may be important and should be considered where appropriate (refer Schedule B7)
[#16]Elemental mercury: HIL does not address elemental mercury
[#17]A site-specific assessment should be considered if elemental mercury is present, or suspected to be present,
[#18]Total PAHs: Based on sum of 16 most common reported (WHO 98)
[#19]HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & napthalene (should me
[#20]Carcinogenic PAHs: HIL is based on the 8 carcinogenic PAHs and their TEFs (potency relative to B(a)P) adopted by C
[#21]The B(a)P TEQ is calculated by multiplying the concentration of each carcinogenic PAH in the sample by its B(a)P TE
[#22]Where the B(a)P occurs in bitumen fragments it is relatively immobile and does not represent a significant health risk
[#23]PCBs: HIL relates to non-dioxin-like PCBs only
[#24]Where a PCB source is known, or suspected, to be present at a site, a site-specific assessment of exposure to all PC
[#25]To obtain F2 subtract napthalene from the >C10 - C16 fraction
[#26]To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction
[#27]Aged values are applicable to arsenic contamination present in soil for at least two years
[#28]For fresh contamination refer to Schedule B5c
[#29]Insufficient data was available to calculate aged values for DDT and naphthalene, consequently the values for fresh co
[#30]Ethylbenzene and naphthalene are classified by IARC as Group 2B (possible carcinogenic to humans), however slope
[#31]Therefore, the HSLs have been based on a threshold endpoint and may be subject to change in the future
[#32]ESLs are of low reliability except where indicated with this note which indicates that the ESL is of moderate reliability

Table 2
QA/QC Results - Rinsate Blanks
GWS Giants CoE
1 Olympic Boulevard, Olympic Park NSW
2407374

Analyte	Units	EQL	SB03_0.2 (parent)	QC01 (duplicate)	RPD	QC02 (triplicate)	RPD	SB10_0.5 (parent)	QC03 (duplicate)	RPD	QC04 (triplicate)	RPD
Lab Report No.			ES2424909	ES2424909		1124129		ES2424909	ES2424909		1124129	
Original Title			SB03_0.2	QC01		QC02		SB10_0.5	QC03		QC04	
Sampled Date			30-07-2024	30-07-2024		30-07-2024		30-07-2024	30-07-2024		30-07-2024	
Matrix			Soil	Soil		Soil		Soil	Soil		Soil	
QC Sample Type			Normal	Normal		Normal		Normal	Normal		Normal	
8 Metals												
Arsenic	mg/kg	2	< 5	< 5	-	4	-	5	< 5	-	9.3	60.14%
Cadmium	mg/kg	0.4	< 1	< 1	-	< 0.4	-	< 1	< 1	-	< 0.4	-
Chromium (III+VI)	mg/kg	2	8	7	13.33%	10	22.22%	11	13	16.67%	15	30.77%
Copper	mg/kg	5	12	13	8%	16	28.57%	22	30	30.77%	76	110.2%
Nickel	mg/kg	2	5	7	33.33%	8.7	54.01%	13	12	8%	15	14.29%
Lead	mg/kg	5	23	22	4.44%	26	12.24%	33	35	5.88%	67	68%
Zinc	mg/kg	5	43	46	6.74%	59	31.37%	51	60	16.22%	110	73.29%
Mercury	mg/kg	0.1	< 0.1	< 0.1	-	< 0.1	-	0.2	0.2	0%	< 0.1	-
PAH												
Acenaphthene	mg/kg	0.5	< 0.5	< 0.5	-	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-
Acenaphthylene	mg/kg	0.5	< 0.5	< 0.5	-	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-
Anthracene	mg/kg	0.5	< 0.5	< 0.5	-	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-
Benzo(a)anthracene	mg/kg	0.5	< 0.5	< 0.5	-	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-
Benzo(a) pyrene	mg/kg	0.5	< 0.5	< 0.5	-	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-
Benzo(b+j)fluoranthene	mg/kg	0.5	< 0.5	< 0.5	-	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-
Benzo(g,h,i)perylene	mg/kg	0.5	< 0.5	< 0.5	-	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-
Benzo(k)fluoranthene	mg/kg	0.5	< 0.5	< 0.5	-	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-
Chrysene	mg/kg	0.5	< 0.5	< 0.5	-	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-
Dibenz(a,h)anthracene	mg/kg	0.5	< 0.5	< 0.5	-	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-
Fluoranthene	mg/kg	0.5	< 0.5	< 0.5	-	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-
Fluorene	mg/kg	0.5	< 0.5	< 0.5	-	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	< 0.5	< 0.5	-	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-
Naphthalene	mg/kg	0.5	< 0.5	< 0.5	-	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-
Phenanthrene	mg/kg	0.5	< 0.5	< 0.5	-	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-
Pyrene	mg/kg	0.5	< 0.5	< 0.5	-	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-
Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5	0.6	0.6	0%	0.6	0%	0.6	0.6	0%	0.6	0%
Benzo(a)pyrene TEQ (LOR)	mg/kg	0.5	1.2	1.2	0%	1.2	0%	1.2	1.2	0%	1.2	0%
Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5	< 0.5	< 0.5	-	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-
PAHs (Sum of total)	mg/kg	0.5	< 0.5	< 0.5	-	< 0.5	-	< 0.5	< 0.5	-	< 0.5	-
Shaded	Indicates a non-detect exceedance											

Table 3a
QA/QC Results - Rinsate Blanks
GWS Giants CoE
1 Olympic Boulevard, Olympic Park NSW
2407374

Analyte	Units	EQL	QC05
Sample ID			QC05
Sampled Date			30-07-2024
Matrix			Water
Lab Report No.			ES2424909
QC Sample Type			Rinsate
Metals (mg/l)			
Arsenic	mg/L	0.001	< 0.001
Cadmium	mg/L	0.0001	< 0.0001
Chromium (III+VI)	mg/L	0.001	< 0.001
Copper	mg/L	0.001	< 0.001
Lead	mg/L	0.001	< 0.001
Mercury	mg/L	0.0001	< 0.0001
Nickel	mg/L	0.001	< 0.001
Zinc	mg/L	0.005	< 0.005
PAH (ug/l)			
Acenaphthene	µg/L	1	< 1
Acenaphthylene	µg/L	1	< 1
Anthracene	µg/L	1	< 1
Benzo(a)anthracene	µg/L	1	< 1
Benzo(a) pyrene	µg/L	0.5	< 0.5
Benzo(b+j)fluoranthene	µg/L	1	< 1
Benzo(g,h,i)perylene	µg/L	1	< 1
Benzo(k)fluoranthene	µg/L	1	< 1
Chrysene	µg/L	1	< 1
Dibenz(a,h)anthracene	µg/L	1	< 1
Fluoranthene	µg/L	1	< 1
Fluorene	µg/L	1	< 1
Indeno(1,2,3-c,d)pyrene	µg/L	1	< 1
Naphthalene	µg/L	1	< 1
Phenanthrene	µg/L	1	< 1
Pyrene	µg/L	1	< 1
Benzo(a)pyrene TEQ calc (Zero)	µg/L	0.5	< 0.5
PAHs (Sum of total)	µg/L	0.5	< 0.5
Shaded	Indicates a non-detect exceedance		

Table 3b
QA/QC Results - Trip Blanks
GWS Giants CoE
1 Olympic Boulevard, Olympic Park NSW
2407374

Analyte	Units	EQL	QC06
Sample ID			QC06
Sampled Date			29-07-2024
Matrix			Soil
Lab Report No.			ES2424909
QC Sample Type			Trip Blanks
TPH (mg/kg)			
C6-C9 Fraction	mg/kg	10	< 10
C10-C14 Fraction	mg/kg	50	-
C15-C28 Fraction	mg/kg	100	-
C29-C36 Fraction	mg/kg	100	-
C10-C36 Fraction (Sum)	mg/kg	50	-
TRH (mg/kg)			
C6-C10 Fraction (F1)	mg/kg	10	< 10
C6-C10 (F1 minus BTEX)	mg/kg	10	< 10
>C10-C16 Fraction (F2)	mg/kg	50	-
>C10-C16 Fraction (F2 minus Naphthalene)	mg/kg	50	-
>C16-C34 Fraction (F3)	mg/kg	100	-
>C34-C40 Fraction (F4)	mg/kg	100	-
>C10-C40 Fraction (Sum)	mg/kg	50	-
BTEX (mg/kg)			
Benzene	mg/kg	0.2	< 0.2
Toluene	mg/kg	0.5	< 0.5
Ethylbenzene	mg/kg	0.5	< 0.5
Xylene, m- & p-	mg/kg	0.5	< 0.5
Xylene (o)	mg/kg	0.5	< 0.5
Xylene Total	mg/kg	0.5	< 0.5
Total BTEX	mg/kg	0.2	< 0.2
Naphthalene (VOC)	mg/kg	1	< 1
Shaded	Indicates a non-detect exceedance		

Appendix A: Soil Bore Logs

Soil Bore
SB01

UTM	**: 56H**	**Drill Rig**	**: Hand Auger**	**Job Number**	**: 2407374**
Latitude	**: -33.852204**	**Driller Supplier**	**: N/A**	**Client**	**: FDC Construction**
Longitude	**: 151.072006**	**Logged By**	**: DT**	**Project**	**: FDC GWS Spectator Mound DA**
Ground Elevation	**: 0.0001 (m)**	**Reviewed By**	**: LC**	**Location**	**: 1 Olympic Boulevard, Sydney Olympic Park NSW, Australia**
Total Depth	**: 1.2 m BGL**	**Date**	**: 30/07/2024**	**Loc Comment**	**:**

PID (ppm)	Sample	Moisture	Water Level	Depth (m)	Graphic Log	LITHOLOGICAL DESCRIPTION	COMMENTS / CONTAMINANT INDICATORS	Well Diagram	Elevation (m)
						TOPSOIL			0
	SB01_0.2	M				FILL: Sandy Clayey Gravel, siltstone rock, limestone cobbles, brown, poorly graded, subangular, mildly dense, moist			
		D				FILL: Sandy Gravelly Clay, rock cobbles, brown/grey, hard, low plasticity, dry			
	SB01_0.5			0.50		FILL: Sandy Gravelly Clay, brown/grey, hard, low plasticity, dry,	note: No staining, No odour, No waste		
						FILL: Sandy Gravelly Clay, ash, decreased gravels, brown/grey, hard, low plasticity, dry			
	SB01_1.0			1					-1
						SB01 Terminated at 1.2m (Target depth was reached at 1.2 m.)			
				1.50					
				2					-2
				2.50					
				3					-3
				3.50					

Soil Bore
SB02

UTM	**: 56H**	**Drill Rig**	**: Hand Auger**	**Job Number**	**: 2407374**
Latitude	**: -33.852189**	**Driller Supplier**	**: N/A**	**Client**	**: FDC Construction**
Longitude	**: 151.072035**	**Logged By**	**: DT**	**Project**	**: FDC GWS Spectator Mound DA**
Ground Elevation	**: 0.0001 (m)**	**Reviewed By**	**: LC**	**Location**	**: 1 Olympic Boulevard, Sydney Olympic Park NSW, Australia**
Total Depth	**: 1.2 m BGL**	**Date**	**: 30/07/2024**	**Loc Comment**	**:**

PID (ppm)	Sample	Moisture	Water Level	Depth (m)	Graphic Log	LITHOLOGICAL DESCRIPTION	COMMENTS / CONTAMINANT INDICATORS	Well Diagram	Elevation (m)
						TOPSOIL	note: No staining, No odour, No waste		0
	SB02_0.2	M				FILL: Sandy Clayey Gravel, siltstone rock, limestone cobbles, brown, poorly graded, subangular, mildly dense, moist			
		D				FILL: Sandy Gravelly Clay, rock cobbles, brown/grey, hard, low plasticity, dry			
	SB02_0.5			0.50		FILL: Sandy Gravelly Clay, brown/grey, hard, low plasticity, dry			
						FILL: Sandy Gravelly Clay, decreased gravels, ash, brown/grey, hard, low plasticity, dry			
	SB02_1.0			1					-1
						SB02 Terminated at 1.2m (Target depth was reached at 1.2 m.)			
				1.50					
				2					-2
				2.50					
				3					-3
				3.50					

Soil Bore
SB03

UTM	**: 56H**	**Drill Rig**	**: Hand Auger**	**Job Number**	**: 2407374**
Latitude	**: -33.852189**	**Driller Supplier**	**: N/A**	**Client**	**: FDC Construction**
Longitude	**: 151.071989**	**Logged By**	**: DT**	**Project**	**: FDC GWS Spectator Mound DA**
Ground Elevation	**: 0.0001 (m)**	**Reviewed By**	**: LC**	**Location**	**: 1 Olympic Boulevard, Sydney Olympic Park NSW, Australia**
Total Depth	**: 1.2 m BGL**	**Date**	**: 30/07/2024**	**Loc Comment**	**:**

PID (ppm)	Sample	Moisture	Water Level	Depth (m)	Graphic Log	LITHOLOGICAL DESCRIPTION	COMMENTS / CONTAMINANT INDICATORS	Well Diagram	Elevation (m)
						TOPSOIL			0
	SB03_0.2, QC01, QC02	M				FILL: Sandy Clayey Gravel, siltstone rock, limestone cobbles, brown, poorly graded, subangular, mildly dense, moist,			
		D				FILL: Sandy Gravelly Clay, rock cobbles, brown/grey, hard, low plasticity, dry			
	SB03_0.5			0.50		FILL: Sandy Gravelly Clay, brown/grey, hard, low plasticity, dry	note: No staining, No odour, No waste		
						FILL: Sandy Gravelly Clay, decreased gravels, ash, brown/grey, hard, low plasticity, dry			
	SB03_1.0			1					-1
						SB03 Terminated at 1.2m (Target depth was reached at 1.2 m.)			
				1.50					
				2					-2
				2.50					
				3					-3
				3.50					

Soil Bore
SB04

UTM	**: 56H**	**Drill Rig**	**: Hand Auger**	**Job Number**	**: 2407374**
Latitude	**: -33.851750**	**Driller Supplier**	**: N/A**	**Client**	**: FDC Construction**
Longitude	**: 151.073242**	**Logged By**	**: DT**	**Project**	**: FDC GWS Spectator Mound DA**
Ground Elevation	**: 0.0001 (m)**	**Reviewed By**	**: LC**	**Location**	**: 1 Olympic Boulevard, Sydney Olympic Park NSW, Australia**
Total Depth	**: 1.2 m BGL**	**Date**	**: 30/07/2024**	**Loc Comment**	**:**

PID (ppm)	Sample	Moisture	Water Level	Depth (m)	Graphic Log	LITHOLOGICAL DESCRIPTION	COMMENTS / CONTAMINANT INDICATORS	Well Diagram	Elevation (m)
						TOPSOIL	note: No staining, No odour, No waste		0
	SB04_0.2	M				FILL: Gravelly Sand, siltstone rock, limestone cobbles, slag, porcelain tiles, brown, poorly graded, subangular, mildly dense, moist			
	SB04_0.5	D		0.50		FILL: Gravelly Sandy Clay, basalt cobbles, ash, brown/grey/orange, hard, low plasticity, dry			
						FILL: Sandy Clay, basalt cobbles, ash, brown/grey/orange, hard, low plasticity, dry			
	SB04_1.0			1					-1
						SB04 Terminated at 1.2m (Target depth was reached at 1.2 m.)			
				1.50					
				2					-2
				2.50					
				3					-3
				3.50					

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Soil Bore
SB05

UTM	**: 56H**	**Drill Rig**	**: Hand Auger**	**Job Number**	**: 2407374**
Latitude	**: -33.851739**	**Driller Supplier**	**: N/A**	**Client**	**: FDC Construction**
Longitude	**: 151.073222**	**Logged By**	**: DT**	**Project**	**: FDC GWS Spectator Mound DA**
Ground Elevation	**: 0.0001 (m)**	**Reviewed By**	**: LC**	**Location**	**: 1 Olympic Boulevard, Sydney Olympic Park NSW, Australia**
Total Depth	**: 1.2 m BGL**	**Date**	**: 30/07/2024**	**Loc Comment**	**:**

PID (ppm)	Sample	Moisture	Water Level	Depth (m)	Graphic Log	LITHOLOGICAL DESCRIPTION	COMMENTS / CONTAMINANT INDICATORS	Well Diagram	Elevation (m)
						TOPSOIL	note: No staining, No odour, No waste		0
	SB05_0.2	M				FILL: Gravelly Sand, siltstone rock, limestone cobbles, slag, porcelain tiles, brown, poorly graded, subangular, mildly dense, moist			
	SB05_0.5	D		0.50		FILL: Gravelly Sandy Clay, basalt cobbles, ash, brown/grey/orange, hard, low plasticity, dry			
	SB05_1.0			1		FILL: Sandy Clay, basalt cobbles, ash, brown/grey/orange, hard, low plasticity, dry			-1
				1.50		**SB05 Terminated at 1.2m (Target depth was reached at 1.2 m.)**			-2
				2					
				2.50					-3
				3					
				3.50					

Soil Bore
SB06

UTM	**: 56H**	**Drill Rig**	**: Hand Auger**	**Job Number**	**: 2407374**
Latitude	**: -33.851726**	**Driller Supplier**	**: N/A**	**Client**	**: FDC Construction**
Longitude	**: 151.073206**	**Logged By**	**: DT**	**Project**	**: FDC GWS Spectator Mound DA**
Ground Elevation	**: 0.0001 (m)**	**Reviewed By**	**: LC**	**Location**	**: 1 Olympic Boulevard, Sydney Olympic Park NSW, Australia**
Total Depth	**: 1.2 m BGL**	**Date**	**: 30/07/2024**	**Loc Comment**	**:**

PID (ppm)	Sample	Moisture	Water Level	Depth (m)	Graphic Log	LITHOLOGICAL DESCRIPTION	COMMENTS / CONTAMINANT INDICATORS	Well Diagram	Elevation (m)
						TOPSOIL	note: No staining, No odour, No waste		0
	SB06_0.2	M				FILL: Gravelly Sand, siltstone rock, limestone cobbles, slag, porcelain tiles, brown, poorly graded, subangular, mildly dense, moist			
	SB06_0.5	D		0.50		FILL: Gravelly Sandy Clay, basalt cobbles, ash, brown/grey/orange, low plasticity, hard, dry			
	SB06_1.0			1		FILL: Sandy Clay, basalt cobbles, ash, brown/grey/orange, low plasticity, hard, dry			-1
				1.50		**SB06 Terminated at 1.2m (Target depth was reached at 1.2 m.)**			-2
				2					
				2.50					-3
				3					
				3.50					

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Soil Bore
SB07

UTM	**: 56H**	**Drill Rig**	**: Hand Auger**	**Job Number**	**: 2407374**
Latitude	**: -33.852397**	**Driller Supplier**	**: N/A**	**Client**	**: FDC Construction**
Longitude	**: 151.073775**	**Logged By**	**: DT**	**Project**	**: FDC GWS Spectator Mound DA**
Ground Elevation	**: 0.0001 (m)**	**Reviewed By**	**: LC**	**Location**	**: 1 Olympic Boulevard, Sydney Olympic Park NSW, Australia**
Total Depth	**: 0.6 m BGL**	**Date**	**: 30/07/2024**	**Loc Comment**	**:**

PID (ppm)	Sample	Moisture	Water Level	Depth (m)	Graphic Log	LITHOLOGICAL DESCRIPTION	COMMENTS / CONTAMINANT INDICATORS	Well Diagram	Elevation (m)
		M				TOPSOIL: Clayey Sand, poorly graded, loose, brown, moist, underlain by geofabric layer			0
	SB07_0.2					FILL: Gravelly Sand, basalt cobbles, slag, brown/grey, poorly graded, subangular, mildly dense, moist	note: No staining, No odour, No waste		
		D				FILL: Clayey Sand, dark brown, poorly graded, mildly dense, hard, low plasticity, dry			
	SB07_0.4								
				0.50		FILL: Sandy Gravelly Clay, basalt cobbles, ash, brown/grey/orange, hard, low plasticity, dry			
	SB07_0.6					**SB07 Terminated at 0.6m (Practical refusal was reached at 0.6 m. Very compact gravelly clays.)**			
				1					-1
				1.50					
				2					-2
				2.50					
				3					-3
				3.50					

Soil Bore
SB08

UTM	: 56H	**Drill Rig**	: Hand Auger	**Job Number**	: 2407374
Latitude	: -33.852412	**Driller Supplier**	: N/A	**Client**	: FDC Construction
Longitude	: 151.073795	**Logged By**	: DT	**Project**	: FDC GWS Spectator Mound DA
Ground Elevation	: 0.0001 (m)	**Reviewed By**	: LC	**Location**	: 1 Olympic Boulevard, Sydney Olympic Park NSW, Australia
Total Depth	: 0.7 m BGL	**Date**	: 30/07/2024	**Loc Comment**	:

PID (ppm)	Sample	Moisture	Water Level	Depth (m)	Graphic Log	LITHOLOGICAL DESCRIPTION	COMMENTS / CONTAMINANT INDICATORS	Well Diagram	Elevation (m)
	SB08_0.2	M				TOPSOIL: Clayey Sand, brown, poorly graded, loose, moist, underlain by geofabric layer	note: Rotten egg / sulphur odour from 0.3 to 0.5 mbgl, No staining, No waste		0
	SB08_0.4	D		0.50		FILL: Gravelly Sand, basalt cobbles, slag, brown/grey, poorly graded, subangular, mildly dense, moist FILL: Clayey Sand, dark brown, poorly graded, mildly dense, hard, low plasticity, dry FILL: Sandy Gravelly Clay, basalt cobbles, ash, brown/grey/orange, hard, low plasticity, dry			
	SB08_0.7					**SB08 Terminated at 0.7m (Practical refusal was reached at 0.7 m. Very compact gravelly clays.)**			
				1					-1
				1.50					
				2					-2
				2.50					
				3					-3
				3.50					

This report must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

Soil Bore
SB09

UTM	**: 56H**	**Drill Rig**	**: Hand Auger**	**Job Number**	**: 2407374**
Latitude	**: -33.852431**	**Driller Supplier**	**: N/A**	**Client**	**: FDC Construction**
Longitude	**: 151.073764**	**Logged By**	**: DT**	**Project**	**: FDC GWS Spectator Mound DA**
Ground Elevation	**: 0.0001 (m)**	**Reviewed By**	**: LC**	**Location**	**: 1 Olympic Boulevard, Sydney Olympic Park NSW, Australia**
Total Depth	**: 0.8 m BGL**	**Date**	**: 30/07/2024**	**Loc Comment**	**:**

PID (ppm)	Sample	Moisture	Water Level	Depth (m)	Graphic Log	LITHOLOGICAL DESCRIPTION	COMMENTS / CONTAMINANT INDICATORS	Well Diagram	Elevation (m)
	SB09_0.2	M				TOPSOIL: Clayey Sand, brown, poorly graded, loose, moist, underlain by geofabric layer			0
		D				FILL: Gravelly Sand, basalt cobbles, slag, brown/grey, poorly graded, subangular, mildly dense, moist			
						FILL: Clayey Sand, dark brown, poorly graded, mildly dense, hard, low plasticity, dry	note: No staining, No odour, No waste		
	SB09_0.5			0.50		FILL: Sandy Gravelly Clay, basalt cobbles, ash, brown/grey/orange, hard, low plasticity, dry			
	SB09_0.8								
						SB09 Terminated at 0.8m (Practical refusal was reached at 0.8 m. Very compact gravelly clays.)			
				1					-1
				1.50					
				2					-2
				2.50					
				3					-3
				3.50					

Datanet

Soil Bore
SB10

UTM	**: 56H**	**Drill Rig**	**: Hand Auger**	**Job Number**	**: 2407374**
Latitude	**: -33.853075**	**Driller Supplier**	**: N/A**	**Client**	**: FDC Construction**
Longitude	**: 151.072861**	**Logged By**	**: DT**	**Project**	**: FDC GWS Spectator Mound DA**
Ground Elevation	**: 0.0001 (m)**	**Reviewed By**	**: LC**	**Location**	**: 1 Olympic Boulevard, Sydney Olympic Park NSW, Australia**
Total Depth	**: 1.2 m BGL**	**Date**	**: 30/07/2024**	**Loc Comment**	**:**

PID (ppm)	Sample	Moisture	Water Level	Depth (m)	Graphic Log	LITHOLOGICAL DESCRIPTION	COMMENTS / CONTAMINANT INDICATORS	Well Diagram	Elevation (m)
						TOPSOIL	note: No staining, No odour, No waste		0
	SB10_0.2	M				FILL: Gravelly Sand, siltstone rock, limestone cobbles, slag, porcelain tiles, brown, poorly graded, subangular, mildly dense, moist			
	SB10_0.5	D		0.50		FILL: Gravelly Sandy Clay, basalt cobbles, ash, brown/grey/orange, hard, low plasticity, dry			
	SB10_1.0			1		FILL: Sandy Clay, basalt cobbles, ash, brown/grey/orange, hard, low plasticity, dry			-1
				1.50		**SB10 Terminated at 1.2m (Target depth was reached at 1.2 m.)**			-2
				2					
				2.50					-3
				3					
				3.50					

Soil Bore
SB11

UTM	**: 56H**	**Drill Rig**	**: Hand Auger**	**Job Number**	**: 2407374**
Latitude	**: -33.853094**	**Driller Supplier**	**: N/A**	**Client**	**: FDC Construction**
Longitude	**: 151.072869**	**Logged By**	**: DT**	**Project**	**: FDC GWS Spectator Mound DA**
Ground Elevation	**: 0.0001 (m)**	**Reviewed By**	**: LC**	**Location**	**: 1 Olympic Boulevard, Sydney Olympic Park NSW, Australia**
Total Depth	**: 1.2 m BGL**	**Date**	**: 30/07/2024**	**Loc Comment**	**:**

PID (ppm)	Sample	Moisture	Water Level	Depth (m)	Graphic Log	LITHOLOGICAL DESCRIPTION	COMMENTS / CONTAMINANT INDICATORS	Well Diagram	Elevation (m)
						TOPSOIL	note: No staining, No odour, No waste		0
	SB11_0.2	M				FILL: Gravelly Sand, siltstone rock, limestone cobbles, slag, porcelain tiles, brown, poorly graded, subangular, mildly dense, moist			
	SB11_0.5	D		0.50		FILL: Gravelly Sandy Clay, basalt cobbles, ash, brown/grey/orange, hard, low plasticity, dry			
	SB11_1.0			1		FILL Sandy Clay, low plasticity, basalt cobbles, ash, brown/grey/orange, hard, dry			-1
				1.50		**SB11 Terminated at 1.2m (Target depth was reached at 1.2 m.)**			-2
				2					
				2.50					-3
				3					
				3.50					

Soil Bore
SB12

UTM	**: 56H**	**Drill Rig**	**: Hand Auger**	**Job Number**	**: 2407374**
Latitude	**: -33.853082**	**Driller Supplier**	**: N/A**	**Client**	**: FDC Construction**
Longitude	**: 151.072912**	**Logged By**	**: DT**	**Project**	**: FDC GWS Spectator Mound DA**
Ground Elevation	**: 0.0001 (m)**	**Reviewed By**	**: LC**	**Location**	**: 1 Olympic Boulevard, Sydney Olympic Park NSW, Australia**
Total Depth	**: 1.2 m BGL**	**Date**	**: 30/07/2024**	**Loc Comment**	**:**

PID (ppm)	Sample	Moisture	Water Level	Depth (m)	Graphic Log	LITHOLOGICAL DESCRIPTION	COMMENTS / CONTAMINANT INDICATORS	Well Diagram	Elevation (m)
						TOPSOIL	note: No staining, No odour, No waste		0
	SB12_0.2	M				FILL: Gravelly Sand, siltstone rock, limestone cobbles, slag, porcelain tiles, brown, poorly graded, subangular, mildly dense, moist			
	SB12_0.5	D		0.50		FILL: Gravelly Sandy Clay, basalt cobbles, ash, brown/grey/orange, hard, low plasticity, dry			
	SB12_1.0			1		FILL: Sandy Clay, basalt cobbles, ash, brown/grey/orange, hard, low plasticity, dry			-1
				1.50		**SB12 Terminated at 1.2m (Target depth was reached at 1.2 m.)**			-2
				2					
				2.50					-3
				3					
				3.50					

This report must be read in conjunction with accompanying notes and abbreviations. It has been prepared for environmental purposes only, without attempt to consider geotechnical properties or the geotechnical significance of the materials encountered. As such it should not be relied upon for geotechnical purposes.

Soil Bore
SB13

UTM	**: 56H**	**Drill Rig**	**: Hand Auger**	**Job Number**	**: 2407374**
Latitude	**: -33.852017**	**Driller Supplier**	**: N/A**	**Client**	**: FDC Construction**
Longitude	**: 151.073623**	**Logged By**	**: DT**	**Project**	**: FDC GWS Spectator Mound DA**
Ground Elevation	**: 0.0001 (m)**	**Reviewed By**	**: LC**	**Location**	**: 1 Olympic Boulevard, Sydney Olympic Park NSW, Australia**
Total Depth	**: 1.9 m BGL**	**Date**	**: 30/07/2024**	**Loc Comment**	**:**

PID (ppm)	Sample	Moisture	Water Level	Depth (m)	Graphic Log	LITHOLOGICAL DESCRIPTION	COMMENTS / CONTAMINANT INDICATORS	Well Diagram	Elevation (m)
		M				TOPSOIL: Clayey Sand, brown, poorly graded, loose, moist			0
	SB01_0.2					FILL: Gravelly Sand, brown, poorly graded, subangular, mildly dense, moist			
	SB01_0.5	D		0.50		FILL: Sandy Gravelly Clay, basalt cobbles, ash, plastic sheet, brown/grey/orange, stiff, low plasticity, dry	note: No staining, No odour, No waste		
	SB01_1.0			1					-1
				1.50		FILL: Cobbly Clay, basalt cobbles, ash, brown/grey/orange, stiff, medium plasticity, slightly moist.			
				2		**SB13 Terminated at 1.9m (Target depth was reached at 1.9 m.)**			-2
				2.50					
				3					-3
				3.50					

Appendix B: Equipment Calibration Certificates

PID Calibration Certificate

Instrument Tiger XT
Serial No. XT-100669

airmet

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
	Recharge OK?	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
Pump	Operation	✓	
	Filter	✓	
	Flow	✓	
	Valves, Diaphragm	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	PID	✓	10.6 ev
Alarms	Beeper	✓	Low: 50ppm; High: 100ppm; TWA: 100ppm; STEL: 250ppm
	Settings	✓	
Software	Version	✓	
Data logger	Operation	✓	
Download	Operation	✓	
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Diffusion mode Aspirated mode

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No		Instrument Reading
PID Lamp	229230832	97 ppm Isobutylene	NIST	SY532		96.3 ppm

Calibrated by: **Alex Buist**

Calibration date: **25/07/2024**

Next calibration due: **24/08/2024**

Appendix C: Laboratory Analytical Reports and COC Documentation

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2424909**

Client	: **ARC ENVIRONMENTAL**	Laboratory	: Environmental Division Sydney
Contact	: DECLAN TENNENT	Contact	: Katie Davis
Address	: Suite 309, 546 Collins St MELBOURNE 3000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: declan@arcenvironmental.com.au	E-mail	: katie.davis@alsglobal.com
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: 2407374	Page	: 1 of 4
Order number	: ----	Quote number	: EM2023ARCENV0001 (EM23ARCENV0001 VIC Custom Quote)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: GWS Giants		
Sampler	: DT		

Dates

Date Samples Received	: 30-Jul-2024 16:00	Issue Date	: 31-Jul-2024
Client Requested Due Date	: 06-Aug-2024	Scheduled Reporting Date	: **06-Aug-2024**

Delivery Details

Mode of Delivery	: Undefined	Security Seal	: Not Available
No. of coolers/boxes	: 3	Temperature	: 13.4'C, 16.5'C, 19.3'C - Ice present
Receipt Detail	:	No. of samples received / analysed	: 44 / 31

General Comments

- This report contains the following information:
  - Sample Container(s)/Preservation Non-Compliances
  - Summary of Sample(s) and Requested Analysis
  - Proactive Holding Time Report
  - Requested Deliverables
- Samples QC02 and QC04 forwarded to Eurofins.
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Unless otherwise stated, analytical work for this work order will be conducted at ALS Sydney, NATA accreditation no. 825, site no. 10911.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months ± 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

Sample Container(s)/Preservation Non-Compliances

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

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

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.
If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP075 SIM PAH only SIM - PAH only	SOIL - P-21/1 (Syd/Bne) NEPM (2013) HIL Table 1A(1) Screen	SOIL - S-02 8 Metals (incl. Digestion)
ES2424909-001	30-Jul-2024 00:00	SB01_0.2		✓	✓		✓
ES2424909-002	30-Jul-2024 00:00	SB01_0.5		✓		✓	
ES2424909-003	30-Jul-2024 00:00	SB01_1.0	✓				
ES2424909-004	30-Jul-2024 00:00	SB02_0.2	✓				
ES2424909-005	30-Jul-2024 00:00	SB02_0.5		✓	✓		✓
ES2424909-006	30-Jul-2024 00:00	SB02_1.0	✓				
ES2424909-007	30-Jul-2024 00:00	SB03_0.2		✓	✓		✓
ES2424909-008	30-Jul-2024 00:00	SB03_0.5	✓				
ES2424909-009	30-Jul-2024 00:00	SB03_1.0		✓	✓		✓
ES2424909-010	30-Jul-2024 00:00	SB04_0.2		✓	✓		✓
ES2424909-011	30-Jul-2024 00:00	SB04_0.5	✓				
ES2424909-012	30-Jul-2024 00:00	SB04_1.0		✓	✓		✓
ES2424909-013	30-Jul-2024 00:00	SB05_0.2		✓	✓		✓
ES2424909-014	30-Jul-2024 00:00	SB05_0.5		✓	✓		✓
ES2424909-015	30-Jul-2024 00:00	SB05_1.0	✓				
ES2424909-016	30-Jul-2024 00:00	SB06_0.2		✓		✓	
ES2424909-017	30-Jul-2024 00:00	SB06_0.5		✓	✓		✓
ES2424909-018	30-Jul-2024 00:00	SB06_1.0		✓	✓		✓
ES2424909-019	30-Jul-2024 00:00	SB07_0.2		✓	✓		✓
ES2424909-020	30-Jul-2024 00:00	SB07_0.4		✓	✓		✓
ES2424909-021	30-Jul-2024 00:00	SB07_0.6		✓		✓	
ES2424909-022	30-Jul-2024 00:00	SB08_0.2	✓				
ES2424909-023	30-Jul-2024 00:00	SB08_0.4	✓				
ES2424909-024	30-Jul-2024 00:00	SB08_0.7		✓	✓		✓
ES2424909-025	30-Jul-2024 00:00	SB09_0.2	✓				
ES2424909-026	30-Jul-2024 00:00	SB09_0.5		✓	✓		✓
ES2424909-027	30-Jul-2024 00:00	SB09_0.8		✓	✓		✓
ES2424909-028	30-Jul-2024 00:00	SB10_0.2		✓	✓		✓
ES2424909-029	30-Jul-2024 00:00	SB10_1.0	✓				
ES2424909-030	30-Jul-2024 00:00	SB10_0.5		✓	✓		✓
ES2424909-031	30-Jul-2024 00:00	SB11_0.2		✓	✓		✓
ES2424909-032	30-Jul-2024 00:00	SB11_0.5	✓				
ES2424909-033	30-Jul-2024 00:00	SB11_1.0		✓	✓		✓
ES2424909-034	30-Jul-2024 00:00	SB12_0.2	✓				
ES2424909-035	30-Jul-2024 00:00	SB12_0.5		✓	✓		

			(On Hold) SOIL No analysis requested	SOIL - EA055-103 Moisture Content	SOIL - EP075 SIM PAH only SIM - PAH only	SOIL - P-21/1 (Syd/Bne) NEPM (2013) HIL Table 1A(1) Screen	SOIL - S-02 8 Metals (incl. Digestion)
ES2424909-036	30-Jul-2024 00:00	SB12_1.0		✓		✓	
ES2424909-037	30-Jul-2024 00:00	SB13_0.2		✓	✓		✓
ES2424909-038	30-Jul-2024 00:00	SB13_0.5		✓	✓		✓
ES2424909-039	30-Jul-2024 00:00	SB13_1.0	✓				
ES2424909-040	30-Jul-2024 00:00	SB13_1.9		✓	✓		✓
ES2424909-041	30-Jul-2024 00:00	QC01		✓	✓		✓
ES2424909-042	30-Jul-2024 00:00	QC03		✓	✓		✓

Matrix: **SOIL**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	SOIL - S-18 (NO MOIST) TRH(C6-C9)/BTEXN with No Moisture for TBs
ES2424909-044	29-Jul-2024 00:00	QC06 TB	✓

Matrix: **WATER**

Laboratory sample ID	*Sampling date / time*	*Sample ID*	WATER - EP075 SIM PAH only SIM - PAH only	WATER - W-02T 8 metals (Total)
ES2424909-043	30-Jul-2024 00:00	QC05	✓	✓

Proactive Holding Time Report

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

Requested Deliverables

Admin

- A4 - AU Tax Invoice (INV)	Email	admin@arcenvironmental.com.au

DECLAN TENNENT

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

Chain of Custody Documentation

ARC ENVIRONMENTAL
Suite 1.03 7 Jeffcott Street, West Melbourne 3003
Phone: (03) 8383 1950

LAB: ALS	SAMPLER: DT
LAB ADDRESS :	MOBILE: 0439 919 543
PROJECT MANAGER (PM): Declan	PHONE:
PROJECT ID: 2407374	EMAIL REPORT TO: declan@arcenvironmental.com.au
SITE: GWS Giants — Primary Lab Quote: ARC Standard	EMAIL INVOICE TO: (if different to report) admin@arcenvironmental.com.au
RESULTS REQUIRED (Date): STANDARD/5 day — Secondary Lab Quote:	ANALYSIS REQUIRED including SUITES

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

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

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION													
LAB ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	8 metals	PAH	HIL Table 1A Screen									HOLD
1	SB01_0.2	S	30/07		Jar	1	X	X										
2	SB01_0.5								X									~~X~~
3	SB01-1.0						X	X										
4	SB02-0.2						~~X~~	~~X~~										X
5	SB02-0.5						X	X										
6	SB02-1.0																	X
7	SB03-0.2						X	X										
8	SB03-0.5						X	X										
9	SB03-1.0						X	X										
10	SB04 0.2						X	X										
11	SB04-0.5																	X
12	SB04-1.0						X	X										
13	SB05-0.2						X	X										
14	SB05-0.5						X	X										
15	SB05-1.0																	X

Forward Lab? Envirolab
Sub-Lab / Analysis:
Organised By / Date: ACO2, ACO4
Relinquished By / Date:
Connote / Courier: ES2424909

Environmental Division
Sydney
Work Order Reference
ES2424909
Telephone : + 61-2-8784 8555

RELINQUISHED BY:		RECEIVED BY		METHOD OF SHIPMENT
Name: Declan	Date: 30/07	Name: Thanh	Date: 30/7/24	Con' Note No:
Of: ARC Environmental	Time:	Of: ALS	Time: 1607	
Name:	Date:	Name:	Date:	Transport Co:
Of:	Time:	Of:	Time:	

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; 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.

Chain of Custody Documentation

ARC ENVIRONMENTAL
Suite 1.03 7 Jeffcott Street, West Melbourne 3003
Phone: (03) 8383 1950

LAB: ALS	SAMPLER: DT
LAB ADDRESS: ALS	MOBILE: 0459 919 543
PROJECT MANAGER (PM): Dolan T	PHONE:
PROJECT ID: 2407374	EMAIL REPORT TO:
SITE: GWS Giants — Primary Lab Quote:	EMAIL INVOICE TO: (if different to report) admin@arcenvironmental.com.au
RESULTS REQUIRED (Date): — Secondary Lab Quote:	ANALYSIS REQUIRED including SUITES (and Code)

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

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

SAMPLE INFORMATION (note: S = Soil, W=Water)					CONTAINER INFORMATION		8 metals	PAH	HIL Table 1(a) screen								TPH
LAB ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles											
16	SB06-0.2	S	30/07		Jar	1			X								
17	SB06-0.5						X	X									
18	SB06-1.0						X	X									
19	SB07-0.2						X	X									
20	SB07-0.4						X	X									
21	SB07-0.6								X								
22	SB08-0.2						X	X									
23	SB08-0.4															X	
24	SB08-0.7						X	X									
25	SB09-0.2															X	
26	SB09-0.5						X	X									
27	SB09-0.8						X	X									
28	SB10-0.2						X	X									
	~~SB10-0.5~~						~~X~~	~~X~~								X	
29	SB10-1.0	↓	↓		↓	↓	X	X								X	
30	SB10-0.5						X	X									

RELINQUISHED BY:			RECEIVED BY			METHOD OF SHIPMENT
Name: Doclan	Date: 30/07		Name: Thank L	Date:	30/7/24	Con' Note No:
Of: ARC	Time:		Of: ALS	Time:	1600	
Name:	Date:		Name:	Date:		Transport Co:
Of:	Time:		Of:	Time:		

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; 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.

Chain of Custody Documentation

ARC ENVIRONMENTAL
Suite 1.03 7 Jeffcott Street, West Melbourne 3003
Phone: (03) 8383 1950

LAB: ALS	SAMPLER: DT
LAB ADDRESS :	MOBILE: 0439 919 543
PROJECT MANAGER (PM): DT	PHONE:
PROJECT ID: 2407374	EMAIL REPORT TO:
SITE: GWS Giants	Primary Lab Quote:
RESULTS REQUIRED (Date):	Secondary Lab Quote:
	EMAIL INVOICE TO: (if different to report) admin@arcenvironmental.com.au

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

ANALYSIS REQUIRED including SUITES (and Code)

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

LAB ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles	8 metals	PAH	NEPM HIL Table 1A Steel	TRH C6-C9/BTEX						HOLD	
31	SB11_0.2	S	30/07		Jar	1	X	X									
32	SB11_0.5															X	
33	SB11_1.0						X	X									
34	SB12_0.2						X										
35	SB12_0.5						X										
36	SB12_1.0								X								
37	SB13_0.2						X	X									
38	SB13_0.5						X	X									
39	SB13_1.0								X								
40	SB13_1.9						X	X									
41	QC01	S	30/07		Jar	1	X	X									
—	QC02	S			Jar	1	→ FORWARD TO EUROFINS										
42	QC03	S			Jar	1	X	X									
—	QC04	S			Jar	1											
43	QC05	W			~~Bottle~~	2	X	X									
44	QC06 TB	S	29/7		Jar	1			X								

RELINQUISHED BY:			RECEIVED BY			METHOD OF SHIPMENT
Name: DT	Date: 30/07		Name: Thank u	Date:	30/7/21	Con' Note No:
Of: ARC	Time:		Of: ALS	Time:	1600	
Name:	Date:		Name:	Date:		Transport Co:
Of:	Time:		Of:	Time:		

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; 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.

CERTIFICATE OF ANALYSIS

Work Order	: **ES2424909**	Page	: 1 of 34
Client	: **ARC ENVIRONMENTAL**	Laboratory	: Environmental Division Sydney
Contact	: DECLAN TENNENT	Contact	: Katie Davis
Address	: Suite 309, 546 Collins St MELBOURNE 3000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: 2407374	Date Samples Received	: 30-Jul-2024 16:00
Order number	: ----	Date Analysis Commenced	: 31-Jul-2024
C-O-C number	: ----	Issue Date	: 06-Aug-2024 18:13
Sampler	: DT		
Site	: GWS Giants		
Quote number	: EM23ARCENV0001 VIC Custom Quote		
No. of samples received	: 44		
No. of samples analysed	: 31		

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

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, 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*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic 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.

- EP075 (SIM): Where reported, Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP071: Results of sample SB07_0.6 have been confirmed by re-extraction and re-analysis.
- EG005: Poor precision was obtained for Manganese on sample ES2424499-#003. Confirmed by redigestion and reanalysis.
- Unless otherwise stated, analytical work for this work order will be conducted at ALS Sydney, NATA accreditation no. 825, site no. 10911.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	SB01_0.2	SB01_0.5	SB02_0.5	SB03_0.2	SB03_1.0
			Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit	ES2424909-001	ES2424909-002	ES2424909-005	ES2424909-007	ES2424909-009
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**14.4**	**12.2**	**12.5**	**14.6**	**13.3**
EG005(ED093)T: Total Metals by ICP-AES								
Barium	7440-39-3	10	mg/kg	----	**160**	----	----	----
Beryllium	7440-41-7	1	mg/kg	----	<1	----	----	----
Boron	7440-42-8	50	mg/kg	----	<50	----	----	----
Cobalt	7440-48-4	2	mg/kg	----	**6**	----	----	----
Manganese	7439-96-5	5	mg/kg	----	**197**	----	----	----
Selenium	7782-49-2	5	mg/kg	----	<5	----	----	----
Vanadium	7440-62-2	5	mg/kg	----	**28**	----	----	----
Arsenic	7440-38-2	5	mg/kg	<5	**6**	<5	<5	**5**
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	**7**	**14**	**11**	**8**	**16**
Copper	7440-50-8	5	mg/kg	**20**	**23**	**21**	**12**	**15**
Lead	7439-92-1	5	mg/kg	**25**	**37**	**44**	**23**	**33**
Nickel	7440-02-0	2	mg/kg	**5**	**12**	**9**	**5**	**7**
Zinc	7440-66-6	5	mg/kg	**45**	**60**	**62**	**43**	**109**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	**0.2**	**0.2**	<0.1	**0.3**
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	<0.5	----	----	----
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser								
Weak Acid Dissociable Cyanide	----	1	mg/kg	----	<1	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<0.1	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	<0.05	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	<0.05	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SB01_0.2	SB01_0.5	SB02_0.5	SB03_0.2	SB03_1.0
				Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit		ES2424909-001	ES2424909-002	ES2424909-005	ES2424909-007	ES2424909-009
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
beta-BHC	319-85-7	0.05	mg/kg		----	<0.05	----	----	----
gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg		----	<0.05	----	----	----
delta-BHC	319-86-8	0.05	mg/kg		----	<0.05	----	----	----
Heptachlor	76-44-8	0.05	mg/kg		----	<0.05	----	----	----
Aldrin	309-00-2	0.05	mg/kg		----	<0.05	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	<0.05	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		----	<0.05	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	<0.05	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		----	<0.05	----	----	----
Dieldrin	60-57-1	0.05	mg/kg		----	<0.05	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg		----	<0.05	----	----	----
Endrin	72-20-8	0.05	mg/kg		----	<0.05	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	<0.05	----	----	----
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		----	<0.05	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		----	<0.05	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	<0.05	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	<0.05	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		----	<0.2	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		----	<0.05	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		----	<0.2	----	----	----
Mirex	2385-85-5	0.20	mg/kg		----	<0.20	----	----	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		----	<0.05	----	----	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		----	<0.05	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	<0.05	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	<0.05	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SB01_0.2	SB01_0.5	SB02_0.5	SB03_0.2	SB03_1.0
				Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit		ES2424909-001	ES2424909-002	ES2424909-005	ES2424909-007	ES2424909-009
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Monocrotophos	6923-22-4	0.2	mg/kg		----	<0.2	----	----	----
Dimethoate	60-51-5	0.05	mg/kg		----	<0.05	----	----	----
Diazinon	333-41-5	0.05	mg/kg		----	<0.05	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	<0.05	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		----	<0.2	----	----	----
Malathion	121-75-5	0.05	mg/kg		----	<0.05	----	----	----
Fenthion	55-38-9	0.05	mg/kg		----	<0.05	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	<0.05	----	----	----
Parathion	56-38-2	0.2	mg/kg		----	<0.2	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	<0.05	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	<0.05	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	<0.05	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	<0.05	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg		----	<0.05	----	----	----
Ethion	563-12-2	0.05	mg/kg		----	<0.05	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg		----	<0.05	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	<0.05	----	----	----
EP068C: Triazines									
Atrazine	1912-24-9	0.05	mg/kg		----	<0.05	----	----	----
EP068D: Pyrethroids									
Bifenthrin	82657-04-3	0.05	mg/kg		----	<0.05	----	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		----	<0.5	----	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg		----	<0.5	----	----	----
2-Methylphenol	95-48-7	0.5	mg/kg		----	<0.5	----	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	<1	----	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg		----	<0.5	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	SB01_0.2	SB01_0.5	SB02_0.5	SB03_0.2	SB03_1.0
			Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit	ES2424909-001	ES2424909-002	ES2424909-005	ES2424909-007	ES2424909-009
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued								
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	----	<0.5	----	----	----
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	----	<0.5	----	----	----
2.6-Dichlorophenol	87-65-0	0.5	mg/kg	----	<0.5	----	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	----	<0.5	----	----	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	----	<0.5	----	----	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	----	<0.5	----	----	----
Pentachlorophenol	87-86-5	2	mg/kg	----	<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	**1.1**	<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	**1.4**	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	**1.3**	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	**0.6**	<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	**0.6**	<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	**6.0**	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	**0.6**	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	**0.9**	**0.6**	**0.6**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SB01_0.2	SB01_0.5	SB02_0.5	SB03_0.2	SB03_1.0
				Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit		ES2424909-001	ES2424909-002	ES2424909-005	ES2424909-007	ES2424909-009
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
^ **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	----	----	----
C10 - C14 Fraction	----	50	mg/kg		----	<50	----	----	----
C15 - C28 Fraction	----	100	mg/kg		----	<100	----	----	----
C29 - C36 Fraction	----	100	mg/kg		----	<100	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		----	<50	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	<10	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		----	<10	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		----	<50	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		----	<100	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		----	<100	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		----	<50	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		----	<50	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	<0.2	----	----	----
Toluene	108-88-3	0.5	mg/kg		----	<0.5	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		----	<0.5	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	<0.5	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		----	<0.5	----	----	----
^ **Sum of BTEX**	----	0.2	mg/kg		----	<0.2	----	----	----
^ **Total Xylenes**	----	0.5	mg/kg		----	<0.5	----	----	----
Naphthalene	91-20-3	1	mg/kg		----	<1	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	**102**	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SB01_0.2	SB01_0.5	SB02_0.5	SB03_0.2	SB03_1.0
				Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit		ES2424909-001	ES2424909-002	ES2424909-005	ES2424909-007	ES2424909-009
					Result	Result	Result	Result	Result
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	84.8	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	86.6	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		113	90.0	94.2	98.2	87.4
2-Chlorophenol-D4	93951-73-6	0.5	%		114	91.6	95.8	100	88.1
2.4.6-Tribromophenol	118-79-6	0.5	%		79.7	50.6	59.0	60.3	52.4
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		125	101	104	108	96.1
Anthracene-d10	1719-06-8	0.5	%		124	108	112	116	105
4-Terphenyl-d14	1718-51-0	0.5	%		125	99.4	102	106	95.6
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	94.2	----	----	----
Toluene-D8	2037-26-5	0.2	%		----	98.0	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		----	102	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	SB04_0.2	SB04_1.0	SB05_0.2	SB05_0.5	SB06_0.2
			Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit	ES2424909-010	ES2424909-012	ES2424909-013	ES2424909-014	ES2424909-016
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	6.9	12.6	8.2	14.0	8.1
EG005(ED093)T: Total Metals by ICP-AES								
Barium	7440-39-3	10	mg/kg	----	----	----	----	40
Beryllium	7440-41-7	1	mg/kg	----	----	----	----	<1
Boron	7440-42-8	50	mg/kg	----	----	----	----	<50
Cobalt	7440-48-4	2	mg/kg	----	----	----	----	2
Manganese	7439-96-5	5	mg/kg	----	----	----	----	82
Selenium	7782-49-2	5	mg/kg	----	----	----	----	<5
Vanadium	7440-62-2	5	mg/kg	----	----	----	----	13
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	8	11	8	9	6
Copper	7440-50-8	5	mg/kg	11	12	9	8	9
Lead	7439-92-1	5	mg/kg	21	18	26	16	25
Nickel	7440-02-0	2	mg/kg	6	3	4	<2	5
Zinc	7440-66-6	5	mg/kg	29	15	40	7	28
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
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser								
Weak Acid Dissociable Cyanide	----	1	mg/kg	----	----	----	----	<1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	----	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	----	----	----	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	----	----	----	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SB04_0.2	SB04_1.0	SB05_0.2	SB05_0.5	SB06_0.2
				Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit		ES2424909-010	ES2424909-012	ES2424909-013	ES2424909-014	ES2424909-016
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
beta-BHC	319-85-7	0.05	mg/kg		----	----	----	----	<0.05
gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg		----	----	----	----	<0.05
delta-BHC	319-86-8	0.05	mg/kg		----	----	----	----	<0.05
Heptachlor	76-44-8	0.05	mg/kg		----	----	----	----	<0.05
Aldrin	309-00-2	0.05	mg/kg		----	----	----	----	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	----	----	----	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		----	----	----	----	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	----	----	----	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		----	----	----	----	<0.05
Dieldrin	60-57-1	0.05	mg/kg		----	----	----	----	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg		----	----	----	----	<0.05
Endrin	72-20-8	0.05	mg/kg		----	----	----	----	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	----	----	----	<0.05
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		----	----	----	----	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		----	----	----	----	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	----	----	----	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	----	----	----	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		----	----	----	----	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		----	----	----	----	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		----	----	----	----	<0.2
Mirex	2385-85-5	0.20	mg/kg		----	----	----	----	<0.20
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		----	----	----	----	<0.05
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		----	----	----	----	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	----	----	----	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	----	----	----	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SB04_0.2	SB04_1.0	SB05_0.2	SB05_0.5	SB06_0.2
				Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit		ES2424909-010	ES2424909-012	ES2424909-013	ES2424909-014	ES2424909-016
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Monocrotophos	6923-22-4	0.2	mg/kg		----	----	----	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg		----	----	----	----	<0.05
Diazinon	333-41-5	0.05	mg/kg		----	----	----	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	----	----	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		----	----	----	----	<0.2
Malathion	121-75-5	0.05	mg/kg		----	----	----	----	<0.05
Fenthion	55-38-9	0.05	mg/kg		----	----	----	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	----	----	----	<0.05
Parathion	56-38-2	0.2	mg/kg		----	----	----	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	----	----	----	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	----	----	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	----	----	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		----	----	----	----	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		----	----	----	----	<0.05
Ethion	563-12-2	0.05	mg/kg		----	----	----	----	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		----	----	----	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		----	----	----	----	<0.05
EP068C: Triazines									
Atrazine	1912-24-9	0.05	mg/kg		----	----	----	----	<0.05
EP068D: Pyrethroids									
Bifenthrin	82657-04-3	0.05	mg/kg		----	----	----	----	<0.05
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		----	----	----	----	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		----	----	----	----	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg		----	----	----	----	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	----	----	----	<1
2-Nitrophenol	88-75-5	0.5	mg/kg		----	----	----	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SB04_0.2	SB04_1.0	SB05_0.2	SB05_0.5	SB06_0.2
				Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit		ES2424909-010	ES2424909-012	ES2424909-013	ES2424909-014	ES2424909-016
					Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued									
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		----	----	----	----	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		----	----	----	----	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		----	----	----	----	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		----	----	----	----	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		----	----	----	----	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		----	----	----	----	<0.5
Pentachlorophenol	87-86-5	2	mg/kg		----	----	----	----	<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**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SB04_0.2	SB04_1.0	SB05_0.2	SB05_0.5	SB06_0.2
				Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit		ES2424909-010	ES2424909-012	ES2424909-013	ES2424909-014	ES2424909-016
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
^ **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
C10 - C14 Fraction	----	50	mg/kg		----	----	----	----	<50
C15 - C28 Fraction	----	100	mg/kg		----	----	----	----	<100
C29 - C36 Fraction	----	100	mg/kg		----	----	----	----	<100
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		----	----	----	----	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	----	----	----	<10
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		----	----	----	----	<10
>C10 - C16 Fraction	----	50	mg/kg		----	----	----	----	<50
>C16 - C34 Fraction	----	100	mg/kg		----	----	----	----	<100
>C34 - C40 Fraction	----	100	mg/kg		----	----	----	----	<100
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		----	----	----	----	<50
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		----	----	----	----	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	----	----	----	<0.2
Toluene	108-88-3	0.5	mg/kg		----	----	----	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		----	----	----	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	----	----	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		----	----	----	----	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		----	----	----	----	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		----	----	----	----	<0.5
Naphthalene	91-20-3	1	mg/kg		----	----	----	----	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	----	----	**123**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SB04_0.2	SB04_1.0	SB05_0.2	SB05_0.5	SB06_0.2
				Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit		ES2424909-010	ES2424909-012	ES2424909-013	ES2424909-014	ES2424909-016
					Result	Result	Result	Result	Result
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	----	----	87.9
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	----	----	90.3
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		112	105	108	105	94.5
2-Chlorophenol-D4	93951-73-6	0.5	%		114	106	109	108	96.7
2.4.6-Tribromophenol	118-79-6	0.5	%		73.6	69.8	72.8	74.2	57.7
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		123	116	118	119	106
Anthracene-d10	1719-06-8	0.5	%		120	127	119	127	114
4-Terphenyl-d14	1718-51-0	0.5	%		120	114	114	116	104
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	----	----	----	104
Toluene-D8	2037-26-5	0.2	%		----	----	----	----	105
4-Bromofluorobenzene	460-00-4	0.2	%		----	----	----	----	111

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SB06_0.5	SB06_1.0	SB07_0.2	SB07_0.4	SB07_0.6
				Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit		ES2424909-017	ES2424909-018	ES2424909-019	ES2424909-020	ES2424909-021
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		13.9	12.6	12.7	10.4	11.8
EG005(ED093)T: Total Metals by ICP-AES									
Barium	7440-39-3	10	mg/kg		----	----	----	----	80
Beryllium	7440-41-7	1	mg/kg		----	----	----	----	<1
Boron	7440-42-8	50	mg/kg		----	----	----	----	<50
Cobalt	7440-48-4	2	mg/kg		----	----	----	----	6
Manganese	7439-96-5	5	mg/kg		----	----	----	----	395
Selenium	7782-49-2	5	mg/kg		----	----	----	----	<5
Vanadium	7440-62-2	5	mg/kg		----	----	----	----	25
Arsenic	7440-38-2	5	mg/kg		<5	<5	<5	<5	<5
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		13	17	7	9	11
Copper	7440-50-8	5	mg/kg		12	10	12	19	33
Lead	7439-92-1	5	mg/kg		36	15	17	34	31
Nickel	7440-02-0	2	mg/kg		8	3	7	13	21
Zinc	7440-66-6	5	mg/kg		42	11	34	53	73
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)									
Hexavalent Chromium	18540-29-9	0.5	mg/kg		----	----	----	----	<0.5
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser									
Weak Acid Dissociable Cyanide	----	1	mg/kg		----	----	----	----	<1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		----	----	----	----	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		----	----	----	----	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		----	----	----	----	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SB06_0.5	SB06_1.0	SB07_0.2	SB07_0.4	SB07_0.6
				Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit		ES2424909-017	ES2424909-018	ES2424909-019	ES2424909-020	ES2424909-021
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
beta-BHC	319-85-7	0.05	mg/kg		----	----	----	----	<0.05
gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg		----	----	----	----	<0.05
delta-BHC	319-86-8	0.05	mg/kg		----	----	----	----	<0.05
Heptachlor	76-44-8	0.05	mg/kg		----	----	----	----	<0.05
Aldrin	309-00-2	0.05	mg/kg		----	----	----	----	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	----	----	----	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		----	----	----	----	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	----	----	----	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		----	----	----	----	<0.05
Dieldrin	60-57-1	0.05	mg/kg		----	----	----	----	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg		----	----	----	----	<0.05
Endrin	72-20-8	0.05	mg/kg		----	----	----	----	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	----	----	----	<0.05
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		----	----	----	----	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		----	----	----	----	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	----	----	----	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	----	----	----	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		----	----	----	----	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		----	----	----	----	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		----	----	----	----	<0.2
Mirex	2385-85-5	0.20	mg/kg		----	----	----	----	<0.20
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		----	----	----	----	<0.05
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		----	----	----	----	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	----	----	----	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	----	----	----	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SB06_0.5	SB06_1.0	SB07_0.2	SB07_0.4	SB07_0.6
				Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit		ES2424909-017	ES2424909-018	ES2424909-019	ES2424909-020	ES2424909-021
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Monocrotophos	6923-22-4	0.2	mg/kg		----	----	----	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg		----	----	----	----	<0.05
Diazinon	333-41-5	0.05	mg/kg		----	----	----	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	----	----	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		----	----	----	----	<0.2
Malathion	121-75-5	0.05	mg/kg		----	----	----	----	<0.05
Fenthion	55-38-9	0.05	mg/kg		----	----	----	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	----	----	----	<0.05
Parathion	56-38-2	0.2	mg/kg		----	----	----	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	----	----	----	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	----	----	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	----	----	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		----	----	----	----	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		----	----	----	----	<0.05
Ethion	563-12-2	0.05	mg/kg		----	----	----	----	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		----	----	----	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		----	----	----	----	<0.05
EP068C: Triazines									
Atrazine	1912-24-9	0.05	mg/kg		----	----	----	----	<0.05
EP068D: Pyrethroids									
Bifenthrin	82657-04-3	0.05	mg/kg		----	----	----	----	<0.05
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		----	----	----	----	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		----	----	----	----	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg		----	----	----	----	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	----	----	----	<1
2-Nitrophenol	88-75-5	0.5	mg/kg		----	----	----	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SB06_0.5	SB06_1.0	SB07_0.2	SB07_0.4	SB07_0.6
				Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit		ES2424909-017	ES2424909-018	ES2424909-019	ES2424909-020	ES2424909-021
					Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued									
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		----	----	----	----	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		----	----	----	----	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		----	----	----	----	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		----	----	----	----	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		----	----	----	----	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		----	----	----	----	<0.5
Pentachlorophenol	87-86-5	2	mg/kg		----	----	----	----	<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	**2.2**	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	**0.6**	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		**1.0**	<0.5	<0.5	**2.0**	**0.9**
Pyrene	129-00-0	0.5	mg/kg		**1.2**	<0.5	<0.5	**2.4**	**1.1**
Benz(a)anthracene	56-55-3	0.5	mg/kg		**0.6**	<0.5	<0.5	**0.9**	**0.5**
Chrysene	218-01-9	0.5	mg/kg		**0.5**	<0.5	<0.5	**0.9**	**0.5**
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		**0.6**	<0.5	<0.5	**0.8**	**0.6**
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		**0.6**	<0.5	<0.5	**0.7**	**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		**4.5**	<0.5	<0.5	**10.5**	**4.1**
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		**0.7**	<0.5	<0.5	**0.9**	**0.6**
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**1.0**	**0.6**	**0.6**	**1.2**	**0.9**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SB06_0.5	SB06_1.0	SB07_0.2	SB07_0.4	SB07_0.6
				Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit		ES2424909-017	ES2424909-018	ES2424909-019	ES2424909-020	ES2424909-021
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
^ **Benzo(a)pyrene TEQ (LOR)**	----	0.5	mg/kg		**1.3**	**1.2**	**1.2**	**1.5**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		----	----	----	----	<10
C10 - C14 Fraction	----	50	mg/kg		----	----	----	----	<50
C15 - C28 Fraction	----	100	mg/kg		----	----	----	----	**170**
C29 - C36 Fraction	----	100	mg/kg		----	----	----	----	**230**
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		----	----	----	----	**400**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	----	----	----	<10
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		----	----	----	----	<10
>C10 - C16 Fraction	----	50	mg/kg		----	----	----	----	<50
>C16 - C34 Fraction	----	100	mg/kg		----	----	----	----	**330**
>C34 - C40 Fraction	----	100	mg/kg		----	----	----	----	**160**
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		----	----	----	----	**490**
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		----	----	----	----	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	----	----	----	<0.2
Toluene	108-88-3	0.5	mg/kg		----	----	----	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		----	----	----	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	----	----	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		----	----	----	----	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		----	----	----	----	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		----	----	----	----	<0.5
Naphthalene	91-20-3	1	mg/kg		----	----	----	----	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	----	----	**104**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SB06_0.5	SB06_1.0	SB07_0.2	SB07_0.4	SB07_0.6
				Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit		ES2424909-017	ES2424909-018	ES2424909-019	ES2424909-020	ES2424909-021
					Result	Result	Result	Result	Result
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	----	----	94.0
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	----	----	81.9
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		91.3	107	90.9	103	89.3
2-Chlorophenol-D4	93951-73-6	0.5	%		92.2	108	93.8	107	90.5
2.4.6-Tribromophenol	118-79-6	0.5	%		65.9	65.9	60.0	64.1	50.5
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		97.1	120	104	120	101
Anthracene-d10	1719-06-8	0.5	%		102	120	112	126	108
4-Terphenyl-d14	1718-51-0	0.5	%		95.8	119	105	117	100
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	----	----	----	96.8
Toluene-D8	2037-26-5	0.2	%		----	----	----	----	100
4-Bromofluorobenzene	460-00-4	0.2	%		----	----	----	----	105

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	SB08_0.7	SB09_0.5	SB09_0.8	SB10_0.2	SB10_0.5
			Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit	ES2424909-024	ES2424909-026	ES2424909-027	ES2424909-028	ES2424909-030
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	12.3	14.3	14.3	13.2	11.2
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	<5	<5	<5	5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	10	9	13	9	11
Copper	7440-50-8	5	mg/kg	13	14	29	16	22
Lead	7439-92-1	5	mg/kg	31	57	34	19	33
Nickel	7440-02-0	2	mg/kg	14	5	9	18	13
Zinc	7440-66-6	5	mg/kg	41	56	60	37	51
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	0.2
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	4.6	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	2.9	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	0.6	40.4	0.6	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	10.7	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	0.9	37.7	0.9	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	0.9	40.1	1.0	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	15.7	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	15.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	13.0	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4.8	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	12.3	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	5.1	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	1.4	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SB08_0.7	SB09_0.5	SB09_0.8	SB10_0.2	SB10_0.5
				Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit		ES2424909-024	ES2424909-026	ES2424909-027	ES2424909-028	ES2424909-030
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	**6.3**	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		**2.4**	**210**	**2.5**	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	**17.8**	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**17.8**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**17.8**	**1.2**	**1.2**	**1.2**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**105**	**104**	**90.8**	**105**	**105**
2-Chlorophenol-D4	93951-73-6	0.5	%		**107**	**104**	**91.7**	**111**	**108**
2.4.6-Tribromophenol	118-79-6	0.5	%		**66.1**	**69.9**	**41.3**	**67.5**	**68.4**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**117**	**115**	**101**	**118**	**113**
Anthracene-d10	1719-06-8	0.5	%		**125**	**115**	**110**	**113**	**113**
4-Terphenyl-d14	1718-51-0	0.5	%		**115**	**116**	**100**	**125**	**124**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	SB11_0.2	SB11_1.0	SB12_0.5	SB12_1.0	SB13_0.2
			Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit	ES2424909-031	ES2424909-033	ES2424909-035	ES2424909-036	ES2424909-037
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	0.1	%	----	----	10.0	----	----
Moisture Content	----	1.0	%	12.8	12.2	----	13.4	11.0
EG005(ED093)T: Total Metals by ICP-AES								
Barium	7440-39-3	10	mg/kg	----	----	----	130	----
Beryllium	7440-41-7	1	mg/kg	----	----	----	<1	----
Boron	7440-42-8	50	mg/kg	----	----	----	<50	----
Cobalt	7440-48-4	2	mg/kg	----	----	----	6	----
Manganese	7439-96-5	5	mg/kg	----	----	----	265	----
Selenium	7782-49-2	5	mg/kg	----	----	----	<5	----
Vanadium	7440-62-2	5	mg/kg	----	----	----	26	----
Arsenic	7440-38-2	5	mg/kg	<5	<5	----	5	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	----	<1	<1
Chromium	7440-47-3	2	mg/kg	8	12	----	14	3
Copper	7440-50-8	5	mg/kg	18	22	----	21	<5
Lead	7439-92-1	5	mg/kg	25	49	----	45	<5
Nickel	7440-02-0	2	mg/kg	14	8	----	10	<2
Zinc	7440-66-6	5	mg/kg	39	67	----	57	<5
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	0.3	----	0.4	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	----	----	<0.5	----
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser								
Weak Acid Dissociable Cyanide	----	1	mg/kg	----	----	----	<1	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	----	----	<0.1	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	----	----	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SB11_0.2	SB11_1.0	SB12_0.5	SB12_1.0	SB13_0.2
				Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit		ES2424909-031	ES2424909-033	ES2424909-035	ES2424909-036	ES2424909-037
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		----	----	----	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg		----	----	----	<0.05	----
gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg		----	----	----	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg		----	----	----	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg		----	----	----	<0.05	----
Aldrin	309-00-2	0.05	mg/kg		----	----	----	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		----	----	----	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg		----	----	----	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		----	----	----	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg		----	----	----	<0.05	----
Dieldrin	60-57-1	0.05	mg/kg		----	----	----	<0.05	----
4.4`-DDE	72-55-9	0.05	mg/kg		----	----	----	<0.05	----
Endrin	72-20-8	0.05	mg/kg		----	----	----	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	----	----	<0.05	----
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		----	----	----	<0.05	----
4.4`-DDD	72-54-8	0.05	mg/kg		----	----	----	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	----	----	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	----	----	<0.05	----
4.4`-DDT	50-29-3	0.2	mg/kg		----	----	----	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg		----	----	----	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg		----	----	----	<0.2	----
Mirex	2385-85-5	0.20	mg/kg		----	----	----	<0.20	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		----	----	----	<0.05	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-29-3	0.05	mg/kg		----	----	----	<0.05	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	----	----	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	SB11_0.2	SB11_1.0	SB12_0.5	SB12_1.0	SB13_0.2
			Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit	ES2424909-031	ES2424909-033	ES2424909-035	ES2424909-036	ES2424909-037
				Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued								
Demeton-S-methyl	919-86-8	0.05	mg/kg	----	----	----	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg	----	----	----	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg	----	----	----	<0.05	----
Diazinon	333-41-5	0.05	mg/kg	----	----	----	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	----	----	----	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg	----	----	----	<0.2	----
Malathion	121-75-5	0.05	mg/kg	----	----	----	<0.05	----
Fenthion	55-38-9	0.05	mg/kg	----	----	----	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	----	----	----	<0.05	----
Parathion	56-38-2	0.2	mg/kg	----	----	----	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	----	----	----	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	----	----	----	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	----	----	----	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg	----	----	----	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg	----	----	----	<0.05	----
Ethion	563-12-2	0.05	mg/kg	----	----	----	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg	----	----	----	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg	----	----	----	<0.05	----
EP068C: Triazines								
Atrazine	1912-24-9	0.05	mg/kg	----	----	----	<0.05	----
EP068D: Pyrethroids								
Bifenthrin	82657-04-3	0.05	mg/kg	----	----	----	<0.05	----
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	----	----	----	<0.5	----
2-Chlorophenol	95-57-8	0.5	mg/kg	----	----	----	<0.5	----
2-Methylphenol	95-48-7	0.5	mg/kg	----	----	----	<0.5	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg	----	----	----	<1	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	SB11_0.2	SB11_1.0	SB12_0.5	SB12_1.0	SB13_0.2
			Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit	ES2424909-031	ES2424909-033	ES2424909-035	ES2424909-036	ES2424909-037
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued								
2-Nitrophenol	88-75-5	0.5	mg/kg	----	----	----	<0.5	----
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	----	----	----	<0.5	----
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	----	----	----	<0.5	----
2.6-Dichlorophenol	87-65-0	0.5	mg/kg	----	----	----	<0.5	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	----	----	----	<0.5	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	----	----	----	<0.5	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	----	----	----	<0.5	----
Pentachlorophenol	87-86-5	2	mg/kg	----	----	----	<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	**0.9**	<0.5	**0.7**	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	**0.9**	<0.5	**0.7**	<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	**0.7**	<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	**0.6**	<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	**3.1**	<0.5	**1.4**	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	**0.7**	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SB11_0.2	SB11_1.0	SB12_0.5	SB12_1.0	SB13_0.2
				Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit		ES2424909-031	ES2424909-033	ES2424909-035	ES2424909-036	ES2424909-037
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**1.0**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.3**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		----	----	----	<10	----
C10 - C14 Fraction	----	50	mg/kg		----	----	----	<50	----
C15 - C28 Fraction	----	100	mg/kg		----	----	----	<100	----
C29 - C36 Fraction	----	100	mg/kg		----	----	----	<100	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		----	----	----	<50	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	----	----	<10	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	----	----	<10	----
>C10 - C16 Fraction	----	50	mg/kg		----	----	----	<50	----
>C16 - C34 Fraction	----	100	mg/kg		----	----	----	<100	----
>C34 - C40 Fraction	----	100	mg/kg		----	----	----	<100	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		----	----	----	<50	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		----	----	----	<50	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	----	----	<0.2	----
Toluene	108-88-3	0.5	mg/kg		----	----	----	<0.5	----
Ethylbenzene	100-41-4	0.5	mg/kg		----	----	----	<0.5	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	----	----	<0.5	----
ortho-Xylene	95-47-6	0.5	mg/kg		----	----	----	<0.5	----
^ Sum of BTEX	----	0.2	mg/kg		----	----	----	<0.2	----
^ Total Xylenes	----	0.5	mg/kg		----	----	----	<0.5	----
Naphthalene	91-20-3	1	mg/kg		----	----	----	<1	----
EP066S: PCB Surrogate									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SB11_0.2	SB11_1.0	SB12_0.5	SB12_1.0	SB13_0.2
				Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00
Compound	CAS Number	LOR	Unit		ES2424909-031	ES2424909-033	ES2424909-035	ES2424909-036	ES2424909-037
					Result	Result	Result	Result	Result
EP066S: PCB Surrogate - Continued									
Decachlorobiphenyl	2051-24-3	0.1	%		----	----	----	109	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	----	90.7	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	----	86.8	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		108	109	114	94.2	104
2-Chlorophenol-D4	93951-73-6	0.5	%		114	111	118	97.4	112
2.4.6-Tribromophenol	118-79-6	0.5	%		63.4	72.5	67.8	65.1	48.0
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		118	116	120	103	121
Anthracene-d10	1719-06-8	0.5	%		112	118	117	113	116
4-Terphenyl-d14	1718-51-0	0.5	%		122	121	125	103	127
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		----	----	----	106	----
Toluene-D8	2037-26-5	0.2	%		----	----	----	111	----
4-Bromofluorobenzene	460-00-4	0.2	%		----	----	----	111	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	SB13_0.5	SB13_1.9	QC01	QC03	QC06 TB
			Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	29-Jul-2024 00:00
Compound	CAS Number	LOR	Unit	ES2424909-038	ES2424909-040	ES2424909-041	ES2424909-042	ES2424909-044
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**13.8**	**16.2**	**12.6**	**13.5**	**----**
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	**6**	**5**	<5	<5	**----**
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	**----**
Chromium	7440-47-3	2	mg/kg	**24**	**12**	**7**	**13**	**----**
Copper	7440-50-8	5	mg/kg	**11**	**11**	**13**	**30**	**----**
Lead	7439-92-1	5	mg/kg	**14**	**16**	**22**	**35**	**----**
Nickel	7440-02-0	2	mg/kg	**4**	**3**	**7**	**12**	**----**
Zinc	7440-66-6	5	mg/kg	**13**	**14**	**46**	**60**	**----**
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	**0.2**	**----**
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**----**
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**----**
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**----**
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**----**
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**----**
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**----**
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**----**
Pyrene	129-00-0	0.5	mg/kg	**1.6**	<0.5	<0.5	<0.5	**----**
Benz(a)anthracene	56-55-3	0.5	mg/kg	**0.9**	<0.5	<0.5	<0.5	**----**
Chrysene	218-01-9	0.5	mg/kg	**1.0**	<0.5	<0.5	<0.5	**----**
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	**2.2**	<0.5	<0.5	<0.5	**----**
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	**0.6**	<0.5	<0.5	<0.5	**----**
Benzo(a)pyrene	50-32-8	0.5	mg/kg	**1.8**	<0.5	<0.5	<0.5	**----**
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	**0.7**	<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	**----**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SB13_0.5	SB13_1.9	QC01	QC03	QC06 TB
				Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	29-Jul-2024 00:00
Compound	CAS Number	LOR	Unit		ES2424909-038	ES2424909-040	ES2424909-041	ES2424909-042	ES2424909-044
					Result	Result	Result	Result	Result
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		1.1	<0.5	<0.5	<0.5	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		9.9	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		2.3	<0.5	<0.5	<0.5	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		2.5	0.6	0.6	0.6	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		2.8	1.2	1.2	1.2	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		----	----	----	----	<10
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		----	----	----	----	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		----	----	----	----	<10
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		----	----	----	----	<0.2
Toluene	108-88-3	0.5	mg/kg		----	----	----	----	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		----	----	----	----	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		----	----	----	----	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		----	----	----	----	<0.5
^ Sum of BTEX	----	0.2	mg/kg		----	----	----	----	<0.2
^ Total Xylenes	----	0.5	mg/kg		----	----	----	----	<0.5
Naphthalene	91-20-3	1	mg/kg		----	----	----	----	<1
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		111	111	110	106	----
2-Chlorophenol-D4	93951-73-6	0.5	%		114	112	112	108	----
2.4.6-Tribromophenol	118-79-6	0.5	%		71.4	72.6	63.6	67.3	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		118	117	117	114	----
Anthracene-d10	1719-06-8	0.5	%		117	120	117	113	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	SB13_0.5	SB13_1.9	QC01	QC03	QC06 TB
				Sampling date / time	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	30-Jul-2024 00:00	29-Jul-2024 00:00
Compound	CAS Number	LOR	Unit		ES2424909-038	ES2424909-040	ES2424909-041	ES2424909-042	ES2424909-044
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates - Continued									
4-Terphenyl-d14	1718-51-0	0.5	%		**127**	**125**	**123**	**124**	**----**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**----**	**----**	**----**	**----**	**104**
Toluene-D8	2037-26-5	0.2	%		**----**	**----**	**----**	**----**	**107**
4-Bromofluorobenzene	460-00-4	0.2	%		**----**	**----**	**----**	**----**	**110**

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC05	----	----	----	----
				Sampling date / time	30-Jul-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2424909-043	--------	--------	--------	--------
					Result	----	----	----	----
EG020T: Total Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	1.0	µg/L		<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L		<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L		<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L		<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L		<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L		<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L		<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L		<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L		<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L		<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L		<1.0	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	1.0	µg/L		<1.0	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	1.0	µg/L		<1.0	----	----	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	µg/L		<0.5	----	----	----	----

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	QC05	----	----	----	----
				Sampling date / time	30-Jul-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2424909-043	--------	--------	--------	--------
					Result	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	µg/L		<0.5	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		**22.8**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		**47.0**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	1.0	%		**52.1**	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		**50.7**	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%		**59.8**	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		**63.7**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	63	125
Toluene-D8	2037-26-5	67	124
4-Bromofluorobenzene	460-00-4	66	131

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2.4.6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112

QUALITY CONTROL REPORT

Work Order	: **ES2424909**	Page	: 1 of 18
Client	: **ARC ENVIRONMENTAL**	Laboratory	: Environmental Division Sydney
Contact	: DECLAN TENNENT	Contact	: Katie Davis
Address	: Suite 309, 546 Collins St MELBOURNE 3000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: 2407374	Date Samples Received	: 30-Jul-2024
Order number	: ----	Date Analysis Commenced	: 31-Jul-2024
C-O-C number	: ----	Issue Date	: 06-Aug-2024
Sampler	: DT		
Site	: GWS Giants		
Quote number	: EM23ARCENV0001 VIC Custom Quote		
No. of samples received	: 44		
No. of samples analysed	: 31		

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

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, 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*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic 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
* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

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: 5961662)									
ES2424499-003	Anonymous	EG005T: Beryllium	7440-41-7	1	mg/kg	2	2	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	210	250	19.6	0% - 20%
		EG005T: Chromium	7440-47-3	2	mg/kg	31	32	0.0	0% - 50%
		EG005T: Cobalt	7440-48-4	2	mg/kg	12	8	38.4	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	28	25	10.9	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	11	10	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	24	25	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	16	14	9.4	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	668	# 864	25.5	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	32	32	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	54	52	4.4	0% - 50%
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
ES2424909-016	SB06_0.2	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	40	40	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	6	8	19.9	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	2	4	54.9	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	5	7	38.0	No Limit
		EG005T: Arsenic	7440-38-2	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: 5961662) - continued									
ES2424909-016	SB06_0.2	EG005T: Copper	7440-50-8	5	mg/kg	9	11	19.8	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	25	22	11.4	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	82	65	23.0	0% - 50%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	13	18	29.1	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	28	34	18.7	No Limit
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 5961664)									
ES2424909-030	SB10_0.5	EG005T: Beryllium	7440-41-7	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Barium	7440-39-3	10	mg/kg	80	70	17.1	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	11	12	11.7	No Limit
		EG005T: Cobalt	7440-48-4	2	mg/kg	5	6	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	13	17	26.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	22	25	13.8	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	33	28	14.9	No Limit
		EG005T: Manganese	7439-96-5	5	mg/kg	183	194	5.7	0% - 20%
		EG005T: Selenium	7782-49-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Vanadium	7440-62-2	5	mg/kg	20	21	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	51	52	0.0	0% - 50%
		EG005T: Boron	7440-42-8	50	mg/kg	<50	<50	0.0	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5961666)									
ES2424909-002	SB01_0.5	EA055: Moisture Content	----	0.1 (1.0)*	%	12.2	11.9	3.0	0% - 50%
ES2424909-019	SB07_0.2	EA055: Moisture Content	----	0.1 (1.0)*	%	12.7	12.4	2.7	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5961667)									
ES2424909-033	SB11_1.0	EA055: Moisture Content	----	0.1 (1.0)*	%	12.2	13.5	10.5	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 5964214)									
ES2424846-015	Anonymous	EA055: Moisture Content	----	0.1 (1.0)*	%	7.8	10.5	28.6	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5961663)									
ES2424499-003	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2424909-016	SB06_0.2	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5961665)									
ES2424909-030	SB10_0.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.2	<0.1	82.6	No Limit
EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 5964132)									
ES2424742-001	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EW2403573-001	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	0.5 (----)*	mg/kg	----	----	----	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 (%)*
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser (QC Lot: 5963623)									
ES2424909-002	SB01_0.5	EK028SF: Weak Acid Dissociable Cyanide	----	1	mg/kg	<1	<1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 5960564)									
ES2424909-002	SB01_0.5	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 5960562)									
ES2424909-002	SB01_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 - (Lindane)	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 5960562)									
ES2424909-002	SB01_0.5	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 5960562) - continued									
ES2424909-002	SB01_0.5	EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068C: Triazines (QC Lot: 5960562)									
ES2424909-002	SB01_0.5	EP068: Atrazine	1912-24-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 5960563)									
ES2424909-017	SB06_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
		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
ES2424909-002	SB01_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
		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: 5960569)									
ES2424909-028	SB10_0.2	EP075(SIM): Phenol	108-95-2	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: 5960569) - continued									
ES2424909-028	SB10_0.2	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: 5960563)									
ES2424909-017	SB06_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	0.6	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	1.0	0.8	24.2	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	1.2	0.8	35.9	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	0.6	<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	0.6	<0.5	21.6	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	0.6	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	4.5	2.2	68.7	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	0.7	<0.5	36.7	No Limit
ES2424909-002	SB01_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

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: 5960563) - continued									
ES2424909-002	SB01_0.5	EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 5960569)									
ES2424909-028	SB10_0.2	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5960565)									
ES2424909-002	SB01_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

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 (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5960565) - continued									
ES2424909-002	SB01_0.5	EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 5960769)									
ES2424909-002	SB01_0.5	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ME2401220-011	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5960565)									
ES2424909-002	SB01_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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 5960769)									
ES2424909-002	SB01_0.5	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ME2401220-011	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080: BTEXN (QC Lot: 5960769)									
ES2424909-002	SB01_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
		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
ME2401220-011	Anonymous	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

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: 5962965)									
ES2424900-024	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	0.005	0.005	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.010	0.011	0.0	0% - 50%
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.013	0.014	0.0	0% - 50%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.004	0.004	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.003	0.003	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.009	0.010	13.9	No Limit
EW2403505-003	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	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: 5962965) - continued									
EW2403505-003	Anonymous	EG020A-T: Arsenic	7440-38-2	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: Copper	7440-50-8	0.001	mg/L	0.067	0.068	0.0	0% - 20%
		EG020A-T: Lead	7439-92-1	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	0.016	0.017	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 5962927)									
ES2424900-024	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2424958-004	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	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: 5961662)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	88.1	88.0	113
EG005T: Barium	7440-39-3	10	mg/kg	<10	90.5 mg/kg	95.4	65.0	136
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	0.5 mg/kg	87.7	70.0	130
EG005T: Boron	7440-42-8	50	mg/kg	<50	----	----	----	----
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	91.3	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	103	68.0	132
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	10.4 mg/kg	86.3	83.0	117
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	92.1	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	89.9	82.0	119
EG005T: Manganese	7439-96-5	5	mg/kg	<5	534 mg/kg	94.3	83.0	117
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	87.6	80.0	120
EG005T: Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	58.6 mg/kg	101	75.0	125
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	78.9	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5961664)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	90.2	88.0	113
EG005T: Barium	7440-39-3	10	mg/kg	<10	90.5 mg/kg	100.0	65.0	136
EG005T: Beryllium	7440-41-7	1	mg/kg	<1	0.5 mg/kg	97.6	70.0	130
EG005T: Boron	7440-42-8	50	mg/kg	<50	----	----	----	----
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	95.3	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	106	68.0	132
EG005T: Cobalt	7440-48-4	2	mg/kg	<2	10.4 mg/kg	92.3	83.0	117
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	100	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	93.2	82.0	119
EG005T: Manganese	7439-96-5	5	mg/kg	<5	534 mg/kg	100	83.0	117
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	93.3	80.0	120
EG005T: Selenium	7782-49-2	5	mg/kg	<5	----	----	----	----
EG005T: Vanadium	7440-62-2	5	mg/kg	<5	58.6 mg/kg	107	75.0	125
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	80.1	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5961663)								

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
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5961663) - continued								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	87.0	70.0	125
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5961665)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	87.0	70.0	125
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 5964132)								
EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	20 mg/kg	102	68.0	114
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser (QCLot: 5963623)								
EK028SF: Weak Acid Dissociable Cyanide	----	1	mg/kg	<1	40 mg/kg	105	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5960564)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	95.0	62.0	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 5960562)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	80.3	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	90.8	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	89.6	67.0	119
EP068: gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	88.0	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	90.2	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	80.2	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	82.5	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	81.4	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	90.4	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	90.5	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	86.7	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	87.4	66.0	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	89.2	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	82.6	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	89.6	69.0	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	82.8	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	87.8	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	80.8	62.0	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	80.6	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	79.7	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	80.6	54.0	130
EP068: Mirex	2385-85-5	----	mg/kg	----	0.5 mg/kg	81.7	65.0	129
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5960562)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	101	59.0	119

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
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5960562) - continued								
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	77.2	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	77.8	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	88.6	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	92.6	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	85.3	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	79.9	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	78.0	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	82.5	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	77.3	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	77.3	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	86.0	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	79.1	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	86.1	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	84.3	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	89.3	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	80.7	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	80.9	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	55.9	41.0	123
EP068C: Triazines (QCLot: 5960562)								
EP068: Atrazine	1912-24-9	0.05	mg/kg	<0.05	0.5 mg/kg	90.2	68.0	116
EP068D: Pyrethroids (QCLot: 5960562)								
EP068: Bifenthrin	82657-04-3	----	mg/kg	----	0.5 mg/kg	91.0	66.0	128
EP075(SIM)A: Phenolic Compounds (QCLot: 5960563)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	6 mg/kg	90.8	71.0	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	6 mg/kg	96.0	72.0	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	6 mg/kg	92.0	71.0	123
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	12 mg/kg	95.4	67.0	127
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	6 mg/kg	75.0	54.0	114
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	6 mg/kg	89.8	68.0	126
EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	6 mg/kg	94.7	66.0	120
EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	6 mg/kg	99.6	70.0	120
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	6 mg/kg	87.2	70.0	116
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	6 mg/kg	86.0	54.0	114
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	6 mg/kg	90.5	60.0	114

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
EP075(SIM)A: Phenolic Compounds (QCLot: 5960563) - continued								
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	12 mg/kg	39.2	10.0	80.0
EP075(SIM)A: Phenolic Compounds (QCLot: 5960569)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	6 mg/kg	97.4	71.0	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	6 mg/kg	99.0	72.0	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	6 mg/kg	92.8	71.0	123
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	12 mg/kg	93.0	67.0	127
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	6 mg/kg	61.0	54.0	114
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	6 mg/kg	90.0	68.0	126
EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	6 mg/kg	92.1	66.0	120
EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	6 mg/kg	93.4	70.0	120
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	6 mg/kg	89.9	70.0	116
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	6 mg/kg	83.2	54.0	114
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	6 mg/kg	77.8	60.0	114
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	12 mg/kg	21.4	10.0	80.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5960563)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	93.5	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	85.0	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	93.0	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	91.5	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	96.4	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	100	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	97.3	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	98.2	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	89.7	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	96.2	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	89.3	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	101	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	89.3	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	99.8	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	94.1	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	85.9	63.0	121
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5960569)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	95.4	77.0	125

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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5960569) - continued								
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	86.7	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	92.2	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	92.8	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	94.1	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	93.6	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	93.8	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	92.0	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	95.9	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	94.7	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	113	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	99.4	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	87.8	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	91.9	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	86.0	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	82.1	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5960565)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	89.5	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	93.0	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	96.1	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5960769)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	88.3	72.2	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5960565)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	93.4	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	93.0	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	98.4	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5960769)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	86.8	72.4	133
EP080: BTEXN (QCLot: 5960769)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	93.3	76.0	124
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	92.6	78.5	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	93.6	77.4	121
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	97.2	78.2	121
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	104	81.3	121

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
EP080: BTEXN (QCLot: 5960769) - continued								
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	94.2	78.8	122

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
EG020T: Total Metals by ICP-MS (QCLot: 5962965)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	101	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	102	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	97.8	86.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	101	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	99.0	85.0	115
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	95.0	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	95.5	79.0	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5962927)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	86.7	77.0	111
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5960570)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	74.9	50.0	94.0
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	74.9	63.6	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	79.3	62.2	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	69.9	63.9	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	76.1	62.6	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	75.3	64.3	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	67.5	63.6	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	68.7	63.1	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	74.6	64.1	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	85.9	62.5	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	1	µg/L	<1.0	5 µg/L	70.8	61.7	119
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	73.8	63.0	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	72.0	63.3	117
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	68.7	59.9	118
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	72.6	61.2	117
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	81.2	59.1	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**

				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: 5961662)							
ES2424499-003	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	89.6	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	91.0	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	88.9	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	93.9	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	91.5	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	94.7	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	83.9	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 5961664)							
ES2424909-030	SB10_0.5	EG005T: Arsenic	7440-38-2	50 mg/kg	89.2	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	91.7	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	89.1	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	94.8	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	86.1	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	104	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	77.7	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5961663)							
ES2424499-003	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	95.0	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5961665)							
ES2424909-030	SB10_0.5	EG035T: Mercury	7439-97-6	5 mg/kg	93.6	70.0	130
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 5964132)							
ES2424909-002	SB01_0.5	EG048G: Hexavalent Chromium	18540-29-9	20 mg/kg	70.4	70.0	130
ES2424909-002	SB01_0.5	EG048G: Hexavalent Chromium	18540-29-9	20 mg/kg	74.0	70.0	130
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser (QCLot: 5963623)							
ES2424909-002	SB01_0.5	EK028SF: Weak Acid Dissociable Cyanide	----	40 mg/kg	110	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 5960564)							
ES2424909-002	SB01_0.5	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	96.9	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 5960562)							
ES2424909-002	SB01_0.5	EP068: gamma-BHC - (Lindane)	58-89-9	0.5 mg/kg	96.5	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	83.0	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	87.2	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	94.0	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	97.2	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	92.3	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5960562)							

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 5960562) - continued							
ES2424909-002	SB01_0.5	EP068: Diazinon	333-41-5	0.5 mg/kg	87.0	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	83.7	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	77.6	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	87.5	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	80.6	70.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 5960563)							
ES2424909-002	SB01_0.5	EP075(SIM): Phenol	108-95-2	10 mg/kg	96.9	70.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	103	70.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	83.2	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	92.9	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	29.7	20.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 5960569)							
ES2424909-028	SB10_0.2	EP075(SIM): Phenol	108-95-2	10 mg/kg	97.5	70.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	99.8	70.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	75.3	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	87.1	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	22.1	20.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5960563)							
ES2424909-002	SB01_0.5	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	104	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	106	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 5960569)							
ES2424909-028	SB10_0.2	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	94.4	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	98.1	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5960565)							
ES2424909-002	SB01_0.5	EP071: C10 - C14 Fraction	----	480 mg/kg	102	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	113	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	128	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 5960769)							
ES2424909-002	SB01_0.5	EP080: C6 - C9 Fraction	----	32.5 mg/kg	76.5	60.4	142
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5960565)							
ES2424909-002	SB01_0.5	EP071: >C10 - C16 Fraction	----	860 mg/kg	110	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	118	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	132	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 5960769)							
ES2424909-002	SB01_0.5	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	75.4	61.1	142
EP080: BTEXN (QCLot: 5960769)							

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EP080: BTEXN (QCLot: 5960769) - continued							
ES2424909-002	SB01_0.5	EP080: Benzene	71-43-2	2.5 mg/kg	81.2	62.1	122
		EP080: Toluene	108-88-3	2.5 mg/kg	79.5	66.6	119
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	80.0	67.4	123
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	80.6	66.4	121
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	88.0	70.7	121
		EP080: Naphthalene	91-20-3	2.5 mg/kg	88.3	61.1	115

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EG020T: Total Metals by ICP-MS (QCLot: 5962965)							
ES2424900-023	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	98.1	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	99.1	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	94.9	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	101	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	94.1	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	99.6	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 5962927)							
ES2424900-023	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	73.8	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2424909**	Page	: 1 of 10
Client	: **ARC ENVIRONMENTAL**	Laboratory	: Environmental Division Sydney
Contact	: DECLAN TENNENT	Telephone	: +61-2-8784 8555
Project	: 2407374	Date Samples Received	: 30-Jul-2024
Site	: GWS Giants	Issue Date	: 06-Aug-2024
Sampler	: DT	No. of samples received	: 44
Order number	: ----	No. of samples analysed	: 31

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

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

Outliers : Frequency of Quality Control Samples

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

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	ES2424499--003	Anonymous	**Manganese**	7439-96-5	25.5 %	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							
EP075(SIM)T: PAH Surrogates	ES2424909-001	SB01_0.2	**2-Fluorobiphenyl**	321-60-8	125 %	70.0-122 %	**Recovery greater than upper data quality objective**
EP075(SIM)T: PAH Surrogates	ES2424909-010	SB04_0.2	**2-Fluorobiphenyl**	321-60-8	123 %	70.0-122 %	**Recovery greater than upper data quality objective**

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)						
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	4	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)						
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	4	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

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

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

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

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

Matrix: **SOIL**

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

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

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055)								
SB01_0.2,	SB01_0.5,	**30-Jul-2024**	**----**	----	----	**01-Aug-2024**	13-Aug-2024	✓
SB02_0.5,	SB03_0.2,							
SB03_1.0,	SB04_0.2,							
SB04_1.0,	SB05_0.2,							
SB05_0.5,	SB06_0.2,							
SB06_0.5,	SB06_1.0,							
SB07_0.2,	SB07_0.4,							
SB07_0.6,	SB08_0.7,							
SB09_0.5,	SB09_0.8,							
SB10_0.2,	SB10_0.5,							
SB11_0.2,	SB11_1.0,							
SB12_1.0,	SB13_0.2,							
SB13_0.5,	SB13_1.9,							
QC01,	QC03							
Soil Glass Jar - Unpreserved (EA055)								
SB12_0.5		**30-Jul-2024**	**----**	----	----	**02-Aug-2024**	13-Aug-2024	✓
EG005(ED093)T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)								
SB01_0.2,	SB01_0.5,	**30-Jul-2024**	**01-Aug-2024**	26-Jan-2025	✓	**01-Aug-2024**	26-Jan-2025	✓
SB02_0.5,	SB03_0.2,							
SB03_1.0,	SB04_0.2,							
SB04_1.0,	SB05_0.2,							
SB05_0.5,	SB06_0.2,							
SB06_0.5,	SB06_1.0,							
SB07_0.2,	SB07_0.4,							
SB07_0.6,	SB08_0.7,							
SB09_0.5,	SB09_0.8,							
SB10_0.2,	SB10_0.5,							
SB11_0.2,	SB11_1.0,							
SB12_1.0,	SB13_0.2,							
SB13_0.5,	SB13_1.9,							
QC01,	QC03							

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG035T: Total Recoverable Mercury by FIMS								
Soil Glass Jar - Unpreserved (EG035T)								
SB01_0.2,	SB01_0.5,	**30-Jul-2024**	**01-Aug-2024**	27-Aug-2024	✓	**02-Aug-2024**	27-Aug-2024	✓
SB02_0.5,	SB03_0.2,							
SB03_1.0,	SB04_0.2,							
SB04_1.0,	SB05_0.2,							
SB05_0.5,	SB06_0.2,							
SB06_0.5,	SB06_1.0,							
SB07_0.2,	SB07_0.4,							
SB07_0.6,	SB08_0.7,							
SB09_0.5,	SB09_0.8,							
SB10_0.2,	SB10_0.5,							
SB11_0.2,	SB11_1.0,							
SB12_1.0,	SB13_0.2,							
SB13_0.5,	SB13_1.9,							
QC01,	QC03							
EG048: Hexavalent Chromium (Alkaline Digest)								
Soil Glass Jar - Unpreserved (EG048G)								
SB01_0.5,	SB06_0.2,	**30-Jul-2024**	**02-Aug-2024**	27-Aug-2024	✓	**02-Aug-2024**	09-Aug-2024	✓
SB07_0.6,	SB12_1.0							
EK028SF: Weak Acid Dissociable CN by Segmented Flow Analyser								
Soil Glass Jar - Unpreserved (EK028SF)								
SB01_0.5,	SB06_0.2,	**30-Jul-2024**	**01-Aug-2024**	13-Aug-2024	✓	**02-Aug-2024**	15-Aug-2024	✓
SB07_0.6,	SB12_1.0							
EP066: Polychlorinated Biphenyls (PCB)								
Soil Glass Jar - Unpreserved (EP066)								
SB01_0.5,	SB06_0.2,	**30-Jul-2024**	**01-Aug-2024**	13-Aug-2024	✓	**02-Aug-2024**	10-Sep-2024	✓
SB07_0.6,	SB12_1.0							
EP068A: Organochlorine Pesticides (OC)								
Soil Glass Jar - Unpreserved (EP068)								
SB01_0.5,	SB06_0.2,	**30-Jul-2024**	**01-Aug-2024**	13-Aug-2024	✓	**03-Aug-2024**	10-Sep-2024	✓
SB07_0.6,	SB12_1.0							
EP068B: Organophosphorus Pesticides (OP)								
Soil Glass Jar - Unpreserved (EP068)								
SB01_0.5,	SB06_0.2,	**30-Jul-2024**	**01-Aug-2024**	13-Aug-2024	✓	**03-Aug-2024**	10-Sep-2024	✓
SB07_0.6,	SB12_1.0							
EP068C: Triazines								
Soil Glass Jar - Unpreserved (EP068)								
SB01_0.5,	SB06_0.2,	**30-Jul-2024**	**01-Aug-2024**	13-Aug-2024	✓	**03-Aug-2024**	10-Sep-2024	✓
SB07_0.6,	SB12_1.0							

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
EP068D: Pyrethroids							
Soil Glass Jar - Unpreserved (EP068)							
SB01_0.5, SB06_0.2, SB07_0.6, SB12_1.0	**30-Jul-2024**	**01-Aug-2024**	13-Aug-2024	✓	**03-Aug-2024**	10-Sep-2024	✓
EP075(SIM)A: Phenolic Compounds							
Soil Glass Jar - Unpreserved (EP075(SIM))							
SB01_0.5, SB06_0.2	**30-Jul-2024**	**01-Aug-2024**	13-Aug-2024	✓	**02-Aug-2024**	10-Sep-2024	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
SB07_0.6, SB12_1.0	**30-Jul-2024**	**01-Aug-2024**	13-Aug-2024	✓	**03-Aug-2024**	10-Sep-2024	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
SB01_0.2, SB01_0.5, SB02_0.5, SB03_0.2, SB03_1.0, SB04_0.2, SB04_1.0, SB05_0.2, SB05_0.5, SB06_0.2, SB10_0.2, SB10_0.5, SB11_0.2, SB11_1.0, SB12_0.5, SB13_0.2, SB13_0.5, SB13_1.9, QC01, QC03	**30-Jul-2024**	**01-Aug-2024**	13-Aug-2024	✓	**02-Aug-2024**	10-Sep-2024	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
SB06_1.0, SB07_0.2, SB07_0.4, SB07_0.6, SB08_0.7, SB09_0.5, SB09_0.8, SB12_1.0	**30-Jul-2024**	**01-Aug-2024**	13-Aug-2024	✓	**03-Aug-2024**	10-Sep-2024	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
SB06_0.5	**30-Jul-2024**	**01-Aug-2024**	13-Aug-2024	✓	**05-Aug-2024**	10-Sep-2024	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
QC06 - TB	**29-Jul-2024**	**31-Jul-2024**	12-Aug-2024	✓	**31-Jul-2024**	12-Aug-2024	✓
Soil Glass Jar - Unpreserved (EP071)							
SB01_0.5, SB06_0.2, SB07_0.6, SB12_1.0	**30-Jul-2024**	**01-Aug-2024**	13-Aug-2024	✓	**03-Aug-2024**	10-Sep-2024	✓
Soil Glass Jar - Unpreserved (EP080)							
SB01_0.5, SB06_0.2, SB07_0.6, SB12_1.0	**30-Jul-2024**	**31-Jul-2024**	13-Aug-2024	✓	**31-Jul-2024**	13-Aug-2024	✓

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) QC06 - TB	**29-Jul-2024**	**31-Jul-2024**	12-Aug-2024	✓	**31-Jul-2024**	12-Aug-2024	✓
Soil Glass Jar - Unpreserved (EP071) SB01_0.5, SB06_0.2, SB07_0.6, SB12_1.0	**30-Jul-2024**	**01-Aug-2024**	13-Aug-2024	✓	**03-Aug-2024**	10-Sep-2024	✓
Soil Glass Jar - Unpreserved (EP080) SB01_0.5, SB06_0.2, SB07_0.6, SB12_1.0	**30-Jul-2024**	**31-Jul-2024**	13-Aug-2024	✓	**31-Jul-2024**	13-Aug-2024	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) QC06 - TB	**29-Jul-2024**	**31-Jul-2024**	12-Aug-2024	✓	**31-Jul-2024**	12-Aug-2024	✓
Soil Glass Jar - Unpreserved (EP080) SB01_0.5, SB06_0.2, SB07_0.6, SB12_1.0	**30-Jul-2024**	**31-Jul-2024**	13-Aug-2024	✓	**31-Jul-2024**	13-Aug-2024	✓

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 Plastic Bottle - Nitric Acid; Unfiltered (EG020A-T) QC05	**30-Jul-2024**	**01-Aug-2024**	26-Jan-2025	✓	**01-Aug-2024**	26-Jan-2025	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG035T) QC05	**30-Jul-2024**	**----**	----	**----**	**05-Aug-2024**	27-Aug-2024	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) QC05	**30-Jul-2024**	**01-Aug-2024**	06-Aug-2024	✓	**02-Aug-2024**	10-Sep-2024	✓

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)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	4	39	**10.26**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	3	29	**10.34**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	5	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	4	**25.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	29	**10.34**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	29	**10.34**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	4	**25.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
WAD Cyanide by Segmented Flow Analyser	EK028SF	1	4	**25.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
WAD Cyanide by Segmented Flow Analyser	EK028SF	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
WAD Cyanide by Segmented Flow Analyser	EK028SF	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	11	**18.18**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	5	**20.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	29	**6.90**	**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							
Total Metals by ICP-AES	EG005T	2	29	**6.90**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	4	**25.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	11	**9.09**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
WAD Cyanide by Segmented Flow Analyser	EK028SF	1	4	**25.00**	**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)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	4	**0.00**	**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	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	4	**25.00**	**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	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	4	**25.00**	**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	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	4	**0.00**	**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	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
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).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (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)
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).
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).
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.

Analytical Methods	Method	Matrix	Method Descriptions
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 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).
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)

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.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
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.

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Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	T: +61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

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+64 9 526 4551	+64 9 525 0568	+64 3 343 5201	+64 9 525 0568
IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Sample Receipt Advice

Company name: ARC Environmental Pty Ltd
Contact name: Declan Tennent
Project name: GWS GIANTS
Project ID: 2407374
Turnaround time: 5 Day
Date/Time received Jul 31, 2024 12:34 PM
Eurofins reference 1124129

Sample Information

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

Notes

Contact

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

Karl Bulow on phone : or by email: KarlBulow@eurofins.com

Results will be delivered electronically via email to Declan Tennent - declan@arcenvironmental.com.au.

Note: A copy of these results will also be delivered to the general ARC Environmental Pty Ltd email address.

Global Leader - Results you can trust

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

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NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
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IANZ# 1327	IANZ# 1308	IANZ# 1290	IANZ# 1402

Company Name: ARC Environmental Pty Ltd
Address: 40 Heller St
Brunswick West
VIC 3055

Project Name: GWS GIANTS
Project ID: 2407374

Order No.:
Report #: 1124129
Phone: 03 8383 1950
Fax:

Received: Jul 31, 2024 12:34 PM
Due: Aug 7, 2024
Priority: 5 Day
Contact Name: Declan Tennent

Eurofins Analytical Services Manager : Karl Bulow

Sample Detail						Polycyclic Aromatic Hydrocarbons	Metals M8	Moisture Set
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	QC02	Jul 30, 2024		Soil	S24-Au0003779	X	X	X
2	QC04	Jul 30, 2024		Soil	S24-Au0003780	X	X	X
Test Counts						2	2	2

Chain of Custody Documentation

ARC ENVIRONMENTAL
Suite 1.03 7 Jeffcott Street, West Melbourne 3003
Phone: (03) 8383 1950

LAB: EUROFINS	SAMPLER: DT
LAB ADDRESS :	MOBILE: 0439 919 543
PROJECT MANAGER (PM): Declan Tennent	PHONE:
PROJECT ID: 2407 374	EMAIL REPORT TO:
SITE: LWS Grants	EMAIL INVOICE TO: (if different to report) admin@arcenvironmental.com.au
RESULTS REQUIRED (Date): ARC Standard	Primary Lab Quote: / Secondary Lab Quote:

FOR LABORATORY USE ONLY
COOLER SEAL (circle appropriate)
Intact: Yes No N/A
SAMPLE TEMPERATURE
CHILLED: Yes No

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

ANALYSIS REQUIRED including SUITES (and Code)

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

SAMPLE INFORMATION (note: S = Soil W=Water)					CONTAINER INFORMATION		8 metals	OCP									
LAB ID	SAMPLE ID	MATRIX	DATE	Time	Type / Code	Total bottles											
	QC02	S	30/07		Jar	1	X	X									
	QC01	S	30/07		Jar	1	X	X									

RELINQUISHED BY:			RECEIVED BY			METHOD OF SHIPMENT
Name: Declan	Date: 30/07		Name: Thanh L	Date: 30/7/21		Con' Note No:
Of: ARC	Time:		Of: ALS	Time:	1630	
Name:	Date:		Name:	Date:		Transport Co:
Of:	Time:		Of:	Time:		

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; V = VOA Vial HCl Preserved; VS = VOA Vial Sulphuric Preserved; 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.

ARC Environmental Pty Ltd
40 Heller St
Brunswick West
VIC 3055

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Declan Tennent**

Report **1124129-S**
Project name GWS GIANTS
Project ID 2407374
Received Date Jul 31, 2024

Client Sample ID			**QC02**	**QC04**
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**S24-Au0003779**	**S24-Au0003780**
Date Sampled			**Jul 30, 2024**	**Jul 30, 2024**
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	69	73
p-Terphenyl-d14 (surr.)	1	%	61	64
Heavy Metals				
Arsenic	2	mg/kg	4.0	9.3
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	10.0	15
Copper	5	mg/kg	16	76
Lead	5	mg/kg	26	67
Mercury	0.1	mg/kg	< 0.1	< 0.1
Nickel	5	mg/kg	8.7	15
Zinc	5	mg/kg	59	110
Sample Properties				
% Moisture	1	%	14	13

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
Polycyclic Aromatic Hydrocarbons	Sydney	Aug 05, 2024	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Sydney	Aug 05, 2024	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Sydney	Aug 02, 2024	14 Days
- Method: LTM-GEN-7080 Moisture			

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Phone: 03 8383 1950
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Received: Jul 31, 2024 12:34 PM
Due: Aug 7, 2024
Priority: 5 Day
Contact Name: Declan Tennent

Eurofins Analytical Services Manager : Karl Bulow

Sample Detail						Polycyclic Aromatic Hydrocarbons	Metals M8	Moisture Set
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	QC02	Jul 30, 2024		Soil	S24-Au0003779	X	X	X
2	QC04	Jul 30, 2024		Soil	S24-Au0003780	X	X	X
Test Counts						2	2	2

Internal Quality Control Review and Glossary

General

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

Holding Times

Please refer to the '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 before sample receipt deadlines as stated on the SRA.

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

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

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

Units

mg/kg: milligrams per kilogram	**mg/L:** milligrams per litre	**ppm:** parts per million
µg/L: micrograms per litre	**ppb:** parts per billion	**%:** Percentage
org/100 mL: Organisms per 100 millilitres	**NTU:** Nephelometric Turbidity Units	**MPN/100 mL:** Most Probable Number of organisms per 100 millilitres
CFU: Colony Forming Unit	**Colour:** Pt-Co Units (CU)	

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
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 moisture has been determined on a solid sample, the result is expressed on a dry weight 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 represents 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 similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
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 6.0
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 only be used as a guide 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. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

PFAS field samples containing surrogate recoveries above the QC limit designated in QSM 6.0, where no positive PFAS results have been reported or reviewed, and no data was affected.

QC Data General Comments

1. Where a result is reported as 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 are 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							
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							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	92			70-130	Pass	
Acenaphthylene	%	87			70-130	Pass	
Anthracene	%	91			70-130	Pass	
Benz(a)anthracene	%	71			70-130	Pass	
Benzo(a)pyrene	%	92			70-130	Pass	
Benzo(b&j)fluoranthene	%	73			70-130	Pass	
Benzo(g.h.i)perylene	%	90			70-130	Pass	
Benzo(k)fluoranthene	%	104			70-130	Pass	
Chrysene	%	107			70-130	Pass	
Dibenz(a.h)anthracene	%	85			70-130	Pass	
Fluoranthene	%	82			70-130	Pass	
Fluorene	%	96			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	89			70-130	Pass	
Naphthalene	%	91			70-130	Pass	
Phenanthrene	%	82			70-130	Pass	
Pyrene	%	81			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	120			80-120	Pass	
Cadmium	%	119			80-120	Pass	
Chromium	%	101			80-120	Pass	
Copper	%	96			80-120	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Lead			%	112			80-120	Pass	
Mercury			%	94			80-120	Pass	
Nickel			%	96			80-120	Pass	
Zinc			%	119			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S24-Au0005018	NCP	%	106			70-130	Pass	
Acenaphthylene	S24-Au0005018	NCP	%	99			70-130	Pass	
Anthracene	S24-Au0005018	NCP	%	96			70-130	Pass	
Benzo(a)pyrene	S24-Au0005018	NCP	%	101			70-130	Pass	
Benzo(b&j)fluoranthene	S24-Au0005018	NCP	%	72			70-130	Pass	
Benzo(g.h.i)perylene	S24-Au0005018	NCP	%	85			70-130	Pass	
Dibenz(a.h)anthracene	S24-Au0005018	NCP	%	76			70-130	Pass	
Fluoranthene	S24-Au0005018	NCP	%	88			70-130	Pass	
Fluorene	S24-Au0005018	NCP	%	110			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S24-Au0005018	NCP	%	92			70-130	Pass	
Naphthalene	S24-Au0005018	NCP	%	104			70-130	Pass	
Phenanthrene	S24-Au0005018	NCP	%	89			70-130	Pass	
Pyrene	S24-Au0005018	NCP	%	85			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S24-Au0007728	NCP	%	114			75-125	Pass	
Cadmium	S24-Au0007728	NCP	%	108			75-125	Pass	
Chromium	S24-Au0007728	NCP	%	97			75-125	Pass	
Copper	S24-Au0007728	NCP	%	104			75-125	Pass	
Lead	S24-Au0007728	NCP	%	98			75-125	Pass	
Mercury	S24-Au0007728	NCP	%	111			75-125	Pass	
Nickel	S24-Au0007728	NCP	%	105			75-125	Pass	
Zinc	S24-Au0007728	NCP	%	99			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S24-Au0002326	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S24-Au0002326	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S24-Au0002326	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S24-Au0002326	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S24-Au0002326	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S24-Au0002326	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S24-Au0002326	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S24-Au0002326	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S24-Au0002326	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S24-Au0002326	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S24-Au0002326	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S24-Au0002326	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S24-Au0002326	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S24-Au0002326	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S24-Au0002326	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S24-Au0002326	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S24-Au0004102	NCP	mg/kg	3.2	3.1	3.5	30%	Pass	
Cadmium	S24-Au0004102	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S24-Au0004102	NCP	mg/kg	34	30	14	30%	Pass	
Copper	S24-Au0008617	NCP	mg/kg	5.1	5.8	14	30%	Pass	
Lead	S24-Au0004102	NCP	mg/kg	10	12	21	30%	Pass	
Mercury	S24-Au0004102	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S24-Au0008617	NCP	mg/kg	5.2	5.9	13	30%	Pass	
Zinc	S24-Au0004102	NCP	mg/kg	65	56	15	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S24-Au0003498	NCP	%	11	10	5.7	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
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised by:

Karl Bulow	Analytical Services Manager
Fang Yee Tan	Senior Analyst-Metal
Mickael Ros	Senior Analyst-Metal
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Sample Properties

Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

Appendix D: UCL Calculations

UCL Statistics for Uncensored Full Data Sets

User Selected Options	
Date/Time of Computation	ProUCL 5.112/08/2024 3:50:06 PM
From File	WorkSheet.xls
Full Precision	OFF
Confidence Coefficient	95%
Number of Bootstrap Operations	2000

Copper

General Statistics

Total Number of Observations	26	Number of Distinct Observations	19
		Number of Missing Observations	1
Minimum	5	Mean	17.77
Maximum	76	Median	13.5
SD	13.58	Std. Error of Mean	2.664
Coefficient of Variation	0.764	Skewness	3.389

Normal GOF Test

Shapiro Wilk Test Statistic	0.64	**Shapiro Wilk GOF Test**
5% Shapiro Wilk Critical Value	0.92	Data Not Normal at 5% Significance Level
Lilliefors Test Statistic	0.235	**Lilliefors GOF Test**
5% Lilliefors Critical Value	0.17	Data Not Normal at 5% Significance Level

Data Not Normal at 5% Significance Level

Assuming Normal Distribution

95% Normal UCL		**95% UCLs (Adjusted for Skewness)**	
95% Student's-t UCL	22.32	95% Adjusted-CLT UCL (Chen-1995)	24.04
		95% Modified-t UCL (Johnson-1978)	22.61

Gamma GOF Test

A-D Test Statistic	0.948	**Anderson-Darling Gamma GOF Test**
5% A-D Critical Value	0.75	Data Not Gamma Distributed at 5% Significance Level
K-S Test Statistic	0.141	**Kolmogorov-Smirnov Gamma GOF Test**
5% K-S Critical Value	0.172	Detected data appear Gamma Distributed at 5% Significance Level

Detected data follow Appr. Gamma Distribution at 5% Significance Level

Gamma Statistics

k hat (MLE)	3.202	k star (bias corrected MLE)	2.858
Theta hat (MLE)	5.55	Theta star (bias corrected MLE)	6.217
nu hat (MLE)	166.5	nu star (bias corrected)	148.6
MLE Mean (bias corrected)	17.77	MLE Sd (bias corrected)	10.51
		Approximate Chi Square Value (0.05)	121.4
Adjusted Level of Significance	0.0398	Adjusted Chi Square Value	119.8

Assuming Gamma Distribution

95% Approximate Gamma UCL (use when n>=50)	21.75	95% Adjusted Gamma UCL (use when n<50)	22.04

Lognormal GOF Test

Shapiro Wilk Test Statistic	0.945	**Shapiro Wilk Lognormal GOF Test**
5% Shapiro Wilk Critical Value	0.92	Data appear Lognormal at 5% Significance Level
Lilliefors Test Statistic	0.126	**Lilliefors Lognormal GOF Test**
5% Lilliefors Critical Value	0.17	Data appear Lognormal at 5% Significance Level

Data appear Lognormal at 5% Significance Level

Lognormal Statistics

Minimum of Logged Data	1.609	Mean of logged Data	2.713
Maximum of Logged Data	4.331	SD of logged Data	0.537

Assuming Lognormal Distribution

95% H-UCL	21.59	90% Chebyshev (MVUE) UCL	23.05
95% Chebyshev (MVUE) UCL	25.65	97.5% Chebyshev (MVUE) UCL	29.25
99% Chebyshev (MVUE) UCL	36.34		

Nonparametric Distribution Free UCL Statistics

Data appear to follow a Discernible Distribution at 5% Significance Level

Nonparametric Distribution Free UCLs

95% CLT UCL	22.15	95% Jackknife UCL	22.32
95% Standard Bootstrap UCL	22.02	95% Bootstrap-t UCL	26.41
95% Hall's Bootstrap UCL	41.39	95% Percentile Bootstrap UCL	22.5
95% BCA Bootstrap UCL	24.69		
90% Chebyshev(Mean, Sd) UCL	25.76	95% Chebyshev(Mean, Sd) UCL	29.38
97.5% Chebyshev(Mean, Sd) UCL	34.41	99% Chebyshev(Mean, Sd) UCL	44.27

Suggested UCL to Use

95% Adjusted Gamma UCL	22.04		

When a data set follows an approximate (e.g., normal) distribution passing one of the GOF test

When applicable, it is suggested to use a UCL based upon a distribution (e.g., gamma) passing both GOF tests in ProUCL

Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.

Recommendations are based upon data size, data distribution, and skewness.

These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).

However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.

89												
90	**Zinc**											
91												
92	**General Statistics**											
93	Total Number of Observations					26	Number of Distinct Observations					25
94							Number of Missing Observations					1
95	Minimum					5	Mean					44.23
96	Maximum					110	Median					41.5
97	SD					27.24	Std. Error of Mean					5.342
98	Coefficient of Variation					0.616	Skewness					0.79
99												
100	**Normal GOF Test**											
101	Shapiro Wilk Test Statistic					0.927	**Shapiro Wilk GOF Test**					
102	5% Shapiro Wilk Critical Value					0.92	Data appear Normal at 5% Significance Level					
103	Lilliefors Test Statistic					0.104	**Lilliefors GOF Test**					
104	5% Lilliefors Critical Value					0.17	Data appear Normal at 5% Significance Level					
105	**Data appear Normal at 5% Significance Level**											
106												
107	**Assuming Normal Distribution**											
108	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
109	95% Student's-t UCL					53.36	95% Adjusted-CLT UCL (Chen-1995)					53.9
110							95% Modified-t UCL (Johnson-1978)					53.49
111												
112	**Gamma GOF Test**											
113	A-D Test Statistic					0.562	**Anderson-Darling Gamma GOF Test**					
114	5% A-D Critical Value					0.756	Detected data appear Gamma Distributed at 5% Significance Level					
115	K-S Test Statistic					0.141	**Kolmogorov-Smirnov Gamma GOF Test**					
116	5% K-S Critical Value					0.173	Detected data appear Gamma Distributed at 5% Significance Level					
117	**Detected data appear Gamma Distributed at 5% Significance Level**											
118												
119	**Gamma Statistics**											
120	k hat (MLE)					2.246	k star (bias corrected MLE)					2.012
121	Theta hat (MLE)					19.69	Theta star (bias corrected MLE)					21.98
122	nu hat (MLE)					116.8	nu star (bias corrected)					104.6
123	MLE Mean (bias corrected)					44.23	MLE Sd (bias corrected)					31.18
124							Approximate Chi Square Value (0.05)					82.04
125	Adjusted Level of Significance					0.0398	Adjusted Chi Square Value					80.72
126												
127	**Assuming Gamma Distribution**											
128	95% Approximate Gamma UCL (use when n>=50))					56.42	95% Adjusted Gamma UCL (use when n<50)					57.34
129												
130	**Lognormal GOF Test**											
131	Shapiro Wilk Test Statistic					0.909	**Shapiro Wilk Lognormal GOF Test**					
132	5% Shapiro Wilk Critical Value					0.92	Data Not Lognormal at 5% Significance Level					
133	Lilliefors Test Statistic					0.184	**Lilliefors Lognormal GOF Test**					
134	5% Lilliefors Critical Value					0.17	Data Not Lognormal at 5% Significance Level					
135	**Data Not Lognormal at 5% Significance Level**											
136												
137	**Lognormal Statistics**											
138	Minimum of Logged Data					1.609	Mean of logged Data					3.551
139	Maximum of Logged Data					4.7	SD of logged Data					0.791
140												
141	**Assuming Lognormal Distribution**											
142	95% H-UCL					68.03	90% Chebyshev (MVUE) UCL					70.8
143	95% Chebyshev (MVUE) UCL					81.63	97.5% Chebyshev (MVUE) UCL					96.66
144	99% Chebyshev (MVUE) UCL					126.2						
145												
146	**Nonparametric Distribution Free UCL Statistics**											
147	**Data appear to follow a Discernible Distribution at 5% Significance Level**											
148												
149	**Nonparametric Distribution Free UCLs**											
150	95% CLT UCL					53.02	95% Jackknife UCL					53.36
151	95% Standard Bootstrap UCL					53.06	95% Bootstrap-t UCL					54.46
152	95% Hall's Bootstrap UCL					55.1	95% Percentile Bootstrap UCL					52.88
153	95% BCA Bootstrap UCL					53.54						
154	90% Chebyshev(Mean, Sd) UCL					60.26	95% Chebyshev(Mean, Sd) UCL					67.51
155	97.5% Chebyshev(Mean, Sd) UCL					77.59	99% Chebyshev(Mean, Sd) UCL					97.38
156												
157	**Suggested UCL to Use**											
158	95% Student's-t UCL					53.36						
159												
160	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
161	Recommendations are based upon data size, data distribution, and skewness.											
162	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
163	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
164												

165												
166	**BaP**											
167												
168	**General Statistics**											
169					Total Number of Observations	27			Number of Distinct Observations			5
170									Number of Missing Observations			0
171					Minimum	0.5			Mean			1
172					Maximum	12.3			Median			0.5
173					SD	2.272			Std. Error of Mean			0.437
174					Coefficient of Variation	2.272			Skewness			5.1
175												
176	**Normal GOF Test**											
177					Shapiro Wilk Test Statistic	0.237			**Shapiro Wilk GOF Test**			
178					5% Shapiro Wilk Critical Value	0.923			Data Not Normal at 5% Significance Level			
179					Lilliefors Test Statistic	0.478			**Lilliefors GOF Test**			
180					5% Lilliefors Critical Value	0.167			Data Not Normal at 5% Significance Level			
181	**Data Not Normal at 5% Significance Level**											
182												
183	**Assuming Normal Distribution**											
184					**95% Normal UCL**				**95% UCLs (Adjusted for Skewness)**			
185					95% Student's-t UCL	1.746			95% Adjusted-CLT UCL (Chen-1995)			2.178
186									95% Modified-t UCL (Johnson-1978)			1.817
187												
188	**Gamma GOF Test**											
189					A-D Test Statistic	8.542			**Anderson-Darling Gamma GOF Test**			
190					5% A-D Critical Value	0.77			Data Not Gamma Distributed at 5% Significance Level			
191					K-S Test Statistic	0.458			**Kolmogorov-Smirnov Gamma GOF Test**			
192					5% K-S Critical Value	0.173			Data Not Gamma Distributed at 5% Significance Level			
193	**Data Not Gamma Distributed at 5% Significance Level**											
194												
195	**Gamma Statistics**											
196					k hat (MLE)	1.135			k star (bias corrected MLE)			1.034
197					Theta hat (MLE)	0.881			Theta star (bias corrected MLE)			0.967
198					nu hat (MLE)	61.31			nu star (bias corrected)			55.83
199					MLE Mean (bias corrected)	1			MLE Sd (bias corrected)			0.983
200									Approximate Chi Square Value (0.05)			39.66
201					Adjusted Level of Significance	0.0401			Adjusted Chi Square Value			38.79
202												
203	**Assuming Gamma Distribution**											
204					95% Approximate Gamma UCL (use when n>=50))	1.408			95% Adjusted Gamma UCL (use when n<50)			1.439
205												
206	**Lognormal GOF Test**											
207					Shapiro Wilk Test Statistic	0.341			**Shapiro Wilk Lognormal GOF Test**			
208					5% Shapiro Wilk Critical Value	0.923			Data Not Lognormal at 5% Significance Level			
209					Lilliefors Test Statistic	0.43			**Lilliefors Lognormal GOF Test**			
210					5% Lilliefors Critical Value	0.167			Data Not Lognormal at 5% Significance Level			
211	**Data Not Lognormal at 5% Significance Level**											
212												
213	**Lognormal Statistics**											
214					Minimum of Logged Data	-0.693			Mean of logged Data			-0.501
215					Maximum of Logged Data	2.51			SD of logged Data			0.653
216												
217	**Assuming Lognormal Distribution**											
218					95% H-UCL	0.983			90% Chebyshev (MVUE) UCL			1.042
219					95% Chebyshev (MVUE) UCL	1.178			97.5% Chebyshev (MVUE) UCL			1.366
220					99% Chebyshev (MVUE) UCL	1.736						
221												
222	**Nonparametric Distribution Free UCL Statistics**											
223	**Data do not follow a Discernible Distribution (0.05)**											
224												
225	**Nonparametric Distribution Free UCLs**											
226					95% CLT UCL	1.719			95% Jackknife UCL			1.746
227					95% Standard Bootstrap UCL	1.719			95% Bootstrap-t UCL			27.22
228					95% Hall's Bootstrap UCL	18.83			95% Percentile Bootstrap UCL			1.837
229					95% BCA Bootstrap UCL	2.752						
230					90% Chebyshev(Mean, Sd) UCL	2.312			95% Chebyshev(Mean, Sd) UCL			2.906
231					97.5% Chebyshev(Mean, Sd) UCL	3.731			99% Chebyshev(Mean, Sd) UCL			5.351
232												
233	**Suggested UCL to Use**											
234					95% Chebyshev (Mean, Sd) UCL	2.906						
235												
236	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
237	Recommendations are based upon data size, data distribution, and skewness.											
238	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
239	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
240												

	A	B	C	D	E	F	G	H	I	J	K	L
241												
242	**BaP TEQ (Half)**											
243												
244	**General Statistics**											
245	Total Number of Observations					27	Number of Distinct Observations					6
246							Number of Missing Observations					0
247	Minimum					0.6	Mean					1.381
248	Maximum					17.8	Median					0.6
249	SD					3.304	Std. Error of Mean					0.636
250	Coefficient of Variation					2.392	Skewness					5.088
251												
252	**Normal GOF Test**											
253	Shapiro Wilk Test Statistic					0.253	**Shapiro Wilk GOF Test**					
254	5% Shapiro Wilk Critical Value					0.923	Data Not Normal at 5% Significance Level					
255	Lilliefors Test Statistic					0.448	**Lilliefors GOF Test**					
256	5% Lilliefors Critical Value					0.167	Data Not Normal at 5% Significance Level					
257	**Data Not Normal at 5% Significance Level**											
258												
259	**Assuming Normal Distribution**											
260	**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**					
261	95% Student's-t UCL					2.466	95% Adjusted-CLT UCL (Chen-1995)					3.093
262							95% Modified-t UCL (Johnson-1978)					2.57
263												
264	**Gamma GOF Test**											
265	A-D Test Statistic					7.183	**Anderson-Darling Gamma GOF Test**					
266	5% A-D Critical Value					0.773	Data Not Gamma Distributed at 5% Significance Level					
267	K-S Test Statistic					0.393	**Kolmogorov-Smirnov Gamma GOF Test**					
268	5% K-S Critical Value					0.173	Data Not Gamma Distributed at 5% Significance Level					
269	**Data Not Gamma Distributed at 5% Significance Level**											
270												
271	**Gamma Statistics**											
272	k hat (MLE)					1.024	k star (bias corrected MLE)					0.935
273	Theta hat (MLE)					1.349	Theta star (bias corrected MLE)					1.477
274	nu hat (MLE)					55.31	nu star (bias corrected)					50.49
275	MLE Mean (bias corrected)					1.381	MLE Sd (bias corrected)					1.429
276							Approximate Chi Square Value (0.05)					35.18
277	Adjusted Level of Significance					0.0401	Adjusted Chi Square Value					34.36
278												
279	**Assuming Gamma Distribution**											
280	95% Approximate Gamma UCL (use when n>=50))					1.983	95% Adjusted Gamma UCL (use when n<50)					2.03
281												
282	**Lognormal GOF Test**											
283	Shapiro Wilk Test Statistic					0.451	**Shapiro Wilk Lognormal GOF Test**					
284	5% Shapiro Wilk Critical Value					0.923	Data Not Lognormal at 5% Significance Level					
285	Lilliefors Test Statistic					0.391	**Lilliefors Lognormal GOF Test**					
286	5% Lilliefors Critical Value					0.167	Data Not Lognormal at 5% Significance Level					
287	**Data Not Lognormal at 5% Significance Level**											
288												
289	**Lognormal Statistics**											
290	Minimum of Logged Data					-0.511	Mean of logged Data					-0.239
291	Maximum of Logged Data					2.879	SD of logged Data					0.703
292												
293	**Assuming Lognormal Distribution**											
294	95% H-UCL					1.359	90% Chebyshev (MVUE) UCL					1.434
295	95% Chebyshev (MVUE) UCL					1.632	97.5% Chebyshev (MVUE) UCL					1.907
296	99% Chebyshev (MVUE) UCL					2.447						
297												
298	**Nonparametric Distribution Free UCL Statistics**											
299	**Data do not follow a Discernible Distribution (0.05)**											
300												
301	**Nonparametric Distribution Free UCLs**											
302	95% CLT UCL					2.427	95% Jackknife UCL					2.466
303	95% Standard Bootstrap UCL					2.405	95% Bootstrap-t UCL					16.86
304	95% Hall's Bootstrap UCL					8.476	95% Percentile Bootstrap UCL					2.619
305	95% BCA Bootstrap UCL					3.381						
306	90% Chebyshev(Mean, Sd) UCL					3.289	95% Chebyshev(Mean, Sd) UCL					4.153
307	97.5% Chebyshev(Mean, Sd) UCL					5.352	99% Chebyshev(Mean, Sd) UCL					7.708
308												
309	**Suggested UCL to Use**											
310	95% Chebyshev (Mean, Sd) UCL					4.153						
311												
312	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
313	Recommendations are based upon data size, data distribution, and skewness.											
314	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
315	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
316												

317												
318	**BaP TEQ (LOR)**											
319												
320						**General Statistics**							
321					Total Number of Observations	27			Number of Distinct Observations			5
322									Number of Missing Observations			0
323					Minimum	1.2			Mean			1.893
324					Maximum	17.8			Median			1.2
325					SD	3.194			Std. Error of Mean			0.615
326					Coefficient of Variation	1.688			Skewness			5.121
327												
328						**Normal GOF Test**						
329					Shapiro Wilk Test Statistic	0.232			**Shapiro Wilk GOF Test**			
330					5% Shapiro Wilk Critical Value	0.923			Data Not Normal at 5% Significance Level			
331					Lilliefors Test Statistic	0.475			**Lilliefors GOF Test**			
332					5% Lilliefors Critical Value	0.167			Data Not Normal at 5% Significance Level			
333						**Data Not Normal at 5% Significance Level**						
334												
335						**Assuming Normal Distribution**						
336						**95% Normal UCL**						**95% UCLs (Adjusted for Skewness)**
337					95% Student's-t UCL	2.941			95% Adjusted-CLT UCL (Chen-1995)			3.551
338									95% Modified-t UCL (Johnson-1978)			3.042
339												
340						**Gamma GOF Test**						
341					A-D Test Statistic	8.686			**Anderson-Darling Gamma GOF Test**			
342					5% A-D Critical Value	0.76			Data Not Gamma Distributed at 5% Significance Level			
343					K-S Test Statistic	0.472			**Kolmogorov-Smirnov Gamma GOF Test**			
344					5% K-S Critical Value	0.171			Data Not Gamma Distributed at 5% Significance Level			
345						**Data Not Gamma Distributed at 5% Significance Level**						
346												
347						**Gamma Statistics**						
348					k hat (MLE)	1.76			k star (bias corrected MLE)			1.589
349					Theta hat (MLE)	1.075			Theta star (bias corrected MLE)			1.191
350					nu hat (MLE)	95.06			nu star (bias corrected)			85.83
351					MLE Mean (bias corrected)	1.893			MLE Sd (bias corrected)			1.501
352									Approximate Chi Square Value (0.05)			65.47
353					Adjusted Level of Significance	0.0401			Adjusted Chi Square Value			64.34
354												
355						**Assuming Gamma Distribution**							
356					95% Approximate Gamma UCL (use when n>=50))	2.481			95% Adjusted Gamma UCL (use when n<50)			2.525
357												
358						**Lognormal GOF Test**						
359					Shapiro Wilk Test Statistic	0.309			**Shapiro Wilk Lognormal GOF Test**			
360					5% Shapiro Wilk Critical Value	0.923			Data Not Lognormal at 5% Significance Level			
361					Lilliefors Test Statistic	0.437			**Lilliefors Lognormal GOF Test**			
362					5% Lilliefors Critical Value	0.167			Data Not Lognormal at 5% Significance Level			
363						**Data Not Lognormal at 5% Significance Level**						
364												
365						**Lognormal Statistics**						
366					Minimum of Logged Data	0.182			Mean of logged Data			0.328
367					Maximum of Logged Data	2.879			SD of logged Data			0.536
368												
369						**Assuming Lognormal Distribution**						
370					95% H-UCL	1.979			90% Chebyshev (MVUE) UCL			2.11
371					95% Chebyshev (MVUE) UCL	2.345			97.5% Chebyshev (MVUE) UCL			2.67
372					99% Chebyshev (MVUE) UCL	3.309						
373												
374						**Nonparametric Distribution Free UCL Statistics**							
375						**Data do not follow a Discernible Distribution (0.05)**							
376												
377						**Nonparametric Distribution Free UCLs**							
378					95% CLT UCL	2.904			95% Jackknife UCL			2.941
379					95% Standard Bootstrap UCL	2.896			95% Bootstrap-t UCL			37.88
380					95% Hall's Bootstrap UCL	31.07			95% Percentile Bootstrap UCL			3.115
381					95% BCA Bootstrap UCL	3.852						
382					90% Chebyshev(Mean, Sd) UCL	3.737			95% Chebyshev(Mean, Sd) UCL			4.572
383					97.5% Chebyshev(Mean, Sd) UCL	5.732			99% Chebyshev(Mean, Sd) UCL			8.009
384												
385						**Suggested UCL to Use**							
386					95% Chebyshev (Mean, Sd) UCL	4.572						
387												
388						Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.							
389						Recommendations are based upon data size, data distribution, and skewness.							
390						These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).							
391						However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.							
392												

393												
394	**BaP TEQ (Zero)**											
395												
396	**General Statistics**											
397					Total Number of Observations		27			Number of Distinct Observations		6
398										Number of Missing Observations		0
399					Minimum		0.5			Mean		1.244
400					Maximum		17.8			Median		0.5
401					SD		3.327			Std. Error of Mean		0.64
402					Coefficient of Variation		2.674			Skewness		5.108
403												
404	**Normal GOF Test**											
405					Shapiro Wilk Test Statistic		0.24			**Shapiro Wilk GOF Test**		
406					5% Shapiro Wilk Critical Value		0.923			Data Not Normal at 5% Significance Level		
407					Lilliefors Test Statistic		0.467			**Lilliefors GOF Test**		
408					5% Lilliefors Critical Value		0.167			Data Not Normal at 5% Significance Level		
409	**Data Not Normal at 5% Significance Level**											
410												
411	**Assuming Normal Distribution**											
412					**95% Normal UCL**					**95% UCLs (Adjusted for Skewness)**		
413					95% Student's-t UCL		2.337			95% Adjusted-CLT UCL (Chen-1995)		2.97
414										95% Modified-t UCL (Johnson-1978)		2.442
415												
416	**Gamma GOF Test**											
417					A-D Test Statistic		8.026			**Anderson-Darling Gamma GOF Test**		
418					5% A-D Critical Value		0.778			Data Not Gamma Distributed at 5% Significance Level		
419					K-S Test Statistic		0.438			**Kolmogorov-Smirnov Gamma GOF Test**		
420					5% K-S Critical Value		0.174			Data Not Gamma Distributed at 5% Significance Level		
421	**Data Not Gamma Distributed at 5% Significance Level**											
422												
423	**Gamma Statistics**											
424					k hat (MLE)		0.884			k star (bias corrected MLE)		0.81
425					Theta hat (MLE)		1.408			Theta star (bias corrected MLE)		1.535
426					nu hat (MLE)		47.74			nu star (bias corrected)		43.77
427					MLE Mean (bias corrected)		1.244			MLE Sd (bias corrected)		1.382
428										Approximate Chi Square Value (0.05)		29.59
429					Adjusted Level of Significance		0.0401			Adjusted Chi Square Value		28.85
430												
431	**Assuming Gamma Distribution**											
432					95% Approximate Gamma UCL (use when n>=50))		1.84			95% Adjusted Gamma UCL (use when n<50)		1.888
433												
434	**Lognormal GOF Test**											
435					Shapiro Wilk Test Statistic		0.395			**Shapiro Wilk Lognormal GOF Test**		
436					5% Shapiro Wilk Critical Value		0.923			Data Not Lognormal at 5% Significance Level		
437					Lilliefors Test Statistic		0.373			**Lilliefors Lognormal GOF Test**		
438					5% Lilliefors Critical Value		0.167			Data Not Lognormal at 5% Significance Level		
439	**Data Not Lognormal at 5% Significance Level**											
440												
441	**Lognormal Statistics**											
442					Minimum of Logged Data		-0.693			Mean of logged Data		-0.444
443					Maximum of Logged Data		2.879			SD of logged Data		0.735
444												
445	**Assuming Lognormal Distribution**											
446					95% H-UCL		1.154			90% Chebyshev (MVUE) UCL		1.212
447					95% Chebyshev (MVUE) UCL		1.386			97.5% Chebyshev (MVUE) UCL		1.626
448					99% Chebyshev (MVUE) UCL		2.098					
449												
450	**Nonparametric Distribution Free UCL Statistics**											
451	**Data do not follow a Discernible Distribution (0.05)**											
452												
453	**Nonparametric Distribution Free UCLs**											
454					95% CLT UCL		2.298			95% Jackknife UCL		2.337
455					95% Standard Bootstrap UCL		2.252			95% Bootstrap-t UCL		29.3
456					95% Hall's Bootstrap UCL		17.52			95% Percentile Bootstrap UCL		2.493
457					95% BCA Bootstrap UCL		3.737					
458					90% Chebyshev(Mean, Sd) UCL		3.165			95% Chebyshev(Mean, Sd) UCL		4.036
459					97.5% Chebyshev(Mean, Sd) UCL		5.243			99% Chebyshev(Mean, Sd) UCL		7.616
460												
461	**Suggested UCL to Use**											
462					95% Chebyshev (Mean, Sd) UCL		4.036					
463												
464	Note: Suggestions regarding the selection of a 95% UCL are provided to help the user to select the most appropriate 95% UCL.											
465	Recommendations are based upon data size, data distribution, and skewness.											
466	These recommendations are based upon the results of the simulation studies summarized in Singh, Maichle, and Lee (2006).											
467	However, simulations results will not cover all Real World data sets; for additional insight the user may want to consult a statistician.											
468												

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