DETAILED SITE INVESTIGATION
PREPARED FOR
GREENFIELDS RESOURCE RECOVERY FACILITY
344 PARK ROAD, WALLACIA NSW 2745

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EXECUTIVE SUMMARY

Benbow Environmental (BE) was engaged by Carlo Ranieri and Associates, on behalf of Greenfields Resource Recovery Facility, to undertake a Detailed Site Investigation (DSI) for the site located at 344 Park Road, Wallacia NSW 2745.

Concerns have been raised by Penrith City Council (Council) on the contamination status of three (3) areas of concern on site. These areas of concern include:

Area of Concern #1: the shale covered car parking area north of the residence;

Area of Concern #2: The area where the stockpiles of material were previously located on the western portion of the site; and

Area of Concern #3: The small shed and surrounds at the eastern portion of the site.

Previous activities of concern taking place on the Site included the importation of potentially contaminated fill materials, the stockpiling of potentially contaminated materials and the use of the Site for truck and vehicle maintenance activities.

To alleviate concerns from these activities, soil sample collection and chemical analysis was undertaken within the areas of concern to determine the contamination status (if any) of the soils. Samples were analysed for the following contaminants of concern, as per the Limited Phase II Environmental Site Assessment (ESA) (Ref: 191318_Phase II) site-specific Conceptual Site Model (CSM):

- Heavy metals (including Arsenic (As), Cadmium (Cd), Chromium (Cr), Copper (Cu), Lead (Pb), Mercury (Hg), Nickel (Ni) and Zinc (Zn));
- Total Recoverable Hydrocarbons (TRH);
- Benzene, Toluene, Ethylbenzene, Xylenes and Naphthalene (BTEXN);
- Polycyclic Aromatic Hydrocarbons (PAHs);
- Organochlorine Pesticides (OCPs) and Organophosphorus Pesticides (OPPs);
- Polychlorinated Biphenyls (PCBs); and
- Asbestos Containing Materials (ACM).

A total of 28 surface soil samples were collected from the three (3) identified areas of concern by BE consultants on 25 June 2021. Samples were analysed by NATA accredited ALS Environmental in accordance with the ASC NEPM and results were compared to the SAC for contaminants of concern detailed in Table 5-2.

The 95% Upper Confidence Level (UCL) was calculated for all laboratory results of identified contaminants of concern, utilising Procedure D and Procedure G of the NSW EPA *Sampling Design Guidelines* (1995). The statistical analysis indicates that there is a 95% probability that the calculated average concentration of the contaminant will not exceed the criteria value.

The 95% UCL was calculated for each of the three (3) individual areas of concern.

All statistical analysis for all areas indicated that there is a 95% probability that the calculated average concentration of each contaminant of concern will not exceed the SAC value. The full

laboratory results for analytical testing of soil samples collected by BE are provided in the ALS Environmental Certificate of Analysis (COA) (Attachment 1).

The results of the soil sampling and analysis of samples collected from the three (3) areas of concern are summarised below.

Heavy metals: Results of analysis were all below adopted SAC.
TRH: Results of analysis were all below adopted SAC.
BTEXN: Results of analysis were all below adopted SAC.
PAHs: Results of analysis were all below adopted SAC.
OCPs and OPPs: Results of analysis were all below adopted SAC.
PCBs: Results of analysis were all below adopted SAC.
ACM: Results of analysis were all below adopted SAC.

In accordance with the ASC NEPM and the specific contaminant of concern limits defined in the SAC, results from analysis demonstrates that soils in the three (3) areas of concern are not contaminated. This confirms the site is suitable for the proposed use as a resource recovery facility.

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Attachment 1: Laboratory Analysis and Documentation (ALS Environmental)

ACRONYMS USED IN THIS REPORT

ADI - Allowable Daily Intake
AEC – Area of Environmental Concern
BTEXN - Benzene, Toluene, Ethyl Benzene, Xylene, Naphthalene
COC – Chain of Custody
CSM – Conceptual Site Model
DQO – Data Quality Objectives
DSI – Detailed Site Investigation
EIL – Environmental Investigation Level
EPA – Environmental Protection Authority
ESL – Environmental Screening Level
HIL – Health Investigation Level
HSL – Health Screening Level
LOR – Limit of Reporting
NATA – National Association of Testing Authorities
NEPM – National Environmental Protection Measure
PID – Photo Ionisation Detector
QA/QC - Quality Assurance and Quality Control
RPD - Relative Percent Difference
SAC – Site Adopted Criteria
STEL - Short-Term Exposure Limit
TPH - Total Petroleum Hydrocarbons
TRH – Total Recoverable Hydrocarbons
TWA - Time Weighted Average
UCL – Upper Confidence Level
VOC – Volatile Organic Compound

SPELLING AND ABBREVIATIONS USED IN THIS REPORT

Spelling in this document follows Australian standard English except when referring to chemical names and abbreviations, where the International Union of Pure and Applied Chemistry (IUPAC) spelling is adopted (such as “sulfur” instead of “sulphur”).

1. INTRODUCTION

Benbow Environmental (BE) was engaged by Carlo Ranieri and Associates, on behalf of Greenfields Resource Recovery Facility, to undertake a Detailed Site Investigation (DSI) for the site located at 344 Park Road, Wallacia NSW 2745 (the Site).

Concerns have been raised by Penrith City Council (Council) on the contamination status of three (3) areas of concern on site. A sampling and testing approach was approved by Council on 8 June 2021 and included:

Area of Concern #1: the shale covered car parking area north of the residence;

Area of Concern #2: The area where the stockpiles of material were previously located on the western portion of the site; and

Area of Concern #3: The small shed and surrounds at the eastern portion of the site.

Previous activities of concern taking place on the Site included the importation of potentially contaminated fill materials, the stockpiling of potentially contaminated materials and the use of the Site for truck and vehicle maintenance activities.

To alleviate concerns from these activities, soil sample collection and chemical analysis was undertaken within the areas of concern to determine the contamination status (if any) of the soils. Contaminants of concern were selected and guided as per the Limited Phase II Environmental Site Assessment (ESA) (Ref: 191318_Phase II) site-specific Conceptual Site Model (CSM):

- Heavy metals (including Arsenic (As), Cadmium (Cd), Chromium (Cr), Copper (Cu), Lead (Pb), Mercury (Hg), Nickel (Ni) and Zinc (Zn));
- Total Recoverable Hydrocarbons (TRH);
- Benzene, Toluene, Ethylbenzene, Xylenes and Naphthalene (BTEXN);
- Polycyclic Aromatic Hydrocarbons (PAHs);
- Organochlorine Pesticides (OCPs) and Organophosphorus Pesticides (OPPs);
- Polychlorinated Biphenyls (PCBs); and
- Asbestos Containing Materials (ACM).

A total of 28 sampling points have been included in the DSI assessment. The number of sampling points was informed by NSW EPA *NSW Sampling Design Guidelines* (1995). Soil samples were collected from the surface (approximately 0.1-0.2 m deep) using hand instruments (i.e. mattock, metal trowel, spoon and/or gloved hand).

This report is compiled in accordance with the NSW EPA *Sampling Design Guidelines* (1995), NSW EPA *Consultants Reporting on Contaminated Land – Contaminated Land Guidelines* (2020) and National Environmental Protection (Assessment of Site Contamination) Measure (NEPM) (NEPC, 1999) amended 2013.

1.1 SCOPE OF WORK

The scope of works is provided below:

- Provide a brief outline of the site history, location, geology and hydrology;

- Identify the potential contaminants of concern, as approved by Council and the site-specific CSM;
- Verify the presence, type, and extent of contamination (if any) to the local environment;
- Compare contaminant levels to the appropriate criteria, including the current risk levels posed to human health and environment;
- Provide laboratory analysis results and sampling methodology;
- Provide a statement and report on the contamination status, detailing the above.

1.2 OBJECTIVE

The principal purpose of this DSI is to provide a detailed assessment and statement on the contamination status of the three (3) identified areas of concern.

Concerns have been raised by Council on the contamination status of these areas. To alleviate concerns from previous activities, soil sample collection and chemical analysis was undertaken within the areas of concern to determine the contamination status (if any) of the soils.

2. SITE IDENTIFICATION AND LOCATION

2.1 SITE LOCATION

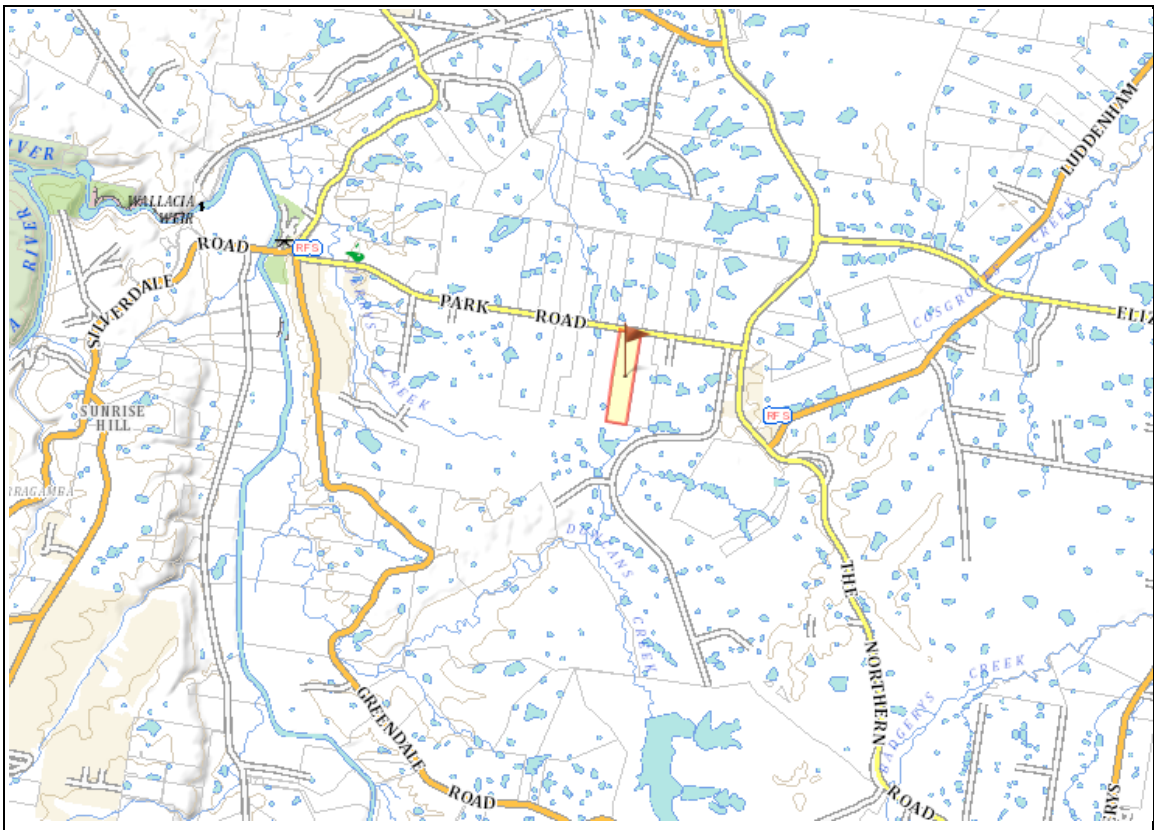
Site identification details are summarised in Table 2-1.

The Sites location in a regional setting, aerial view and land zoning are displayed in Figure 2-1, Figure 2-2 and Figure 2-3 respectively.

Table 2-1: Site Identification Details

Address	344 Park Road, Wallacia NSW 2745
Lot and DP Numbers	Lot 5 DP 655046
Coordinates	-33.875084° Lat., 150.676880° Long
Investigation Area	5,120 m^2 (total of three areas of concern)
Local Government Area	Penrith City Council
Current Land Zoning	RU1 – Primary Production

Figure 2-1: Site Location (Regional Setting)



Source: Six Maps 2021

N
Not to scale

LEGEND:
Site Boundary

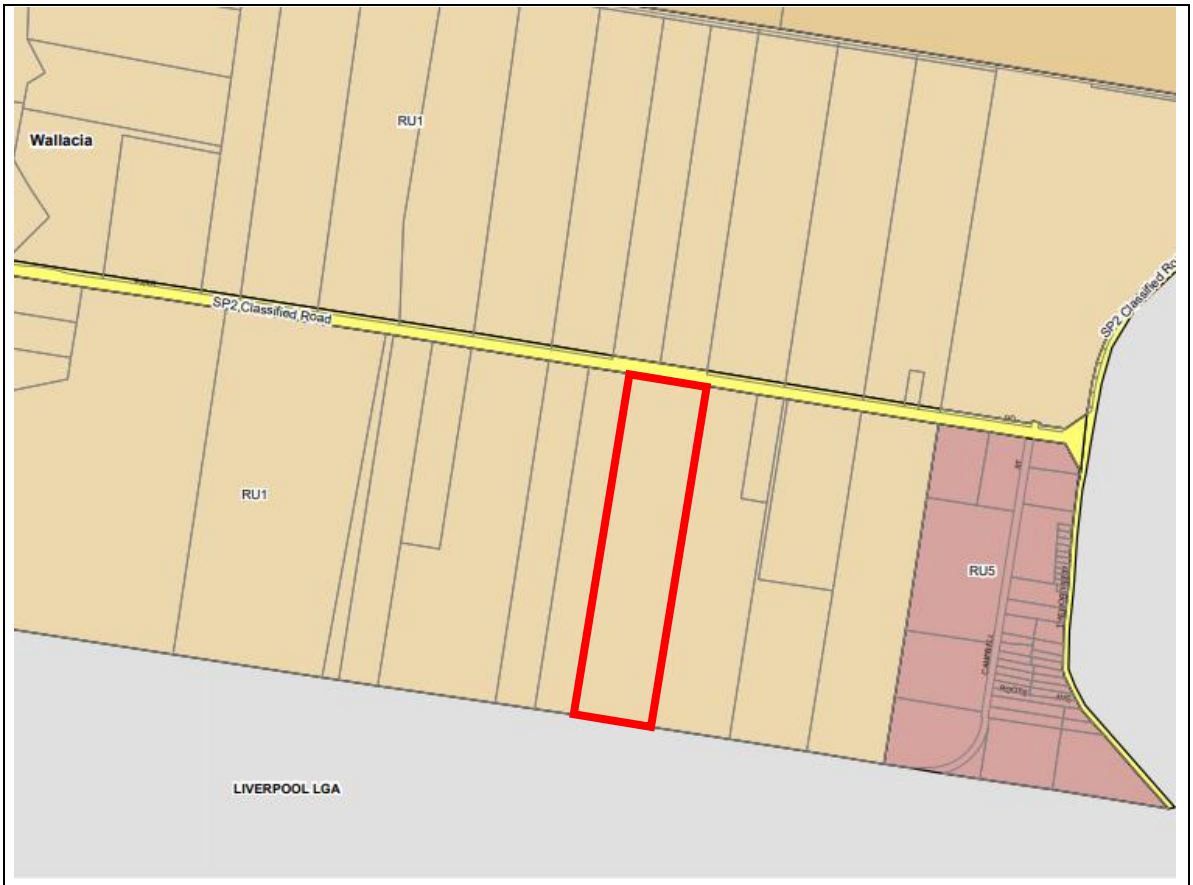
Benbow Environmental
25-27 Sherwood Street,
Northmead NSW 2152

Figure 2-2: Site Location (Aerial Photograph)

Source: Six Maps 2021

↑N Not to scale	LEGEND: Site Boundary	Benbow Environmental 25-27 Sherwood Street, Northmead NSW 2152

Figure 2-3: Land Zoning Map (Extract)



Source: Penrith LEP 2010 Land Zoning Map - Sheet LZN_008

N

Not to scale

LEGEND:

Site Boundary

Zone

B1	Neighbourhood Centre	RE1	Public Recreation
B2	Local Centre	RE2	Private Recreation
B5	Business Development	RU1	Primary Production
B6	Enterprise Corridor	RU2	Rural Landscape
E1	National Parks and Nature Reserves	RU4	Primary Production Small Lots
E2	Environmental Conservation	RU5	Village
E3	Environmental Management	SP1	Special Activities
E4	Environmental Living	SP2	Infrastructure
IN1	General Industrial	W1	Natural Waterways
IN2	Light Industrial	W2	Recreational Waterways
R1	General Residential		
R2	Low Density Residential		
R3	Medium Density Residential		
R5	Large Lot Residential		

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2.2 SITE CONDITION AND SURROUNDING ENVIRONMENT

The Site is currently not being used. An unsealed driveway provides access to the site from Park Road and runs along the eastern boundary, providing access to a small dwelling and cleared area. Part of the land at the north-eastern area of the site has previously been cleared and now contains scattered established trees and grassed areas.

The small dwelling is located approximately 200 m to the south of Park Road and was being used as an office for tenants that were previously leasing the site and is now vacant. An existing pond is located north of the dwelling. A large cleared area of land to the south of the dwelling has been disturbed and various stockpiles of untreated timber materials are stored in this area.

The remaining area of the site is densely vegetated. An ephemeral watercourse traverses the site approximately 100 m south of the cleared area. Some unsealed tracks criss-cross through the southern area of the site.

2.3 AREAS OF CONCERN

Concerns have been raised by Council on the contamination status of three (3) areas on site (areas of concern). These areas of concern are identified in Table 5-3 and displayed in Figure 2-4, and include:

Area of Concern #1: the shale covered car parking area north of the residence;

Area of Concern #2: the area where the stockpiles of material were previously located on the western portion of the site; and

Area of Concern #3: the small shed and surrounds at the eastern portion of the site.

Figure 2-4: Identified Areas of Concern on Site

Source: Google Earth 2021

↑N Not to scale	LEGEND: Area of Concern Boundary Area of Concern ID	Benbow Environmental 25-27 Sherwood Street, Northmead NSW 2152

3. GEOLOGY & HYDROGEOLOGY

3.1 SOIL CLASSIFICATION AND GEOLOGY

The 'Penrith 1:100,000 Geological Map Sheet 9030' describes the geological composition of the area as follows:

> *Wianamatta Group, Bringelly Shale (Rwb) – Shale, carbonaceous claystone, laminate, fine to medium-grained lithic sandstone, rare coal and tuff*

The soil map 'Soil Landscapes of the Penrith 1:100,000 Sheet 9030' shows that the subject site is located in the 'Blacktown' (bt) area and is described as follows:

Blacktown (bt)

> *Landscape – gently undulating rises on Wianamatta Group shales. Local relief to 30 m, slopes are usually >5%. Broad rounded crests and ridges with gently inclined slopes. Cleared Eucalypt woodland and tall open-forest (dry sclerophyll forest).*
>
> *Soils – shallow to moderately deep (>100 cm) hardsetting mottled texture contrast soils, Red and Brown Podzolic Soils (Dr3.21, Dr3.31, Db2.11, Db2.21) on crests grading to Yellow Podzolic Soils (Dy2.11, Dy3.11) on lower slopes and in drainage lines.*
>
> *Limitations – moderately reactive highly plastic subsoil, low soil fertility, poor soil drainage.*

3.2 ACID SULFATE SOILS (ASS)

Information on the SEED (Sharing and Enabling Environmental Data) Map Viewer of Acid Sulfate Soils Risk and the NSW Planning Portal show that the subject site is not on any class of Acid Sulfate Soils (ASS). ASS are not expected on site and analysis of soil samples has not been undertaken in the DSI.

3.3 SURFACE HYDROLOGY AND LOCAL HYDROGEOLOGY

A small ephemeral watercourse is located south-west of the cleared portion of the site and traverses the site. The nearest water course to the site is Jerrys Creek, approximately 1.1 km west-southwest of the site perimeter. Cosgroves Creek is approximately 1.9 km east. Both creeks are at the extent of their tributaries. Jerrys Creek runs approximately 3.8 km north-west until it joins the Nepean River in Wallacia. Cosgroves Creek runs north-east for approximately 10.4 km before joining South Creek in Luddenham.

Numerous small-medium sized dams occupy neighbouring properties.

4. CONTAMINANTS OF CONCERN

The selection of contaminants of concern is based on the site-specific conceptual site model from the Limited Phase II ESA (Ref: 191318_Phase II) undertaken in May 2020. Identified contaminants of concern have been identified and include substances typically associated with industrial uses, waste storage and uncontrolled fill materials.

Contaminants of concern selected for this DSI include:

- Heavy metals including; Arsenic (As), Cadmium (Cd), Chromium (Cr), Copper (Cu), Lead (Pb), Mercury (Hg), Nickel (Ni) and Zinc (Zn);
- Total Recoverable Hydrocarbons (TRH);
- Benzene, Toluene, Ethylbenzene, Xylenes and Naphthalene (BTEXN);
- Polycyclic Aromatic Hydrocarbons (PAHs);
- Organochlorine Pesticides (OCPs) and Organophosphorus Pesticides (OPPs);
- Polychlorinated Biphenyls (PCBs); and
- Asbestos Containing Materials (ACM).

Each selected contaminant of concern is detailed in the following sub-sections.

4.1 HEAVY METALS

Heavy metals include highly toxic naturally occurring elements that may be present fill materials on site. Industrial uses and improper management of chemicals containing heavy metals may contribute to potential soil contamination on site. Additionally, fuel combustion and agricultural practices may contribute to heightened heavy metal concentrations in the environment.

Due to usage and materials stored, there is a potential for heavy metals to be present on Site in all identified areas of concern. Heavy metals included for analysis in the DSI are Arsenic (As), Cadmium (Cd), Chromium (Cr), Copper (Cu), Lead (Pb), Mercury (Hg), Nickel (Ni) and Zinc (Zn).

4.2 TOTAL RECOVERABLE HYDROCARBONS (TRH)

Total Recoverable Hydrocarbons (TRH) refer to the extracted biogenic and petrogenic hydrocarbon components of a sample. TRH compounds are measured in fractions, with each fraction representing one of four carbon groupings (F1, F2, F3 and F4).

TRH fractions are based on the length of the compounds carbon chains. Shorter chained fractions (F1 and F2) are volatile chemicals that vaporise readily and are considered more toxic. Longer chained fractions (F3 and F4) are non-volatile chemicals that do not pose a vapour risk. All TRH fractions pose threats to the environment and health risks to humans including through inhalation of vapours (F1 and F2) or through dermal contact and ingestion (or inhalation) of contaminated soils (F3 and F4).

Specific aromatic carbon compounds (BTEXN), although part of the F1 and F2 TRH fractions, are dealt with separately due to their higher toxicity compared to other TRH compounds.

Historical imagery of the Site showed the small shed at the eastern portion of the site (Area of Concern #3) was utilised as a truck maintenance workshop. Additionally, oils and petroleum

products containing BTEXN may have been stored or utilised in this area, potentially contaminating soils.

4.3 BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND NAPHTHALENE (BTEXN)

Benzene, Toluene, Ethylbenzene, Xylenes and Naphthalene (BTEXN) are a group of VOCs that are present in crude oils and are released during fuel combustion. Heavy vehicular traffic is the primary emission source of BTEXN into the environment, however, the storage and handling of oils and petroleum products also contributes to emissions. Leaks and spills of fuels containing BTEXN can potentially impact soil and groundwater.

In addition to TRH, BTEXN may be present in areas of concern where vehicles were stored, maintenance activities were undertaken or oil and/or fuels were stored (Areas of Concern #1 and #3).

4.4 POLYCYCLIC AROMATIC HYDROCARBONS (PAHS)

Polycyclic Aromatic Hydrocarbons (PAHs) are a class of naturally occurring chemicals found in oils and produced during the combustion and semi-combustion of natural materials (e.g. during bushfires) or during fuel combustion (e.g. exhaust fumes from vehicles). Numerous PAHs pose a threat to human health due to carcinogenicity and they are particularly persistent in aquatic habitats, bioaccumulating readily in organisms.

In addition to TRH and BTEXN, PAHs may be present in areas of concern where vehicles were stored, maintenance activities were undertaken or oil and/or fuels were stored (Areas of Concern #1 and #3).

4.5 ORGANOCHLORINE PESTICIDES (OCPS) AND ORGANOPHOSPHORUS PESTICIDES (OPPS)

Organochlorine Pesticides (OCPs) and Organophosphorus Pesticides (OPPs) are persistent, bioaccumulative insecticides that have been widely used in Australian agricultural practices since the 1940's. Due to their persistence in the environment and the toxicity of compounds such as DDT, aldrin and dieldrin, OCPs and OPPs pose a significant threat to the health of many organisms (including potential carcinogenicity in humans) and they bioaccumulate readily in the food chain.

Previously stockpiled organic materials and timber products in Area of Concern #3 have the potential to be contaminated with OCPs and OPPs. Additionally, due to the unknown origins of fill materials used to establish the northern carpark (Area of Concern #1), sample collection and analysis for OCPs and OPPs was undertaken.

4.6 POLYCHLORINATED BIPHENYLS (PCBS)

Polychlorinated biphenyls (PCBs) are chlorinated hydrocarbons widely distributed as chemical insulators and coolants until their ban in the 1970's. PCBs were prevalent in industrial products such as paints and inks, and within electrical transformers and capacitors.

PCBs are a highly toxic and persistent chemical compound that pose a significant threat to the environment and organisms through bioaccumulation.

Use of the shed at the eastern portion of the Site (Area of Concern #3) for truck maintenance activities may have included the use of oils in engines, motors and hydraulic systems that potentially contained PCBs. Additionally, due to the unknown history of chemicals on site, coolants, lubricants and other oils containing PCBs may have been stored or utilised in this area.

4.7 ASBESTOS CONTAINING MATERIALS (ACM)

Asbestos is a naturally occurring silicate material that was heavily used in Australia during the mid-late 20th century. It is a hazardous carcinogen that has severe health implications to those exposed to it.

Industrial uses of asbestos containing materials (ACM) include fibro cement sheets, drain pipes, roofs and gutters. As of 2003, there has been a total ban of new ACM use in Australia, however, ACM is present in many structures and products still in use today. As per NSW EPA *Waste Classification Guidelines* (2014), ACM waste is classed as a "special waste" that must abide strict regulations regarding its transport and disposal.

During demolition of structures constructed of or containing ACM, ACM waste may be wrongfully disposed of as construction and demolition (C&D) waste and circulated within recovered aggregates or recycled materials.

Due to the unknown origins of fill materials used to establish the northern carpark (Area of Concern #1) and potentially contaminated stockpiled materials (Area of Concern #2), sample collection and analysis for ACM was undertaken.

4.8 CONCEPTUAL SITE MODEL (CSM)

A conceptual site model (CSM) has been prepared in accordance with the ASC NEPM (Table 4-1). The CSM is a representation of site-related information regarding contamination sources, receptors and exposure pathways between those sources and receptors.

Table 4-1: Conceptual Site Model

Potential Sources of Contamination	Primary Release Mechanism	Potentially Impacted Media	Contaminants of Potential Concern	Potential Receptors		Exposure Pathways		Risk of Contamination
				Human	Environment	Human	Environment	
Potentially contaminated fill materials	Application/ disturbance/leaching of contaminated fill materials on/off site	Soil Groundwater Surface Water	Heavy metals TRHs BTEXN PAHs OCPs/OPPs PCBs ACM	Workers on site Neighbouring premises if contamination migrates off-site	Soils Waterways Native Habitats	Dermal contact Inhalation of dust and vapours Ingestion	Surface water runoff Soils Groundwater	Low to Medium
Potentially contaminated stockpiled materials	Storage/disturbance/ leaching of contaminated stockpiled materials on/off site	Soil Groundwater Surface Water	Heavy metals BTEXN TRHs PAHs OCPs/OPPs PCBs ACM	Workers on site Neighbouring premises if contamination migrates off-site	Soils Waterways Native Habitats	Dermal contact Inhalation of dust and vapours Ingestion	Surface water runoff Soils Groundwater	Low to Medium
Commercial vehicle maintenance and storage activities	Improper storage and leaking of hazardous materials	Soil Groundwater Surface Water	Heavy metals BTEXN TRHs PAHs PCBs	Workers on site Neighbouring premises if contamination migrates off-site	Soils Waterways Native Habitats	Dermal contact Inhalation of dust and vapours Ingestion	Surface water runoff Soils Groundwater	Low to Medium

TRHs: Total Recoverable Hydrocarbons

BTEXN: Benzene, Toluene, Ethylbenzene, Xylene & Naphthalene

PAHs: Polycyclic Aromatic Hydrocarbons

OCPs/OPPs: Organochlorine Pesticides and Organophosphate Pesticides

PCBs: Polychlorinated Biphenyls

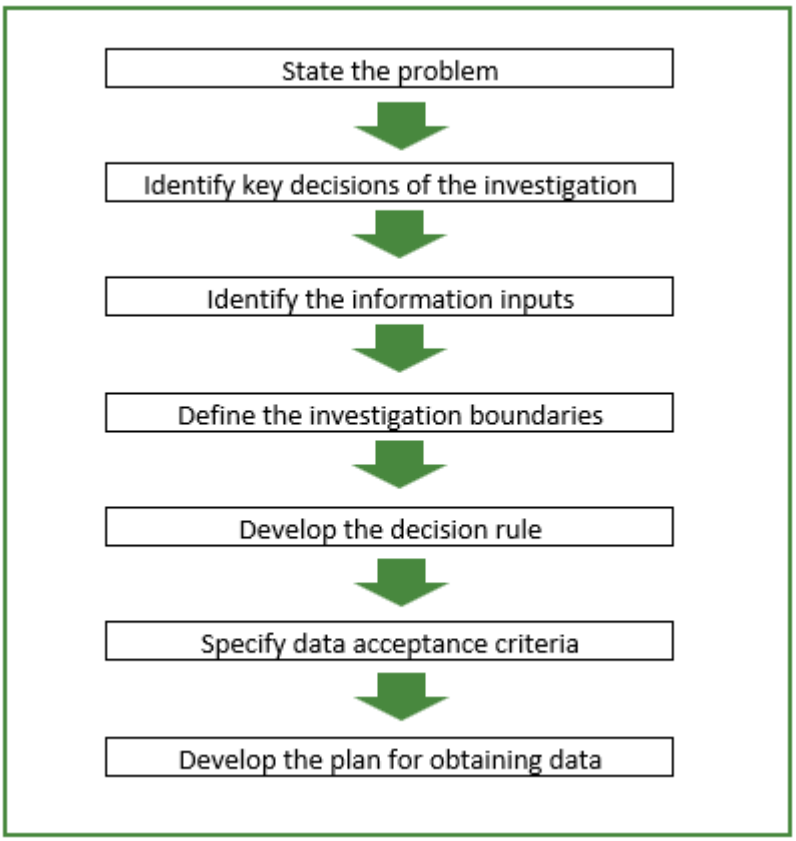
ACM: Asbestos Containing Materials

5. DATA QUALITY OBJECTIVES (DQO)

The data quality objectives (DQO) process is a seven-step iterative planning approach that is used to define the type, quantity and quality of data needed to inform decisions relating to the environmental condition of a site.

The summary of the process as shown in Figure 5-1 below, is adapted from US EPA (2006a), NSW DEC (2006) and the ASC NEPM.

Figure 5-1: The DQO Process



5.1 STEP 1 – STATE THE PROBLEM

A summation of the site's contamination problem that requires new environmental information and to identify the available resources to resolve this problem. A preliminary Conceptual Site Model (CSM) is needed to complete this step.

- State the objectives of the proposed investigation;
- Provide a brief summary of the site contamination issues to be addressed by the investigation;
- State the reason for the project's purpose;
- What site constraints limit the investigation? (e.g. time, resources, climatic conditions, access restrictions);
- What resources are available for the investigation?;
- What is the timeframe for the investigation's completion?;
- Is there any community concerns or local issues that will influence the design and implementation of the environmental assessment?; and

- Who is the regulatory authority(ies) and the local government area?

- The problem relates to Council concerns on the contamination status of the Site at three (3) areas of concern.
- The principal purpose of this DSI is to chemically assess soil samples and determine the contamination status of three (3) areas of concern, as defined by Council.
- Limited constraints are involved with this DSI; all identified areas of concern are accessible and appropriate resources are available.
- Sample collection and chemical analysis will be undertaken for identified contaminants of concern (outlined in Section 4).
- The timeline for the DSI is to present an assessment report to Council as soon as practicable.
- The Site is located within the Penrith City Council local government area. The proposed development is also assessable by the NSW EPA.

5.2 STEP 2 – IDENTIFY THE KEY DECISIONS OF THE INVESTIGATION

Step two requires identifying the key decisions that need to be taken concerning the site's contamination issue. Such as; is further investigation, remediation or treatment required? What new environmental data is required to make these?

Key decision making requires a full understanding of the site's current contamination status and any unacceptable risk to human health or the environment that it may potentially pose. This step should assist in developing a decision statement linking the principal study objective(s) to the possible actions that will address the problem.

- Determining the contamination status of the identified contaminants of concern (COC) within the identified areas of concern.
- Determining the concentrations of contaminants, and where present, the risks they may pose to human health and the environment.
- Where present, determining the appropriate method to remove/remediate contaminant concentrations to levels that do not pose a risk to human health and the environment.

5.3 STEP 3 – IDENTIFY THE INFORMATION INPUTS

Identify the information/new data that will be required to resolve the key decision statements. Identify where this data is sourced and:

- The media that needs to be collected, (soil, groundwater, sediments, air etc.);
- The parameters to be measured for each media;
- Site criteria for each contaminant of concern;

- The analytical methods required to sufficiently identify any harmful levels of contaminants of concern so that these can be assessed against the SAC;
- The basis for any decisions to be made from field screening and what action is to be taken if a defined concentration is attained; and
- Any additional information needed to make the required decisions.

- Soil samples will be collected to determine contamination status of areas of concern.
- Collected samples will be analysed for the identified contaminants of concern.
- The SAC for this DSI is detailed in Section 5.8.
- All soil samples are submitted to a NATA accredited laboratory for chemicals analysis.

5.4 STEP 4 – DEFINE THE INVESTIGATION BOUNDARIES

The fourth step involves specifying the spatial and temporal aspects of the environmental media that the data must represent to support decision(s). Such as defining:

- The characteristics that define the media of interest;
- The spatial extent (property boundaries, site accessibility constraints, potential exposure areas)
- Time and budget constraints;
- The lateral and vertical extent of the believed distribution of contaminants of concern;
- Scale of the decisions required: site-wide, each lot etc; and
- Identify any practical site constraints.

- The media of interest is the surface soils within the identified areas of concern.
- Areas of concern have been defined and are all within the property boundary.
- Limited constraints are involved with this DSI; all identified areas of concern are accessible and appropriate resources are available.

5.5 STEP 5 – DEVELOP THE DECISION RULE

The fifth step involves defining the parameter of interest, specifying the action level, and integrating information from Steps 1–4 into a single statement that gives a logical basis for choosing between alternative actions. The statistical parameter (the parameter of interest) characterises the population (media of interest).

- The comparison of sample results against the SAC to determine the extent of contamination (if present) and identify any specific areas requiring remediation (if required).
- Make a statement on the contamination status of the three (3) areas of concern in relation to the identified contaminants of concern at a 95% statistical degree of certainty.

5.5.1 Rinsate Blanks

One (1) rinsate blank will be collected and analysed from each sampling day if non-disposable sampling equipment was used on that day. The rinsate blank will be analysed for at least one of the analyses undertaken for collected field samples.

- Dedicated and disposable sampling equipment will be used to collect samples.
- Soil samples will be collected with new gloves at each sampling point.
- Rinsate was collected for any sampling equipment that is reused.

5.5.2 Trip Spikes and Trip Blank Samples

If sampling is required for VOCs, one trip spike and trip blank sample will be used for each day of sampling.

- Soil samples will be analysed for VOCs (BTEXN). No gas or vapour samples will be collected, therefore no trip spike or trip blank samples are required.

5.5.3 Field Duplicates and Field Triplicates

Field duplicate and field triplicates will be collected at a rate of one per twenty (5%) site samples. Collected duplicates and triplicates will be analysed for at least one of the COC the parent sample is also tested for. The relative percent difference (RPD) of concentrations of relevant COC, between the original sample and the duplicate/triplicate will be calculated.

- Two (2) field duplicate samples were collected and included in the laboratory analysis.

5.5.4 If/Then Decision Rules

A statement that defines the conditions that would cause a decision-maker to choose from alternative actions.

- If the selected sampling point within a grid is not available (e.g. surface soils inaccessible), then the nearest accessible sampling point within the grid is selected.

5.6 STEP 6 – SPECIFY DATA ACCEPTANCE CRITERIA

The sixth step involves specifying the decision maker's acceptable limits on decision errors, which are used to establish performance goals for limiting uncertainties in the data. Decision errors are

incorrect decisions caused by using data that is not representative of site conditions due to sampling or analytical error. As a result, a decision may be made that site clean-up is not needed when really it is, or vice versa.

There are two types of decision error:

1. **Sampling errors:** when the sample program does not adequately detect a contaminant of concern's spatial variability across the site, meaning the collected samples are not representative of the site conditions; and
2. **Measurement errors:** during sample collection, handling, preparation, analysis and data reduction.

BE will mitigate the risk of decision error by:

- Assigning fieldwork tasks to suitably experienced BE consultants;
- Submitting all samples to a NATA accredited laboratory for analysis; and
- Assigning data interpretation tasks to suitably experienced BE consultants, outsourcing to technical experts where required.

5.7 STEP 7 – DEVELOP THE PLAN FOR OBTAINING DATA

The seventh step involves identifying the most resource-effective sampling and analysis design for generating the necessary data required to satisfy the DQOs.

The (SAQP) has been prepared in accordance with the DER *Contaminated Sites Management Series* guidelines. To maintain data integrity and reliability, the following measures were adopted:

- Strict adherence to sampling QA/QC protocols.
- Use of appropriate laboratory limits of reporting for COC.

5.8 SITE ADOPTED CRITERIA (SAC)

A site assessment determines what present and future risks exist from a contaminated site for human and environmental health and to provide potential remediation or management plans to make a site fit for its intended ongoing use. In order to evaluate the risks from contaminants, site criteria are adopted which are a set of values of the tolerable limit of contaminant that does not pose a threat to human or ecological health. Thus, Site Adopted Criteria (SAC) is applied against a site's contaminant concentrations with the level of risk assessed for the site in question. The following outlines the SAC values used in this assessment.

5.8.1 National Environmental Protection (Assessment of Site Contamination) Measure (1999)

Laboratory results associated with surface soil materials have been assessed against the investigation and screening levels in Schedule B1 of National Environment Protection (Assessment of Site Contamination) Measure 1999 (ASC NEPM).

These guidelines have been endorsed by the NSW EPA under the *Contaminated Land Management* (CLM) *Act*, 1997. The ASC NEPM provides soil investigation and screening levels for commonly encountered contaminants which are applicable to four (4) generic land use settings and include consideration of the soil type and the depth of contamination, where relevant. Where criteria is absent from the NEPM, other authoritative sources are sought, such as the Cooperative Research Centre for Contamination Assessment and Remediation of the Environment (CRC Care) and the US EPA.

The soil investigation and screening levels are described in the ASC NEPM as follows:

- **Health Investigation Level (HIL)**
  Health investigation levels (HILs) are generic assessment criteria designed to be used in the first stage of an assessment of potential risks to human health from chronic exposure to contaminants. HILs are generic to all soil types and generally apply to the top 3 m of soil.

- **Health Screening Level (HSL)**
  Health Screening Levels (HSLs) have been derived for BTEX, naphthalene and four carbon chain fractions, as adopted in NEPC (2013). HSLs have been calculated to account for depth (from below surface to >4 m), soil textures (sand, silt and clay) and the land use settings.

- **Ecological Investigation Level (EIL)**
  Ecological Investigation Levels (EILs) have been developed for selected metals and organic compounds and are applicable for assessing risk to terrestrial ecosystems. EILs depend on land use scenarios and specific soil physiochemical properties, such as pH, cation exchange capacity (CEC), iron and carbon content, etc. They generally apply to the top 2 m of soil.

- **Ecological Screening Level (ESL)**
  Ecological screening levels (ESLs) have been developed for selected petroleum hydrocarbon compounds and total petroleum hydrocarbon (TPH) fractions and are applicable for assessing risk to terrestrial ecosystems. ESLs broadly apply to coarse- and fine-grained soils and various land uses. They are generally applicable to the top 2 m of soil.

- **Management Limits**
  Petroleum hydrocarbon management limits ('management limits') are only applicable to petroleum hydrocarbon compounds. They are valid as screening levels following evaluation of human health and ecological risks, and risks to groundwater resources. Management limits apply to all soil depth, based on site-specific considerations for land use and soil type.

The four (4) generic land use settings include:

- HIL A - residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake (no poultry) and includes; children's day care centres, preschools and primary schools;
- HIL B - residential with minimal opportunities for soil access includes dwellings with fully and permanently paved yard space such as high-rise buildings and flats;
- HIL C - public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths. It does not include undeveloped public open space (such as urban bushland and reserves) which should be subject to a site-specific assessment where appropriate; and

- **HIL D - commercial/industrial such as shops, offices, factories and industrial sites.**

For the purposes of this assessment **HIL-D** is relevant. The ASC NEPM considers three (3) different soil textures and derives HSLs for each different soil classification, as per AS 1726. Table 5-1 displays the soil classification for HSL.

Table 5-1: HSL Soil Classification

Soil Type	Description
Sand	Coarse-grained soil
Silt	**Fine-grained soil - silts and clays (liquid limit <50 %)**
Clay	**Fine-grained soil - silts and clays (liquid limit >50 %)**

The summarised investigation and screening limits for land use scenario is HIL-D (commercial/industrial) for soil type silt and clay (fine-grained soil). Field assessment during sample collection revealed surface soils were primarily silty and clay loams. Individual soil classifications per area of concern are described in Section 5.9.1 and soil classification methods are detailed in Section 5.9.6.

The SAC for the appropriate land use scenarios is shown in Table 5-2. Where relevant, the specific soil classification per criteria limit is listed beside the chemical name (e.g. TRH and BTEX).

Table 5-2: SAC for Identified Contaminants of Concern

Chemical	HIL-D (mg/kg)	ESL-D (mg/kg)	EIL-D (mg/kg)	HSL-D (%)
Metals and Inorganics				
Arsenic	3,000		160	
Cadmium	900			
Chromium (VI)	3,600			
Copper	240,000			
Lead	1,500			
Mercury (inorganic)	730			
Nickel	6,000			
Zinc	400,000			
Polycyclic Aromatic Hydrocarbons (PAHs)				
Benzo(a)pyrene		0.7		
Benzo(a)pyrene TEQ	40			
Total PAHs	4,000			
Other Organics				
PCB	7			
Organochlorine Pesticides (OCPs)				
DDT+DDE+DDD	3,600			
Aldrin and dieldrin	45			
Chlordane	530			

Chemical	HIL-D (mg/kg)	ESL-D (mg/kg)	EIL-D (mg/kg)	HSL-D (%)
Endosulfan	2,000			
Endrin	100			
Heptachlor	50			
HCB	80			
Methoxychlor	2,500			
Organophosphorus Pesticides (OPPs)				
Chlorpyrifos	2,000			
Total Recoverable Hydrocarbons (TRH)				
C6 – C10 Fraction (*Coarse/Fine*)		215		
C6 – C10 Fraction minus BTEX (F1) (*Coarse/Fine*)		215		
>C10 - C16 Fraction (*Coarse/Fine*)		170		
>C16 - C34 Fraction (*Fine*)		2,500		
>C34 - C40 Fraction (*Fine*)		6,600		
BTEXN				
Benzene (*Fine*)		95		
Toluene (*Fine*)		135		
Ethylbenzene (*Fine*)		185		
Xylenes (*Fine*)		95		
Naphthalene			370	
Asbestos Containing Material (ACM)				
Bonded Asbestos Containing Material (ACM)				0.05
Fibrous Asbestos (FA) and Asbestos Fines (AF) (friable asbestos)				0.001
All forms of asbestos				No visible asbestos for surface soil.

Note: Criteria left blank where none applies

5.9 SAMPLING METHODOLOGY

5.9.1 Sampling Locations and Methods

A total of 28 surface soil samples were collected amongst the three (3) areas of concern by BE consultants on 25 June 2021, as detailed in Table 5-3. Soil samples were analysed for the contaminants of concern detailed in Section 4.

A systematic sampling pattern was adopted where an equally spaced grid was placed over each area of concern and soil samples were collected from within each square. Where possible, samples were collected from the centre of the grid (except where defined and displayed). The following sub-sections display each area of concern and detail observations and sample collection rational.

Table 5-3: Areas of Concern

Area of Concern #	Approx. Area Size (m^2)	No. of Samples Collected
1	2,500	10
2	2,500	10
3	120	8
TOTAL	**5,120**	**28**

5.9.1.1 Area of Concern #1

Figure 5-2 displays the Area of Concern #1, the shale covered car parking area north of the residence. Ten (10) soil samples were collected from this area. Soils within this area were classified as a silty clay loam, high in shale, and were predominantly dark grey in colour.

The entire area was free of stored materials or vehicles, and all defined grid points and sample locations were accessible. Samples were collected from the surface after the top layer of shale was broken with a mattock.

Figure 5-2: Area of Concern #1

Source: Google Earth 2021

↑N Not to scale	LEGEND: Area of Concern Boundary Sample ID	Benbow Environmental 25-27 Sherwood Street, Northmead NSW 2152

5.9.1.2 Area of Concern #2

Figure 5-3 displays the Area of Concern #2, the area where the stockpiles of material were previously located on the western portion of the site. Ten (10) soil samples (and one (1) duplicate sample) were collected from this area. Soils within this area were classified as a silty loam, and were dark brown, yellow, orange and/or grey in colour. Samples S-15-S18 were waterlogged.

Numerous large (>3 m in height) stockpiles of untreated timber products were stored in this area during the sampling event. Where possible, samples were collected within the centre of each grid area of concern. Where not possible (e.g. access to soils at the centre of the grid was obstructed by stockpiled material), samples were collected on the bare earth closest to the edge of the stockpiled material.

Sample ID's S-11, S-12, S-13, S-14, S-19 and S-20 were collected on bare earth (soils) at the base and beside stockpiled materials. Sample ID's S-15, S-16, S-17 and S-18 (inclusive) were free of stockpiled materials and soil was collected from the centre of each grid.

Figure 5-3: Area of Concern #2

Source: Google Earth 2021

↑N
Not to scale

LEGEND:
Area of Concern Boundary
Sample ID

Benbow Environmental
25-27 Sherwood Street,
Northmead NSW 2152

5.9.1.3 Area of Concern #3

Figure 5-4 displays the Area of Concern #3, the small shed and surrounds at the eastern portion of the site. Eight (8) soil samples (and one (1) duplicate sample) were collected from this area. Soils within this area were classified as a sandy loam and were all olive green in colour.

At the time of sampling, the shed and its immediate surrounds was vacant, free of stored vehicles and materials. The floor of the shed consists of a slab of concrete (with minor cracking), and the surrounds consisted of sealed hardstand material, offering limited avenues for potential contaminants to migrate into soils. Minor, scattered staining was observed on the hardstand area. The grade dips south-west in this portion of the site, therefore, it was decided that samples would be collected from the surface area outside of the shed where any potential contaminants (or contaminated soils) might accumulate.

Due to the hardstand being intact, collection of surface samples was restricted to wherever the largest accumulation of soils was present on top of the hardstand within the grid.

Figure 5-4: Area of Concern #3

Source: Google Earth 2021

↑N Not to scale	LEGEND: Area of Concern Boundary Sample ID	Benbow Environmental 25-27 Sherwood Street, Northmead NSW 2152

5.9.2 Sampling Equipment and Methods

All soil samples were collected via hand instruments (trowel, spoon) and by gloved hand. Gloves were changed between each sampling point to avoid cross-contamination. Collected soils were placed into containers supplied by ALS Environmental. Two (2) sample containers were collected at each sampling point, as follows:

1. 1 x 250 mL glass sample jar – heavy metals, TRH, BTEXN, PAH, OCPs/OPPs and PCBs; and
2. 1 x 500 mL polyethylene sample bag – ACM.

5.9.3 Equipment Decontamination Procedures

Between each sampling point, any equipment that was to be re-used was decontaminated to avoid cross-contamination. Equipment was scrubbed with a solution of 5% Decon90, rinsed with distilled water, dried with a clean paper towel and rinsed again.

New gloves were used between each sampling point to avoid cross-contamination.

5.9.4 Sample Handling Procedures

Each sample is identified by the following information, which was written on the container label:

- Project number;
- Sampler;
- Sample ID (location number); and
- Date and time of sampling.

Immediately after collection, samples were placed into an Esky and covered in ice. The Esky was transported directly to ALS Environmental at the end of the sampling day in a chilled state.

An electronic Completed Chain of Custody (COC) document accompanied all samples to the laboratory. Acknowledgement that the samples were received in a satisfactory condition in relation to transport time and chilled condition were recorded on the COC (Attachment 1).

5.9.5 Sample Preservation Methods

Apart from the use of ice for container temperature control, no chemical preservatives were added to the soil sample jars or bags.

5.9.6 Soil Classification Methods

Soil texture is assessed utilising field sampling methods, including the behaviour of moist boluses when manipulated by hand. Bolus texture indicates composition, e.g. stickiness of bolus indicates clay content, bolus smoothness indicates silt content. Soil grain sizes are judged by side-by-side comparison to soil charts with the aid of a hand lens. Description techniques are based on AS 1729-2017.

5.10 PHOTOGRAPHS

Photograph 1: Soils being collected in area of concern #1

Photograph 2: Example of soils present in area of concern #1

Photograph 3: Example of stockpiled materials (timber) stored in area of concern #2

Photograph 4: Area of concern #2 including stormwater infrastructure and stockpiled timber

Photograph 5: Example of soils present in area of concern #2 (beside timber stockpile)

Photograph 6: Example of soils present in area of concern #2 (centre of grid)

Photograph 7: Soils being collected in area of concern #3

Photograph 8: Example of soils present in area of concern #3

5.11 LABORATORY ANALYSIS

5.11.1 Analytes

The selection of analytes is based on the site-specific Conceptual Site Model from the Limited Phase II ESA (Ref: 191318_Phase II) undertaken in May 2020. Identified contaminants of concern include substances typically associated with industrial uses and contaminated wastes.

Selected analytes for chemical analysis include the following:

- Heavy metals: Arsenic (As), Cadmium (Cd), Chromium (Cr), Copper (Cu), Lead (Pb), Mercury (Hg), Nickel (Ni), Zinc (Zn);
- TRH;
- BTEXN;
- PAHs;
- OCPs and OPPs;
- PCBs; and
- Asbestos.

5.11.2 Testing Methods

The soil samples were analysed by ALS Environmental, a National Association of Testing Authorities (NATA) accredited laboratory. The analytical methods used by ALS Environmental are described in the laboratory provided Quality Assurance and Quality Control (QA/QC) reports (Attachment 1).

5.12 QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC) EVALUATION

Quality Assurance and Quality Control (QA/QC) applied to this project were in accordance with AS 4482.1-2005 in regard to the following:

- **Precision** – measures the reproducibility of measurements under a given set of conditions. The precision of the laboratory data and sampling techniques is assessed by calculating the Relative Percent Difference (RPD) of duplicate samples.
- **Accuracy** – measures the bias in a measurement system. The accuracy of the laboratory data that is generated during this study is a measure of the closeness of the analytical results obtained by a method to the 'true' value. Accuracy is assessed by reference to the analytical results of laboratory control samples, laboratory spikes and analyses against reference standards.
- **Representativeness** – expresses the degree which sample data accurately and precisely represents a characteristic of a population or an environmental condition. Representativeness is achieved by collecting samples on a representative basis across the site, and by using an adequate number of sample locations to characterise the site to the required accuracy.
- **Comparability** – expresses the confidence with which one data set can be compared with another. This is achieved through maintaining a level of consistency in techniques used to collect samples; ensuring analysing laboratories use consistent analysis techniques and reporting methods.
- **Completeness** – is defined as the percentage of measurements made which are judged to be valid measurements. The completeness goal is set at there being sufficient valid data generated during the study.

- Two (2) field duplicate soil samples were collected for QA/QC purposes. Results are discussed in the section below.

- Rinsate water was collected at the conclusion of all sampling events. Collection occurred from deionised water poured over field-cleaned sampling trowels.

Results for QA/QC data evaluation are detailed in Section 5.12.1 and summarised below.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- Laboratory Control outliers exist.
- Matrix Spike outliers exist.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.
- **NO** Analysis Holding Time Outliers exist.
- **NO** Quality Control Sample Frequency Outliers exist.

5.12.1 Duplicate Results

Two (2) field duplicate samples (Sample ID: S-13D and DUP-2) were taken to assess the homogeneity of the sample matrix. Duplicate sample locations are displayed in Figure 5-5.

Figure 5-5: Duplicate Sample Locations

To compare the results between the duplicate to the original sample, the Relative Percent Difference (RPD) is calculated for each analyte that had results above the LOR. The RPD equals:

$$RPD\ (\%) = 100 * \frac{|\ X_A - X_B\ |}{½\ (X_A + X_B)}$$

where X_A and X_B are the analyte levels of original sample A and duplicate sample B, respectively.

The accuracy of RPD values for field duplicate samples are compared to a criterion of <50 % RPD. Exceedances of the RPD were found in two (2) analytes; lead and chromium (yellow highlighted results in Table 5-4). All sample and duplicate results are displayed as mg/kg.

Low concentrations for both analytes may have contributed to the RPD exceedances. The calculated RPD is not expected to affect the integrity of the results as both results remain well below the nominated criteria. No other exceedances were found. Table 5-5 shows the QA/QC data evaluation undertaken for the collected samples and duplicates.

Table 5-4: Duplicate Results RPD % (mg/kg)

Analyte	LOR	S-13	S-13D	RPD %	S-21	DUP-2	RPD %
Heavy Metals							
Arsenic	5	5	5	0	5	5	0
Cadmium	1	1	1	0	1	1	0
Chromium	2	21	25	17	14	30	**73**
Copper	5	34	30	13	27	27	0
Lead	5	29	16	**58**	24	24	0
Mercury	2	22	16	32	17	18	6
Nickel	5	122	80	42	132	163	21
Zinc	0.1	0.1	0.1	0	0.1	0.1	0
TRH							
C6 – C10 Fraction	10	10	10	0	10	10	0
C6 – C10 Fraction minus BTEX (F1)	10	10	10	0	10	10	0
>C10 – C16 Fraction	50	50	50	0	50	50	0
> C16 – C34 Fraction	100	100	100	0	2550	2970	15
> C34 – C40 Fraction	100	100	130	26	1320	1470	11
>C10-C16 Fraction minus Naphth. (F2)	50	50	50	0	50	50	0
BTEXN							
Benzene	0.2	0.2	0.2	0	0.2	0.2	0
Toluene	0.5	0.5	0.5	0	0.5	0.5	0
Ethylbenzene	0.5	0.5	0.5	0	0.5	0.5	0
Total Xylenes	0.5	0.5	0.5	0	0.5	0.5	0
Naphthalene	1	1	1	0	1	1	0
PAH							
Benzo(a)pyrene	0.5	0.5	0.5	0	0.5	0.5	0
Sum polycyclic aromatic hydrocarbons	0.5	0.5	0.5	0	3.4	3.6	6
Benzo(a)pyrene TEQ (zero)	0.5	0.5	0.5	0	0.5	0.6	18
Benzo(a)pyrene TEQ (LOR)	0.5	1.2	1.2	0	1.2	1.2	0
OCPS and OPPs							
HCB (Hexa chloro benzene)	0.05	0.05	0.05	0	0.05	0.05	0
Heptachlor	0.05	0.05	0.05	0	0.05	0.05	0
Total Chlordane (sum)	0.05	0.05	0.05	0	0.05	0.05	0
Endrin	0.05	0.05	0.05	0	0.05	0.05	0
Endosulfan (sum)	0.05	0.05	0.05	0	0.05	0.05	0
Methoxychlor	0.2	0.2	0.2	0	0.2	0.2	0
Sum of DDD + DDE + DDT	0.05	0.05	0.05	0	0.05	0.05	0
Chlorpyrifos	0.05	0.05	0.05	0	0.05	0.05	0
PCBs							
PCB (Poly chlorinated biphenyls)	0.1	0.1	0.1	0	0.1	0.1	0

Table 5-5: QA/QC Data Evaluation

Data Quality Objectives	Frequency	Achieved?	Data Quality Indicator	Achieved?
Precision				
Laboratory Duplicates (DUP)	5 % of total number of samples	Yes	Within DUP recovery limits for each compound	Yes
Accuracy				
Blind field duplicates	5 % of total number of samples	Yes	<50% RPD	No – exceedances for Lead (S-13D) and Chromium (DUP-2)
Laboratory Control Spikes (LCS)	5 % of total number of samples	Yes	Within LCS recovery limits for each compound	No – recovery greater than upper control limit for Pentachlorophenol
Matrix Spikes (MS)	5 % of total number of samples	Yes	Within MS recovery limits for each compound	No – recovery not determined, background level greater than or equal to 4x spike level for Chromium and Zinc
Trip Blanks (TB)	1 per cooler	N/A	Below limits of reporting (LOR)	N/A
Trip Spikes (TS)	1 per cooler	N/A	Within acceptable recovery limits	N/A
Representativeness				
Method Blanks (MB)	5 % of total number of samples	Yes	Variance between sample results and LOR	Yes
Sampling appropriate for media and analytes	All Samples	Yes	No errors in selection of media and analytes	Yes
Sample collected/analysed within holding times	All Samples	Yes	Received and analysed by ALS Environmental within sample holding times	Yes
Comparability				
Standard operating procedures for sample collection and handling	All Samples	Yes	No errors in compliance with procedures	Yes
Standard analytical methods for analytes	All Samples	Yes	No errors in selection of analytical methods	Yes

Table 5-5: QA/QC Data Evaluation

Data Quality Objectives	Frequency	Achieved?	Data Quality Indicator	Achieved?
Consistent field conditions and lab analysis	All Samples	Yes	No variations reported	Yes
Limit of reporting appropriate and consistent	All Samples	Yes	No errors in limit of reporting	Yes
Completeness				
Soil description and COCs properly completed	All Samples	Yes	No errors in COC	Yes
Appropriate documentation	All Samples	Yes	No errors in documentation	Yes
Satisfactory QC sample results	All QA/QC Samples	No	No reported outliers in QC report	No – LCS and MS outliers occurred
Data from critical samples is considered valid	Critical samples	Yes	Consistency within results from critical samples	Yes

5.12.2 Rinsate Results

Rinsate results are displayed in Table 5-6. One (1) rinsate blank (Sample ID: RINSATE) was collected and analysed at the conclusion of the sampling event. Rinsate blank collection is undertaken by collection of deionised water after it is poured over field-cleaned sampling equipment. All non-disposable sampling equipment (e.g. metal trowels and spoons) utilised during sampling was subjected to the rinsate blank analysis for heavy metals, TRH and BTEXN.

Rinsate analysis showed fractional concentrations of the heavy metals (chromium, copper and zinc, highlighted below). TRH and BTEXN were either not present or below their respective LOR. Due to concentrations above each respective analyte LOR – likely attributed to the use of metal sampling equipment – the rinsate blank was considered contaminated.

However, the impact of such miniscule concentrations on collected samples is considered negligible and cross-contamination between samples is unlikely.

Table 5-6: Rinsate Analysis Results

Analyte	LOR (mg/L)*	Rinsate Results (mg/L)*
Heavy Metals		
Arsenic	0.001	<0.001
Cadmium	0.0001	<0.0001
Chromium	0.001	**0.003**
Copper	0.001	**0.001**
Lead	0.001	<0.001
Mercury	0.0001	<0.0001
Nickel	0.001	<0.001
Zinc	0.005	**0.012**
TRH		
C6 – C10 Fraction	0.02	<0.02
C6 – C10 Fraction minus BTEX (F1)	0.02	<0.02
BTEXN		
Benzene	0.001	<0.001
Toluene	0.002	<0.002
Ethylbenzene	0.002	<0.002
Total Xylenes	0.002	<0.002
Naphthalene	0.005	<0.005

* Note: units converted to mg/L for ease of interpretation

5.13 Statistical Analysis of Laboratory Results

The 95% Upper Confidence Level (UCL) was calculated for all laboratory results of identified contaminants of concern, utilising Procedure D of the NSW EPA *Sampling Design Guidelines* (1995). The statistical analysis indicates that there is a 95% probability that the calculated average concentration of the contaminant will not exceed the criteria value.

The 95% UCL was calculated for each of the three (3) individual areas of concern. All statistical analysis for all areas indicated that there is a 95% probability that the calculated average concentration of each contaminant of concern will not exceed the SAC value.

6. RESULTS AND DISCUSSION

A total of 28 surface soil samples were collected from the three (3) identified areas of concern by BE consultants on 25 June 2021. Samples were analysed by NATA accredited ALS Environmental in accordance with the ASC NEPM and results were compared to the SAC for contaminants of concern detailed in Table 5-2.

The full laboratory results for analytical testing of soil samples collected by BE are provided in the ALS Environmental Certificate of Analysis (COA) (Attachment 1).

The results of the soil sampling and analysis of samples collected from the three (3) areas of concern are summarised below.

Heavy metals: Results of analysis were all below adopted SAC.
TRH: Results of analysis were all below adopted SAC.
BTEXN: Results of analysis were all below adopted SAC.
PAHs: Results of analysis were all below adopted SAC.
OCPs and OPPs: Results of analysis were all below adopted SAC.
PCBs: Results of analysis were all below adopted SAC.
ACM: Results of analysis were all below adopted SAC.

6.1 RECOMMENDATIONS

In accordance with the ASC NEPM and the specific contaminant of concern limits defined in the SAC, results from analysis demonstrates that soils in the three (3) areas of concern are not contaminated. Therefore, no recommended actions are required.

7. CONCLUSION

Benbow Environmental (BE) was engaged by Carlo Ranieri and Associates, on behalf of Greenfields Resource Recovery Facility, to undertake a Detailed Site Investigation (DSI) for the site located at 344 Park Road, Wallacia NSW 2745 (the Site).

In accordance with the ASC NEPM and the specific contaminant of concern limits defined in the SAC, results from analysis demonstrates that all samples in the three (3) areas of concern are not contaminated. This confirms the site is suitable for the proposed use as a resource recovery facility.

This concludes the report.

Matthew Taylor	Damien Thomas	R T Benbow
Environmental Scientist	Environmental Scientist	Principal Consultant

8. LIMITATIONS

Our services for this project are carried out in accordance with our current professional standards for site assessment investigations. No guarantees are either expressed or implied.

This report has been prepared solely for the use of Greenfields Resource Recovery Facility, as per our agreement for providing environmental services. Only Greenfields Resource Recovery Facility is entitled to rely upon the findings in the report within the scope of work described in this report. Otherwise, no responsibility is accepted for the use of any part of the report by another in any other context or for any other purpose.

Although all due care has been taken in the preparation of this study, no warranty is given, nor liability accepted (except that otherwise required by law) in relation to any of the information contained within this document. We accept no responsibility for the accuracy of any data or information provided to us by Greenfields Resource Recovery Facilityfor the purposes of preparing this report.

Any opinions and judgements expressed herein, which are based on our understanding and interpretation of current regulatory standards, should not be construed as legal advice.

ATTACHMENTS

Attachment 1: Laboratory Analysis and Documentation (ALS Environmental)

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2123870**	Page	: 1 of 41
Client	: **BENBOW ENVIRONMENTAL**	Laboratory	: Environmental Division Sydney
Contact	: Matthew Taylor	Contact	: Customer Services ES
Address	: 25-27 SHERWOOD STREET NORTHMEAD NSW, AUSTRALIA 2152	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: 191318-03	Date Samples Received	: 28-Jun-2021 11:35
Order number	: 191318-03	Date Analysis Commenced	: 29-Jun-2021
C-O-C number	: 24510	Issue Date	: 05-Jul-2021 18:39
Sampler	: DAMIEN THOMAS, Matthew Taylor		
Site	: 191318-03		
Quote number	: COMPASS BLANKET QUOTE		
No. of samples received	: 31		
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
- Descriptive Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Alana Smylie	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, NSW
Alex Rossi	Organic Chemist	Sydney Inorganics, Smithfield, NSW
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Inorganics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	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 Contact for details.

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

- 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.
- EG020A-T: Positive results for sample ES2123870 # 031 have been confirmed by redigestion and reanalysis.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.
- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.

Analytical Results

Sub-Matrix: RINSATE (Matrix: WATER)				Sample ID	RINSATE	----	----	----	----
				Sampling date / time	25-Jun-2021 17:04	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2123870-031	--------	--------	--------	--------
					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		**0.003**	----	----	----	----
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		**0.012**	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	20	µg/L		<20	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ **Total Xylenes**	----	2	µg/L		<2	----	----	----	----
^ **Sum of BTEX**	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	2	%		**118**	----	----	----	----
Toluene-D8	2037-26-5	2	%		**115**	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%		**114**	----	----	----	----

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	S-12	----	----	----	----
				Sampling date / time	25-Jun-2021 13:37	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2123870-012	--------	--------	--------	--------
					Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		**14.7**	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		<5	----	----	----	----
Cadmium	7440-43-9	1	mg/kg		<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg		**9**	----	----	----	----
Copper	7440-50-8	5	mg/kg		**7**	----	----	----	----
Lead	7439-92-1	5	mg/kg		**16**	----	----	----	----
Nickel	7440-02-0	2	mg/kg		**5**	----	----	----	----
Zinc	7440-66-6	5	mg/kg		**21**	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	----	----	----
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	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg		<0.05	----	----	----	----
gamma-BHC	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	----	----	----	----
^ **Total Chlordane (sum)**	----	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	----	----	----	----

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)			Sample ID	S-12	----	----	----	----
			Sampling date / time	25-Jun-2021 13:37	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2123870-012	--------	--------	--------	--------
				Result	----	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued								
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	----	----	----	----
^ **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	----	----	----	----
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	----	----	----	----
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	----	----	----	----
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	----	----	----	----

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)			Sample ID	S-12	----	----	----	----
			Sampling date / time	25-Jun-2021 13:37	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2123870-012	--------	--------	--------	--------
				Result	----	----	----	----
EP075(SIM)A: Phenolic Compounds - Continued								
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	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**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	----	----	----	----

Analytical Results

Sub-Matrix: SEDIMENT (Matrix: SOIL)				Sample ID	S-12	----	----	----	----
				Sampling date / time	25-Jun-2021 13:37	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2123870-012	--------	--------	--------	--------
					Result	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ **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	%		**78.7**	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**68.2**	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**70.6**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**95.8**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**93.5**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		**84.9**	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**104**	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		**94.9**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		**87.4**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**84.9**	----	----	----	----
Toluene-D8	2037-26-5	0.2	%		**91.3**	----	----	----	----

Analytical Results

Sub-Matrix: **SEDIMENT** (Matrix: **SOIL**)				Sample ID	**S-12**	**----**	**----**	**----**	**----**
				Sampling date / time	25-Jun-2021 13:37	----	----	----	----
Compound	*CAS Number*	*LOR*	*Unit*		**ES2123870-012**	**--------**	**--------**	**--------**	**--------**
					Result	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	0.2	%		**80.7**	**----**	**----**	**----**	**----**

Analytical Results

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

Compound	CAS Number	LOR	Unit	Sample ID	S-1 shale	S-2 silty clay loam	S-3 silty clay loam	S-4	S-5
				Sampling date / time	25-Jun-2021 10:03	25-Jun-2021 10:18	25-Jun-2021 10:39	25-Jun-2021 10:56	25-Jun-2021 11:12
					ES2123870-001	ES2123870-002	ES2123870-003	ES2123870-004	ES2123870-005
					Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	1.0	%		**6.1**	**7.0**	**6.7**	**9.6**	**8.2**
EA200: AS 4964 - 2004 Identification of Asbestos in Soils									
Asbestos Detected	1332-21-4	0.1	g/kg		**No**	**No**	**No**	**No**	**No**
Asbestos (Trace)	1332-21-4	5	Fibres		**No**	**No**	**No**	**No**	**No**
Asbestos Type	1332-21-4	-	--		**-**	**-**	**-**	**-**	**-**
Synthetic Mineral Fibre	----	0.1	g/kg		**No**	**No**	**No**	**No**	**No**
Organic Fibre	----	0.1	g/kg		**No**	**No**	**No**	**No**	**No**
Sample weight (dry)	----	0.01	g		**549**	**484**	**587**	**614**	**483**
APPROVED IDENTIFIER:	----	-	--		**A. SMYLIE**	**A. SMYLIE**	**A. SMYLIE**	**A. SMYLIE**	**A. SMYLIE**
EG005(ED093)T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		**6**	**5**	**7**	<5	**5**
Cadmium	7440-43-9	1	mg/kg		<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg		**6**	**5**	**7**	**9**	**6**
Copper	7440-50-8	5	mg/kg		**29**	**26**	**32**	**34**	**36**
Lead	7439-92-1	5	mg/kg		**18**	**15**	**20**	**19**	**23**
Nickel	7440-02-0	2	mg/kg		**27**	**17**	**31**	**25**	**26**
Zinc	7440-66-6	5	mg/kg		**84**	**83**	**93**	**86**	**89**
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ **Total Chlordane (sum)**	----	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	S-1 shale	S-2 silty clay loam	S-3 silty clay loam	S-4	S-5
			Sampling date / time	25-Jun-2021 10:03	25-Jun-2021 10:18	25-Jun-2021 10:39	25-Jun-2021 10:56	25-Jun-2021 11:12
Compound	CAS Number	LOR	Unit	ES2123870-001	ES2123870-002	ES2123870-003	ES2123870-004	ES2123870-005
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	S-1 shale	S-2 silty clay loam	S-3 silty clay loam	S-4	S-5
			Sampling date / time	25-Jun-2021 10:03	25-Jun-2021 10:18	25-Jun-2021 10:39	25-Jun-2021 10:56	25-Jun-2021 11:12
Compound	CAS Number	LOR	Unit	ES2123870-001	ES2123870-002	ES2123870-003	ES2123870-004	ES2123870-005
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	S-1 shale	S-2 silty clay loam	S-3 silty clay loam	S-4	S-5
			Sampling date / time	25-Jun-2021 10:03	25-Jun-2021 10:18	25-Jun-2021 10:39	25-Jun-2021 10:56	25-Jun-2021 11:12
Compound	CAS Number	LOR	Unit	ES2123870-001	ES2123870-002	ES2123870-003	ES2123870-004	ES2123870-005
				Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**74.6**	**85.6**	**85.3**	**74.3**	**78.0**
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**69.8**	**83.7**	**86.4**	**71.2**	**77.9**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	**78.6**	**88.6**	**92.7**	**77.5**	**86.2**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**97.2**	**96.7**	**101**	**95.0**	**99.4**
2-Chlorophenol-D4	93951-73-6	0.5	%	**94.7**	**94.2**	**98.2**	**91.5**	**96.3**
2.4.6-Tribromophenol	118-79-6	0.5	%	**79.4**	**78.4**	**83.3**	**79.4**	**84.4**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	S-1 shale	S-2 silty clay loam	S-3 silty clay loam	S-4	S-5
				Sampling date / time	25-Jun-2021 10:03	25-Jun-2021 10:18	25-Jun-2021 10:39	25-Jun-2021 10:56	25-Jun-2021 11:12
Compound	CAS Number	LOR	Unit		ES2123870-001	ES2123870-002	ES2123870-003	ES2123870-004	ES2123870-005
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		103	102	107	99.1	106
Anthracene-d10	1719-06-8	0.5	%		95.3	93.3	98.9	92.9	99.0
4-Terphenyl-d14	1718-51-0	0.5	%		85.7	84.1	88.9	83.4	88.6
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		97.9	89.1	100	99.9	97.7
Toluene-D8	2037-26-5	0.2	%		103	98.5	109	108	109
4-Bromofluorobenzene	460-00-4	0.2	%		97.8	88.7	99.7	96.3	98.7

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	S-6	S-7	S-8	S-9	S-10
			Sampling date / time	25-Jun-2021 11:21	25-Jun-2021 11:32	25-Jun-2021 11:40	25-Jun-2021 11:47	25-Jun-2021 11:53
Compound	CAS Number	LOR	Unit	ES2123870-006	ES2123870-007	ES2123870-008	ES2123870-009	ES2123870-010
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	6.7	8.7	12.6	8.8	8.0
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	No	No	No
Asbestos Type	1332-21-4	-	--	-	-	-	-	-
Synthetic Mineral Fibre	----	0.1	g/kg	No	No	No	No	No
Organic Fibre	----	0.1	g/kg	No	No	No	No	No
Sample weight (dry)	----	0.01	g	455	577	376	493	706
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	5	6	<5	7	7
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	6	6	7	7	7
Copper	7440-50-8	5	mg/kg	29	40	12	34	21
Lead	7439-92-1	5	mg/kg	18	20	17	21	18
Nickel	7440-02-0	2	mg/kg	22	25	6	33	22
Zinc	7440-66-6	5	mg/kg	81	112	34	95	69
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	S-6	S-7	S-8	S-9	S-10
			Sampling date / time	25-Jun-2021 11:21	25-Jun-2021 11:32	25-Jun-2021 11:40	25-Jun-2021 11:47	25-Jun-2021 11:53
Compound	CAS Number	LOR	Unit	ES2123870-006	ES2123870-007	ES2123870-008	ES2123870-009	ES2123870-010
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	S-6	S-7	S-8	S-9	S-10
			Sampling date / time	25-Jun-2021 11:21	25-Jun-2021 11:32	25-Jun-2021 11:40	25-Jun-2021 11:47	25-Jun-2021 11:53
Compound	CAS Number	LOR	Unit	ES2123870-006	ES2123870-007	ES2123870-008	ES2123870-009	ES2123870-010
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	0.6	0.6	0.6	0.6
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.2	1.2	1.2	1.2
EP080/071: Total Petroleum Hydrocarbons								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	S-6	S-7	S-8	S-9	S-10
				Sampling date / time	25-Jun-2021 11:21	25-Jun-2021 11:32	25-Jun-2021 11:40	25-Jun-2021 11:47	25-Jun-2021 11:53
Compound	CAS Number	LOR	Unit		ES2123870-006	ES2123870-007	ES2123870-008	ES2123870-009	ES2123870-010
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**81.6**	**84.2**	**75.6**	**80.9**	**80.5**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**84.1**	**87.4**	**75.3**	**78.7**	**81.4**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**88.6**	**96.3**	**77.0**	**84.5**	**85.8**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**99.0**	**85.8**	**95.8**	**99.9**	**93.8**
2-Chlorophenol-D4	93951-73-6	0.5	%		**95.4**	**88.9**	**91.3**	**96.8**	**90.3**
2.4.6-Tribromophenol	118-79-6	0.5	%		**82.4**	**81.8**	**84.0**	**84.4**	**80.1**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	S-6	S-7	S-8	S-9	S-10
				Sampling date / time	25-Jun-2021 11:21	25-Jun-2021 11:32	25-Jun-2021 11:40	25-Jun-2021 11:47	25-Jun-2021 11:53
Compound	CAS Number	LOR	Unit		ES2123870-006	ES2123870-007	ES2123870-008	ES2123870-009	ES2123870-010
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**105**	**107**	**104**	**106**	**100**
Anthracene-d10	1719-06-8	0.5	%		**98.9**	**99.6**	**96.0**	**98.0**	**94.7**
4-Terphenyl-d14	1718-51-0	0.5	%		**87.6**	**87.2**	**85.8**	**87.5**	**84.5**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**100**	**95.0**	**87.4**	**91.2**	**88.6**
Toluene-D8	2037-26-5	0.2	%		**109**	**103**	**92.4**	**103**	**97.5**
4-Bromofluorobenzene	460-00-4	0.2	%		**98.7**	**91.7**	**85.7**	**91.3**	**85.4**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	S-11	S-12	S-13	S-14	S-15
			Sampling date / time	25-Jun-2021 13:35	25-Jun-2021 13:37	25-Jun-2021 14:08	25-Jun-2021 14:06	25-Jun-2021 14:30
Compound	CAS Number	LOR	Unit	ES2123870-011	ES2123870-012	ES2123870-013	ES2123870-014	ES2123870-015
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	8.6	----	36.8	25.1	30.2
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	No	No	No
Asbestos Type	1332-21-4	-	--	-	-	-	-	-
Synthetic Mineral Fibre	----	0.1	g/kg	No	No	No	No	No
Organic Fibre	----	0.1	g/kg	No	No	No	No	No
Sample weight (dry)	----	0.01	g	440	403	516	492	426
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	----	<5	8	6
Cadmium	7440-43-9	1	mg/kg	<1	----	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	9	----	21	18	19
Copper	7440-50-8	5	mg/kg	<5	----	34	<5	12
Lead	7439-92-1	5	mg/kg	13	----	29	25	18
Nickel	7440-02-0	2	mg/kg	4	----	22	8	7
Zinc	7440-66-6	5	mg/kg	16	----	122	8	47
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	S-11	S-12	S-13	S-14	S-15
			Sampling date / time	25-Jun-2021 13:35	25-Jun-2021 13:37	25-Jun-2021 14:08	25-Jun-2021 14:06	25-Jun-2021 14:30
Compound	CAS Number	LOR	Unit	ES2123870-011	ES2123870-012	ES2123870-013	ES2123870-014	ES2123870-015
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	S-11	S-12	S-13	S-14	S-15
			Sampling date / time	25-Jun-2021 13:35	25-Jun-2021 13:37	25-Jun-2021 14:08	25-Jun-2021 14:06	25-Jun-2021 14:30
Compound	CAS Number	LOR	Unit	ES2123870-011	ES2123870-012	ES2123870-013	ES2123870-014	ES2123870-015
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued								
Phenol	108-95-2	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	----	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	----	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
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	<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
Chrysene	218-01-9	0.5	mg/kg	<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
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<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
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<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
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<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
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<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**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	----	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	S-11	S-12	S-13	S-14	S-15
			Sampling date / time	25-Jun-2021 13:35	25-Jun-2021 13:37	25-Jun-2021 14:08	25-Jun-2021 14:06	25-Jun-2021 14:30
Compound	CAS Number	LOR	Unit	ES2123870-011	ES2123870-012	ES2123870-013	ES2123870-014	ES2123870-015
				Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued								
C6 - C9 Fraction	----	10	mg/kg	<10	----	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	----	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	----	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg	<100	----	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	----	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	----	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	----	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	----	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	----	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	----	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**79.6**	----	**80.7**	**80.8**	**76.8**
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**76.4**	----	**72.7**	**77.4**	**76.4**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	**78.7**	----	**73.7**	**79.9**	**62.3**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**96.3**	----	**93.8**	**97.2**	**100**
2-Chlorophenol-D4	93951-73-6	0.5	%	**93.7**	----	**89.0**	**93.4**	**96.4**
2.4.6-Tribromophenol	118-79-6	0.5	%	**86.2**	----	**83.6**	**83.6**	**81.7**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	S-11	S-12	S-13	S-14	S-15
				Sampling date / time	25-Jun-2021 13:35	25-Jun-2021 13:37	25-Jun-2021 14:08	25-Jun-2021 14:06	25-Jun-2021 14:30
Compound	CAS Number	LOR	Unit		ES2123870-011	ES2123870-012	ES2123870-013	ES2123870-014	ES2123870-015
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		103	----	100	103	113
Anthracene-d10	1719-06-8	0.5	%		96.5	----	94.5	95.1	104
4-Terphenyl-d14	1718-51-0	0.5	%		86.8	----	86.4	85.6	91.3
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		92.2	----	85.5	95.6	93.8
Toluene-D8	2037-26-5	0.2	%		100	----	85.2	103	98.4
4-Bromofluorobenzene	460-00-4	0.2	%		89.4	----	82.1	97.1	90.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	S-16	S-17	S-18	S-19	S-20
			Sampling date / time	25-Jun-2021 14:32	25-Jun-2021 14:48	25-Jun-2021 14:54	25-Jun-2021 15:10	25-Jun-2021 15:15
Compound	CAS Number	LOR	Unit	ES2123870-016	ES2123870-017	ES2123870-018	ES2123870-019	ES2123870-020
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	17.3	16.4	21.6	38.2	19.3
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	No	No	No
Asbestos Type	1332-21-4	-	--	-	-	-	-	-
Synthetic Mineral Fibre	----	0.1	g/kg	No	No	No	No	No
Organic Fibre	----	0.1	g/kg	No	No	No	No	No
Sample weight (dry)	----	0.01	g	479	443	610	307	532
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	5	<5	6	6	5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	13	9	17	19	11
Copper	7440-50-8	5	mg/kg	8	36	8	16	16
Lead	7439-92-1	5	mg/kg	18	17	16	16	21
Nickel	7440-02-0	2	mg/kg	6	8	5	9	11
Zinc	7440-66-6	5	mg/kg	14	62	16	40	57
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	S-16	S-17	S-18	S-19	S-20
			Sampling date / time	25-Jun-2021 14:32	25-Jun-2021 14:48	25-Jun-2021 14:54	25-Jun-2021 15:10	25-Jun-2021 15:15
Compound	CAS Number	LOR	Unit	ES2123870-016	ES2123870-017	ES2123870-018	ES2123870-019	ES2123870-020
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	S-16	S-17	S-18	S-19	S-20
			Sampling date / time	25-Jun-2021 14:32	25-Jun-2021 14:48	25-Jun-2021 14:54	25-Jun-2021 15:10	25-Jun-2021 15:15
Compound	CAS Number	LOR	Unit	ES2123870-016	ES2123870-017	ES2123870-018	ES2123870-019	ES2123870-020
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	S-16	S-17	S-18	S-19	S-20
			Sampling date / time	25-Jun-2021 14:32	25-Jun-2021 14:48	25-Jun-2021 14:54	25-Jun-2021 15:10	25-Jun-2021 15:15
Compound	CAS Number	LOR	Unit	ES2123870-016	ES2123870-017	ES2123870-018	ES2123870-019	ES2123870-020
				Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	<100	<100	<100	**140**	<100
C29 - C36 Fraction	----	100	mg/kg	<100	<100	<100	**180**	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	<50	<50	**320**	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	<100	<100	<100	**240**	<100
>C34 - C40 Fraction	----	100	mg/kg	<100	<100	<100	**140**	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	<50	<50	**380**	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**81.3**	**82.3**	**81.4**	**99.4**	**77.0**
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**74.2**	**76.6**	**74.1**	**91.6**	**70.4**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	**90.6**	**82.8**	**87.1**	**120**	**110**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**101**	**95.7**	**96.0**	**92.7**	**94.8**
2-Chlorophenol-D4	93951-73-6	0.5	%	**97.6**	**92.3**	**92.6**	**89.0**	**92.2**
2.4.6-Tribromophenol	118-79-6	0.5	%	**86.3**	**78.1**	**80.3**	**80.5**	**79.5**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	S-16	S-17	S-18	S-19	S-20
				Sampling date / time	25-Jun-2021 14:32	25-Jun-2021 14:48	25-Jun-2021 14:54	25-Jun-2021 15:10	25-Jun-2021 15:15
Compound	CAS Number	LOR	Unit		ES2123870-016	ES2123870-017	ES2123870-018	ES2123870-019	ES2123870-020
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		107	103	103	98.8	103
Anthracene-d10	1719-06-8	0.5	%		99.2	94.9	94.7	92.2	94.7
4-Terphenyl-d14	1718-51-0	0.5	%		89.0	84.9	85.8	82.8	84.0
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		101	84.5	85.6	76.6	83.4
Toluene-D8	2037-26-5	0.2	%		105	91.7	95.7	82.8	88.7
4-Bromofluorobenzene	460-00-4	0.2	%		100	82.7	90.2	75.7	80.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	S-21	S-22	S-23	S-24	S-25
			Sampling date / time	25-Jun-2021 16:15	25-Jun-2021 16:16	25-Jun-2021 16:17	25-Jun-2021 16:18	25-Jun-2021 16:19
Compound	CAS Number	LOR	Unit	ES2123870-021	ES2123870-022	ES2123870-023	ES2123870-024	ES2123870-025
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	27.8	11.5	8.4	15.7	11.4
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	No	No	No
Asbestos Type	1332-21-4	-	--	-	-	-	-	-
Synthetic Mineral Fibre	----	0.1	g/kg	No	No	No	No	No
Organic Fibre	----	0.1	g/kg	No	No	No	No	No
Sample weight (dry)	----	0.01	g	369	542	593	596	472
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE
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	14	14	20	12	8
Copper	7440-50-8	5	mg/kg	27	20	24	21	32
Lead	7439-92-1	5	mg/kg	24	12	11	20	14
Nickel	7440-02-0	2	mg/kg	17	16	22	12	13
Zinc	7440-66-6	5	mg/kg	132	238	100	76	62
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	S-21	S-22	S-23	S-24	S-25
			Sampling date / time	25-Jun-2021 16:15	25-Jun-2021 16:16	25-Jun-2021 16:17	25-Jun-2021 16:18	25-Jun-2021 16:19
Compound	CAS Number	LOR	Unit	ES2123870-021	ES2123870-022	ES2123870-023	ES2123870-024	ES2123870-025
				Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	S-21	S-22	S-23	S-24	S-25
				Sampling date / time	25-Jun-2021 16:15	25-Jun-2021 16:16	25-Jun-2021 16:17	25-Jun-2021 16:18	25-Jun-2021 16:19
Compound	CAS Number	LOR	Unit		ES2123870-021	ES2123870-022	ES2123870-023	ES2123870-024	ES2123870-025
					Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued									
Phenol	108-95-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg		<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		0.7	<0.5	0.5	<0.5	1.1
Pyrene	129-00-0	0.5	mg/kg		0.7	0.6	0.6	<0.5	1.2
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	0.6
Chrysene	218-01-9	0.5	mg/kg		0.6	<0.5	<0.5	<0.5	0.6
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		0.8	0.8	1.2	<0.5	1.0
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	0.6	<0.5	0.9
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	0.7	<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		0.6	0.5	0.8	<0.5	0.6
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		3.4	1.9	4.4	<0.5	6.0
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	0.8	<0.5	1.1
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.7	0.7	1.1	0.6	1.4
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	1.4	1.2	1.7
EP080/071: Total Petroleum Hydrocarbons									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	S-21	S-22	S-23	S-24	S-25
			Sampling date / time	25-Jun-2021 16:15	25-Jun-2021 16:16	25-Jun-2021 16:17	25-Jun-2021 16:18	25-Jun-2021 16:19
Compound	CAS Number	LOR	Unit	ES2123870-021	ES2123870-022	ES2123870-023	ES2123870-024	ES2123870-025
				Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg	**1240**	**460**	**340**	**520**	**300**
C29 - C36 Fraction	----	100	mg/kg	**1920**	**610**	**500**	**760**	**630**
^ C10 - C36 Fraction (sum)	----	50	mg/kg	**3160**	**1070**	**840**	**1280**	**930**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg	**2550**	**890**	**680**	**1060**	**720**
>C34 - C40 Fraction	----	100	mg/kg	**1320**	**400**	**440**	**540**	**610**
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	**3870**	**1290**	**1120**	**1600**	**1330**
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	<50	<50	<50	<50
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg	<1	<1	<1	<1	<1
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**78.2**	**77.5**	**98.0**	**83.3**	**77.4**
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**73.9**	**78.5**	**110**	**105**	**95.5**
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	**79.7**	**64.8**	**86.5**	**89.2**	**71.9**
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**92.8**	**89.3**	**91.9**	**92.4**	**88.4**
2-Chlorophenol-D4	93951-73-6	0.5	%	**86.7**	**85.9**	**88.6**	**88.6**	**85.4**
2.4.6-Tribromophenol	118-79-6	0.5	%	**92.5**	**85.0**	**87.0**	**91.4**	**84.8**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	S-21	S-22	S-23	S-24	S-25
				Sampling date / time	25-Jun-2021 16:15	25-Jun-2021 16:16	25-Jun-2021 16:17	25-Jun-2021 16:18	25-Jun-2021 16:19
Compound	CAS Number	LOR	Unit		ES2123870-021	ES2123870-022	ES2123870-023	ES2123870-024	ES2123870-025
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		100	97.8	99.8	102	96.4
Anthracene-d10	1719-06-8	0.5	%		91.1	88.7	90.1	94.2	88.0
4-Terphenyl-d14	1718-51-0	0.5	%		86.1	83.0	83.8	87.5	80.8
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		99.2	132	128	114	89.6
Toluene-D8	2037-26-5	0.2	%		111	87.5	86.2	97.7	77.3
4-Bromofluorobenzene	460-00-4	0.2	%		97.7	89.6	86.6	93.9	78.4

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	S-26	S-27	S-28	S-13D	DUP-2
			Sampling date / time	25-Jun-2021 16:20	25-Jun-2021 16:21	25-Jun-2021 16:45	25-Jun-2021 14:08	25-Jun-2021 16:15
Compound	CAS Number	LOR	Unit	ES2123870-026	ES2123870-027	ES2123870-028	ES2123870-029	ES2123870-030
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	13.9	19.9	6.8	26.6	25.8
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	----
Asbestos (Trace)	1332-21-4	5	Fibres	No	No	No	No	----
Asbestos Type	1332-21-4	-	--	-	-	-	-	----
Synthetic Mineral Fibre	----	0.1	g/kg	No	No	No	No	----
Organic Fibre	----	0.1	g/kg	No	No	No	No	----
Sample weight (dry)	----	0.01	g	478	545	567	398	----
APPROVED IDENTIFIER:	----	-	--	A. SMYLIE	A. SMYLIE	A. SMYLIE	A. SMYLIE	----
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	24	16	7	25	30
Copper	7440-50-8	5	mg/kg	27	28	19	30	27
Lead	7439-92-1	5	mg/kg	16	19	6	16	24
Nickel	7440-02-0	2	mg/kg	19	22	12	16	18
Zinc	7440-66-6	5	mg/kg	114	85	60	80	163
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	S-26	S-27	S-28	S-13D	DUP-2
				Sampling date / time	25-Jun-2021 16:20	25-Jun-2021 16:21	25-Jun-2021 16:45	25-Jun-2021 14:08	25-Jun-2021 16:15
Compound	CAS Number	LOR	Unit		ES2123870-026	ES2123870-027	ES2123870-028	ES2123870-029	ES2123870-030
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	S-26	S-27	S-28	S-13D	DUP-2
			Sampling date / time	25-Jun-2021 16:20	25-Jun-2021 16:21	25-Jun-2021 16:45	25-Jun-2021 14:08	25-Jun-2021 16:15
Compound	CAS Number	LOR	Unit	ES2123870-026	ES2123870-027	ES2123870-028	ES2123870-029	ES2123870-030
				Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued								
Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**0.8**
Pyrene	129-00-0	0.5	mg/kg	**0.7**	**0.6**	<0.5	<0.5	**0.9**
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	**0.6**
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	**0.6**	<0.5	<0.5	<0.5	**0.8**
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	**1.3**	**0.6**	<0.5	<0.5	**3.6**
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	**0.6**
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	**0.6**	**0.6**	**0.9**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	S-26	S-27	S-28	S-13D	DUP-2
				Sampling date / time	25-Jun-2021 16:20	25-Jun-2021 16:21	25-Jun-2021 16:45	25-Jun-2021 14:08	25-Jun-2021 16:15
Compound	CAS Number	LOR	Unit		ES2123870-026	ES2123870-027	ES2123870-028	ES2123870-029	ES2123870-030
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		**820**	**1370**	**260**	<100	**1410**
C29 - C36 Fraction	----	100	mg/kg		**1340**	**2230**	**440**	**110**	**2060**
^ C10 - C36 Fraction (sum)	----	50	mg/kg		**2160**	**3600**	**700**	**110**	**3470**
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		**1880**	**2930**	**610**	<100	**2970**
>C34 - C40 Fraction	----	100	mg/kg		**870**	**1550**	**300**	**130**	**1470**
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		**2750**	**4480**	**910**	**130**	**4440**
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**81.6**	**124**	**124**	**92.2**	**107**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**114**	**106**	**119**	**127**	**115**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**74.8**	**64.1**	**85.6**	**71.8**	**81.5**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**90.6**	**87.9**	**91.4**	**92.9**	**88.5**
2-Chlorophenol-D4	93951-73-6	0.5	%		**88.3**	**84.2**	**90.4**	**90.7**	**84.8**
2.4.6-Tribromophenol	118-79-6	0.5	%		**92.2**	**86.7**	**85.8**	**83.6**	**86.2**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	S-26	S-27	S-28	S-13D	DUP-2
				Sampling date / time	25-Jun-2021 16:20	25-Jun-2021 16:21	25-Jun-2021 16:45	25-Jun-2021 14:08	25-Jun-2021 16:15
Compound	CAS Number	LOR	Unit		ES2123870-026	ES2123870-027	ES2123870-028	ES2123870-029	ES2123870-030
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		102	97.9	101	101	96.4
Anthracene-d10	1719-06-8	0.5	%		93.7	88.7	92.7	94.3	87.3
4-Terphenyl-d14	1718-51-0	0.5	%		88.8	86.3	85.9	84.5	85.5
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		106	120	105	124	127
Toluene-D8	2037-26-5	0.2	%		89.9	76.7	88.2	80.7	77.6
4-Bromofluorobenzene	460-00-4	0.2	%		90.3	78.5	90.1	82.1	80.1

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Sample ID - Sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	S-1shale - 25-Jun-2021 10:03	Mid brown soil.
EA200: Description	S-2silty clay loam - 25-Jun-2021 10:18	Mid brown soil.
EA200: Description	S-3silty clay loam - 25-Jun-2021 10:39	Mid brown soil.
EA200: Description	S-4 - 25-Jun-2021 10:56	Mid brown soil.
EA200: Description	S-5 - 25-Jun-2021 11:12	Mid brown soil.
EA200: Description	S-6 - 25-Jun-2021 11:21	Mid brown soil.
EA200: Description	S-7 - 25-Jun-2021 11:32	Mid brown soil.
EA200: Description	S-8 - 25-Jun-2021 11:40	Mid brown soil.
EA200: Description	S-9 - 25-Jun-2021 11:47	Mid brown soil.
EA200: Description	S-10 - 25-Jun-2021 11:53	Mid brown soil.
EA200: Description	S-11 - 25-Jun-2021 13:35	Mid brown soil.
EA200: Description	S-12 - 25-Jun-2021 13:37	Mid brown soil.
EA200: Description	S-13 - 25-Jun-2021 14:08	Mid brown soil.
EA200: Description	S-14 - 25-Jun-2021 14:06	Mid brown soil.
EA200: Description	S-15 - 25-Jun-2021 14:30	Mid brown soil.
EA200: Description	S-16 - 25-Jun-2021 14:32	Mid brown soil.
EA200: Description	S-17 - 25-Jun-2021 14:48	Mid brown soil.
EA200: Description	S-18 - 25-Jun-2021 14:54	Mid brown soil.
EA200: Description	S-19 - 25-Jun-2021 15:10	Mid brown soil.
EA200: Description	S-20 - 25-Jun-2021 15:15	Mid brown soil.
EA200: Description	S-21 - 25-Jun-2021 16:15	Mid brown soil.
EA200: Description	S-22 - 25-Jun-2021 16:16	Mid brown soil.
EA200: Description	S-23 - 25-Jun-2021 16:17	Mid brown soil.
EA200: Description	S-24 - 25-Jun-2021 16:18	Mid brown soil.
EA200: Description	S-25 - 25-Jun-2021 16:19	Mid brown soil.
EA200: Description	S-26 - 25-Jun-2021 16:20	Mid brown soil.
EA200: Description	S-27 - 25-Jun-2021 16:21	Mid brown soil.
EA200: Description	S-28 - 25-Jun-2021 16:45	Mid brown soil.
EA200: Description	S-13D - 25-Jun-2021 14:08	Mid brown soil.

Surrogate Control Limits

Sub-Matrix: RINSATE		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128

Sub-Matrix: SEDIMENT		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	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

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			

Sub-Matrix: **SOIL**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP075(SIM)T: PAH Surrogates - Continued			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

Inter-Laboratory Testing

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

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

QUALITY CONTROL REPORT

Work Order	: **ES2123870**	Page	: 1 of 24
Client	: **BENBOW ENVIRONMENTAL**	Laboratory	: Environmental Division Sydney
Contact	: Matthew Taylor	Contact	: Customer Services ES
Address	: 25-27 SHERWOOD STREET NORTHMEAD NSW, AUSTRALIA 2152	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: 191318-03	Date Samples Received	: 28-Jun-2021
Order number	: 191318-03	Date Analysis Commenced	: 29-Jun-2021
C-O-C number	: 24510	Issue Date	: 05-Jul-2021
Sampler	: DAMIEN THOMAS, Matthew Taylor		
Site	: 191318-03		
Quote number	: COMPASS BLANKET QUOTE		
No. of samples received	: 31		
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*
Alana Smylie	Asbestos Identifier	Newcastle - Asbestos, Mayfield West, NSW
Alex Rossi	Organic Chemist	Sydney Inorganics, Smithfield, NSW
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Franco Lentini	LCMS Coordinator	Sydney Inorganics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Sanjeshni Jyoti	Senior Chemist Volatiles	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

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3768587)									
ES2123865-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	38	38	0.0	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	21	21	0.0	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	9	9	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	11	10	11.6	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	2290	2620	13.3	0% - 20%
ES2123870-009	S-9	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	7	7	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	33	33	0.0	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	7	8	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	34	34	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	21	23	9.5	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	95	102	7.8	0% - 20%
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 3768589)									
ES2123870-019	S-19	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	19	20	0.0	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	9	10	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	6	6	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	16	13	19.9	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	16	17	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	40	33	19.1	No Limit
ES2123870-029	S-13D	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	25	19	26.3	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	16	16	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: 3768589) - continued									
ES2123870-029	S-13D	EG005T: Arsenic	7440-38-2	5	mg/kg	<5	5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	30	22	29.8	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	16	21	24.1	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	80	91	12.6	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3768591)									
ES2123851-003	Anonymous	EA055: Moisture Content	----	0.1	%	50.2	50.9	1.4	0% - 20%
ES2123870-007	S-7	EA055: Moisture Content	----	0.1	%	8.7	9.1	4.2	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 3768592)									
ES2123870-016	S-16	EA055: Moisture Content	----	0.1	%	17.3	18.5	6.6	0% - 50%
ES2123870-027	S-27	EA055: Moisture Content	----	0.1	%	19.9	22.8	13.4	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3768588)									
ES2123865-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2123870-009	S-9	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: 3768590)									
ES2123870-019	S-19	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2123870-029	S-13D	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3762625)									
ES2123870-001	S-1 shale	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2123870-011	S-11	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 3762643)									
ES2123870-021	S-21	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2123870-030	DUP-2	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3762624)									
ES2123870-001	S-1 shale	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3762624) - continued									
ES2123870-001	S-1 shale	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
ES2123870-011	S-11	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3762642)									
ES2123870-021	S-21	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 3762642) - continued									
ES2123870-021	S-21	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
ES2123870-030	DUP-2	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3762624)									
ES2123870-001	S-1 shale	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

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: 3762624) - continued									
ES2123870-001	S-1 shale	EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2123870-011	S-11	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 3762642)									
ES2123870-021	S-21	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: 3762642) - continued									
ES2123870-021	S-21	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
ES2123870-030	DUP-2	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 3762623)									
ES2123870-001	S-1 shale	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

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: 3762623) - continued									
ES2123870-011	S-11	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: 3762641)									
ES2123870-021	S-21	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
ES2123870-030	DUP-2	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3762623)									
ES2123870-001	S-1 shale	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

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: 3762623) - continued									
ES2123870-001	S-1 shale	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
ES2123870-011	S-11	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
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3762641)									
ES2123870-021	S-21	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 3762641) - continued									
ES2123870-021	S-21	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	0.7	0.7	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	0.7	0.8	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	0.6	0.6	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	0.8	0.8	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	0.6	0.6	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	3.4	4.0	16.2	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	0.6	0.0	No Limit
ES2123870-030	DUP-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	0.8	0.9	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	0.9	0.9	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	0.6	0.7	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	0.8	0.8	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	0.6	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	3.6	4.4	20.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	0.6	0.7	15.9	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3762622)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3762622) - continued									
ES2123870-001	S-1 shale	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2123870-011	S-11	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3762640)									
ES2123870-021	S-21	EP071: C15 - C28 Fraction	----	100	mg/kg	1240	1210	2.7	0% - 50%
		EP071: C29 - C36 Fraction	----	100	mg/kg	1920	1800	6.3	0% - 50%
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2123870-030	DUP-2	EP071: C15 - C28 Fraction	----	100	mg/kg	1410	1380	1.7	0% - 50%
		EP071: C29 - C36 Fraction	----	100	mg/kg	2060	2190	5.7	0% - 20%
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3764883)									
ES2123870-001	S-1 shale	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2123870-011	S-11	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3764894)									
ES2123844-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2123870-025	S-25	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3762622)									
ES2123870-001	S-1 shale	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
ES2123870-011	S-11	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: 3762640)									
ES2123870-021	S-21	EP071: >C16 - C34 Fraction	----	100	mg/kg	2550	2540	0.0	0% - 20%
		EP071: >C34 - C40 Fraction	----	100	mg/kg	1320	1320	0.0	0% - 50%
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2123870-030	DUP-2	EP071: >C16 - C34 Fraction	----	100	mg/kg	2970	3060	2.9	0% - 20%
		EP071: >C34 - C40 Fraction	----	100	mg/kg	1470	1530	4.0	0% - 50%
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3764883)									
ES2123870-001	S-1 shale	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2123870-011	S-11	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3764894)									
ES2123844-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2123870-025	S-25	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080: BTEXN (QC Lot: 3764883)									
ES2123870-001	S-1 shale	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
ES2123870-011	S-11	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EP080: BTEXN (QC Lot: 3764894)									
ES2123844-001	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
ES2123870-025	S-25	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 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: 3764710)									
ES2123888-007	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0019	0.0019	0.0	0% - 50%
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.006	0.007	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.004	0.005	24.1	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.105	0.124	16.3	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.233	0.261	11.4	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.007	0.008	17.7	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.409	0.446	8.6	0% - 20%
ES2123888-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	0.0016	0.0014	8.4	0% - 50%

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG020T: Total Metals by ICP-MS (QC Lot: 3764710) - continued									
ES2123888-001	Anonymous	EG020A-T: Arsenic	7440-38-2	0.001	mg/L	0.006	0.006	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	0.009	0.007	27.3	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.050	0.043	13.9	0% - 20%
		EG020A-T: Lead	7439-92-1	0.001	mg/L	0.172	0.148	15.0	0% - 20%
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	0.010	0.008	18.7	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.335	0.285	16.2	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 3762298)									
ES2123291-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
ES2123905-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 3762775)									
EW2102737-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
ES2122800-010	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 3762775)									
EW2102737-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
ES2122800-010	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.0	No Limit
EP080: BTEXN (QC Lot: 3762775)									
EW2102737-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit
ES2122800-010	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.0	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	<2	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.0	No Limit
		EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.0	No Limit

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: 3768587)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	106	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	88.7	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	96.9	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	98.2	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	103	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	106	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	94.0	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3768589)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	93.3	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	81.6	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	88.3	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	90.5	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	103	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	99.0	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	94.3	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3768588)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	87.8	70.0	125
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3768590)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	87.8	70.0	125
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3762625)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	95.8	62.0	126
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3762643)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	96.0	62.0	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 3762624)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	95.0	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	76.3	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	99.7	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	102	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	91.3	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	96.2	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	99.0	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	102	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	103	63.0	117

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 3762624) - continued								
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	103	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	104	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	99.3	66.0	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	100	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.4	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	108	69.0	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	105	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	94.4	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.5	62.0	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	102	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	98.7	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	94.4	54.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 3762642)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	95.9	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	91.8	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	101	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	97.7	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	96.1	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	96.2	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	98.2	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	99.4	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	100	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	102	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	99.6	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	100	66.0	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	101	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	90.1	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	100	69.0	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	101	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	98.5	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.4	62.0	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	92.9	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	102	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	90.9	54.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3762624)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	74.6	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	81.4	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	81.8	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	98.9	67.0	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: 3762624) - continued								
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	102	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	98.7	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	92.0	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	104	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	100	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	102	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	96.0	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	103	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	87.8	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	103	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	100.0	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	89.2	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	98.8	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	98.6	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	75.2	41.0	123
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3762642)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	83.2	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	91.7	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	98.1	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	98.6	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	94.8	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	98.4	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	93.8	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	101	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	98.8	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	99.2	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	92.8	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	98.4	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	102	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	99.4	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	94.6	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	98.5	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	98.4	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	104	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	88.9	41.0	123
EP075(SIM)A: Phenolic Compounds (QCLot: 3762623)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	6 mg/kg	107	71.0	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	6 mg/kg	106	72.0	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	6 mg/kg	102	71.0	123

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)A: Phenolic Compounds (QCLot: 3762623) - continued								
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	12 mg/kg	107	67.0	127
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	6 mg/kg	84.6	54.0	114
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	6 mg/kg	97.1	68.0	126
EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	6 mg/kg	99.9	66.0	120
EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	6 mg/kg	107	70.0	120
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	6 mg/kg	95.8	70.0	116
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	6 mg/kg	100	54.0	114
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	6 mg/kg	104	60.0	114
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	12 mg/kg	# 59.6	10.0	57.0
EP075(SIM)A: Phenolic Compounds (QCLot: 3762641)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	6 mg/kg	102	71.0	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	6 mg/kg	102	72.0	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	6 mg/kg	98.2	71.0	123
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	12 mg/kg	104	67.0	127
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	6 mg/kg	77.4	54.0	114
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	6 mg/kg	94.2	68.0	126
EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	6 mg/kg	97.8	66.0	120
EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	6 mg/kg	104	70.0	120
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	6 mg/kg	93.4	70.0	116
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	6 mg/kg	99.3	54.0	114
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	6 mg/kg	102	60.0	114
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	12 mg/kg	53.0	10.0	57.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3762623)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	105	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	105	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	102	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	103	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	103	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	101	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	103	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	105	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	92.9	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	97.3	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	93.1	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	102	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	98.2	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	105	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	104	62.0	118

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3762623) - continued								
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	98.6	63.0	121
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3762641)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	101	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	101	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	98.9	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	101	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	101	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	99.0	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	101	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	103	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	92.7	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	97.2	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	90.0	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	104	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	97.0	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	101	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	99.6	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	93.0	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3762622)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	86.6	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	88.8	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	93.5	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3762640)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	92.2	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	99.6	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	92.5	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3764883)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	96.2	68.4	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3764894)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	93.4	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3762622)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	88.1	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	91.3	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	77.7	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3762640)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	100	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	91.3	74.0	138

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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3762640) - continued								
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	75.7	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3764883)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	97.5	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3764894)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	100	68.4	128
EP080: BTEXN (QCLot: 3764883)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	94.6	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	92.2	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	91.1	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	89.6	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	89.5	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	76.0	63.0	119
EP080: BTEXN (QCLot: 3764894)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	98.3	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	85.2	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	90.7	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	86.4	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	87.4	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	81.5	63.0	119

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: 3764710)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	94.9	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.7	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	90.6	86.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	96.6	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	87.3	85.0	115
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	98.5	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	96.0	79.0	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3762298)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	97.3	77.0	111
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3762775)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	93.6	75.0	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3762775)								

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
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3762775) - continued								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	100	75.0	127
EP080: BTEXN (QCLot: 3762775)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	96.5	70.0	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	102	69.0	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	105	70.0	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	104	69.0	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	106	72.0	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	107	70.0	120

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3768587)							
ES2123851-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	90.2	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	70.6	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	# Not Determined	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	92.7	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	94.9	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	74.3	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	# Not Determined	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 3768589)							
ES2123870-014	S-14	EG005T: Arsenic	7440-38-2	50 mg/kg	91.6	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	109	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	86.3	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	88.5	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	106	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	104	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	112	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3768588)							
ES2123865-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	110	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3768590)							

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3768590) - continued							
ES2123870-019	S-19	EG035T: Mercury	7439-97-6	5 mg/kg	111	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3762625)							
ES2123870-001	S-1 shale	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	113	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 3762643)							
ES2123870-021	S-21	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	83.0	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 3762624)							
ES2123870-001	S-1 shale	EP068: gamma-BHC	58-89-9	0.5 mg/kg	96.5	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	76.0	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	88.0	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	86.1	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	84.8	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	94.2	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 3762642)							
ES2123870-021	S-21	EP068: gamma-BHC	58-89-9	0.5 mg/kg	86.6	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	77.9	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	85.5	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	104	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	79.0	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	79.2	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3762624)							
ES2123870-001	S-1 shale	EP068: Diazinon	333-41-5	0.5 mg/kg	110	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	87.0	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	85.6	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	83.1	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	75.8	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 3762642)							
ES2123870-021	S-21	EP068: Diazinon	333-41-5	0.5 mg/kg	106	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	84.0	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	82.0	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	96.2	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	80.4	70.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 3762623)							
ES2123870-001	S-1 shale	EP075(SIM): Phenol	108-95-2	10 mg/kg	106	70.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	108	70.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	84.8	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	94.6	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	68.5	20.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP075(SIM)A: Phenolic Compounds (QCLot: 3762641)							
ES2123870-021	S-21	EP075(SIM): Phenol	108-95-2	10 mg/kg	96.2	70.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	97.0	70.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	79.5	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	89.1	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	87.6	20.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3762623)							
ES2123870-001	S-1 shale	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	96.2	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	103	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 3762641)							
ES2123870-021	S-21	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	89.5	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	93.9	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3762622)							
ES2123870-001	S-1 shale	EP071: C10 - C14 Fraction	----	480 mg/kg	115	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	115	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	123	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3762640)							
ES2123870-021	S-21	EP071: C10 - C14 Fraction	----	480 mg/kg	106	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	124	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	129	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3764883)							
ES2123870-001	S-1 shale	EP080: C6 - C9 Fraction	----	32.5 mg/kg	98.7	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3764894)							
ES2123844-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	112	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3762622)							
ES2123870-001	S-1 shale	EP071: >C10 - C16 Fraction	----	860 mg/kg	127	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	115	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	113	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3762640)							
ES2123870-021	S-21	EP071: >C10 - C16 Fraction	----	860 mg/kg	132	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	123	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	119	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3764883)							
ES2123870-001	S-1 shale	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	96.3	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3764894)							
ES2123844-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	118	70.0	130

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: 3764883)							
ES2123870-001	S-1 shale	EP080: Benzene	71-43-2	2.5 mg/kg	90.4	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	89.7	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	91.0	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	91.1	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	91.5	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	73.4	70.0	130
EP080: BTEXN (QCLot: 3764894)							
ES2123844-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	103	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	91.8	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	83.5	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	83.4	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	84.8	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	84.8	70.0	130

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: 3764710)							
ES2123545-001	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	99.4	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	96.9	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	95.2	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	98.2	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	104	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	97.1	70.0	130
		EG020A-T: Zinc	7440-66-6	1 mg/L	99.2	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 3762298)							
ES2123296-001	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	97.2	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 3762775)							
ES2122800-010	Anonymous	EP080: C6 - C9 Fraction	----	325 µg/L	108	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 3762775)							
ES2122800-010	Anonymous	EP080: C6 - C10 Fraction	C6_C10	375 µg/L	110	70.0	130
EP080: BTEXN (QCLot: 3762775)							
ES2122800-010	Anonymous	EP080: Benzene	71-43-2	25 µg/L	104	70.0	130
		EP080: Toluene	108-88-3	25 µg/L	102	70.0	130
		EP080: Ethylbenzene	100-41-4	25 µg/L	105	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP080: BTEXN (QCLot: 3762775) - continued							
ES2122800-010	Anonymous	EP080: meta- & para-Xylene	108-38-3 106-42-3	25 µg/L	101	70.0	130
		EP080: ortho-Xylene	95-47-6	25 µg/L	102	70.0	130
		EP080: Naphthalene	91-20-3	25 µg/L	92.2	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2123870**	Page	: 1 of 13
Client	: **BENBOW ENVIRONMENTAL**	Laboratory	: Environmental Division Sydney
Contact	: Matthew Taylor	Telephone	: +61-2-8784 8555
Project	: 191318-03	Date Samples Received	: 28-Jun-2021
Site	: 191318-03	Issue Date	: 05-Jul-2021
Sampler	: DAMIEN THOMAS, Matthew Taylor	No. of samples received	: 31
Order number	: 191318-03	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 Duplicate outliers occur.**
- **Laboratory Control outliers exist - please see following pages for full details.**
- **Matrix Spike outliers exist - please see following pages for full details.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

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

Outliers : Frequency of Quality Control Samples

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

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
Laboratory Control Spike (LCS) Recoveries							
EP075(SIM)A: Phenolic Compounds	QC-3762623-002	----	**Pentachlorophenol**	87-86-5	59.6 %	10.0-57.0%	**Recovery greater than upper control limit**
Matrix Spike (MS) Recoveries							
EG005(ED093)T: Total Metals by ICP-AES	ES2123851--001	Anonymous	**Chromium**	7440-47-3	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**
EG005(ED093)T: Total Metals by ICP-AES	ES2123851--001	Anonymous	**Zinc**	7440-66-6	Not Determined	----	**MS recovery not determined, background level greater than or equal to 4x spike level.**

Analysis Holding Time Compliance

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

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

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

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

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)								
Soil Glass Jar - Unpreserved (EA055)								
S-1 - shale,	S-2 - silty clay loam,	**25-Jun-2021**	**----**	----	----	**01-Jul-2021**	09-Jul-2021	✓
S-3 - silty clay loam,	S-4,							
S-5,	S-6,							
S-7,	S-8,							
S-9,	S-10,							
S-11,	S-12,							
S-13,	S-14,							
S-15,	S-16,							
S-17,	S-18,							
S-19,	S-20,							
S-21,	S-22,							
S-23,	S-24,							
S-25,	S-26,							
S-27,	S-28,							
S-13D,	DUP-2							

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
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)								
S-1 - shale,	S-2 - silty clay loam,	**25-Jun-2021**	**----**	----	----	**29-Jun-2021**	22-Dec-2021	✓
S-3 - silty clay loam,	S-4,							
S-5,	S-6,							
S-7,	S-8,							
S-9,	S-10,							
S-11,	S-12,							
S-13,	S-14,							
S-15,	S-16,							
S-17,	S-18,							
S-19,	S-20,							
S-21,	S-22,							
S-23,	S-24,							
S-25,	S-26,							
S-27,	S-28,							
S-13D								
EG005(ED093)T: Total Metals by ICP-AES								
Soil Glass Jar - Unpreserved (EG005T)								
S-1 - shale,	S-2 - silty clay loam,	**25-Jun-2021**	**01-Jul-2021**	22-Dec-2021	✓	**01-Jul-2021**	22-Dec-2021	✓
S-3 - silty clay loam,	S-4,							
S-5,	S-6,							
S-7,	S-8,							
S-9,	S-10,							
S-11,	S-12,							
S-13,	S-14,							
S-15,	S-16,							
S-17,	S-18,							
S-19,	S-20,							
S-21,	S-22,							
S-23,	S-24,							
S-25,	S-26,							
S-27,	S-28,							
S-13D,	DUP-2							

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)							
S-1 - shale, S-2 - silty clay loam, S-3 - silty clay loam, S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14, S-15, S-16, S-17, S-18, S-19, S-20, S-21, S-22, S-23, S-24, S-25, S-26, S-27, S-28, S-13D, DUP-2	**25-Jun-2021**	**01-Jul-2021**	23-Jul-2021	✓	**02-Jul-2021**	23-Jul-2021	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066)							
S-1 - shale, S-2 - silty clay loam, S-3 - silty clay loam, S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14, S-15, S-16, S-17, S-18, S-19, S-20	**25-Jun-2021**	**30-Jun-2021**	09-Jul-2021	✓	**01-Jul-2021**	09-Aug-2021	✓
Soil Glass Jar - Unpreserved (EP066)							
S-21, S-22, S-23, S-24, S-25, S-26, S-27, S-28, S-13D, DUP-2	**25-Jun-2021**	**30-Jun-2021**	09-Jul-2021	✓	**02-Jul-2021**	09-Aug-2021	✓

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
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068)							
S-1 - shale, S-2 - silty clay loam, S-3 - silty clay loam, S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14, S-15, S-16, S-17, S-18, S-19, S-20	**25-Jun-2021**	**30-Jun-2021**	09-Jul-2021	✓	**01-Jul-2021**	09-Aug-2021	✓
Soil Glass Jar - Unpreserved (EP068)							
S-21, S-22, S-23, S-24, S-25, S-26, S-27, S-28, S-13D, DUP-2	**25-Jun-2021**	**30-Jun-2021**	09-Jul-2021	✓	**02-Jul-2021**	09-Aug-2021	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068)							
S-1 - shale, S-2 - silty clay loam, S-3 - silty clay loam, S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14, S-15, S-16, S-17, S-18, S-19, S-20	**25-Jun-2021**	**30-Jun-2021**	09-Jul-2021	✓	**01-Jul-2021**	09-Aug-2021	✓
Soil Glass Jar - Unpreserved (EP068)							
S-21, S-22, S-23, S-24, S-25, S-26, S-27, S-28, S-13D, DUP-2	**25-Jun-2021**	**30-Jun-2021**	09-Jul-2021	✓	**02-Jul-2021**	09-Aug-2021	✓

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075(SIM)A: Phenolic Compounds							
Soil Glass Jar - Unpreserved (EP075(SIM))							
S-1 - shale, S-2 - silty clay loam, S-3 - silty clay loam, S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14, S-15, S-16, S-17, S-18, S-19, S-20	**25-Jun-2021**	**30-Jun-2021**	09-Jul-2021	✓	**01-Jul-2021**	09-Aug-2021	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
S-21, S-22, S-23, S-24, S-25, S-26, S-27, S-28, S-13D, DUP-2	**25-Jun-2021**	**30-Jun-2021**	09-Jul-2021	✓	**02-Jul-2021**	09-Aug-2021	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
S-1 - shale, S-2 - silty clay loam, S-3 - silty clay loam, S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14, S-15, S-16, S-17, S-18, S-19, S-20	**25-Jun-2021**	**30-Jun-2021**	09-Jul-2021	✓	**01-Jul-2021**	09-Aug-2021	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
S-21, S-22, S-23, S-24, S-25, S-26, S-27, S-28, S-13D, DUP-2	**25-Jun-2021**	**30-Jun-2021**	09-Jul-2021	✓	**02-Jul-2021**	09-Aug-2021	✓

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP071)							
S-1 - shale, S-2 - silty clay loam, S-3 - silty clay loam, S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14, S-15, S-16, S-17, S-18, S-19, S-20	**25-Jun-2021**	**30-Jun-2021**	09-Jul-2021	✓	**01-Jul-2021**	09-Aug-2021	✓
Soil Glass Jar - Unpreserved (EP080)							
S-1 - shale, S-2 - silty clay loam, S-3 - silty clay loam, S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14, S-15, S-16, S-17, S-18, S-19, S-20, S-21, S-22, S-23, S-24, S-25, S-26, S-27, S-28, S-13D, DUP-2	**25-Jun-2021**	**30-Jun-2021**	09-Jul-2021	✓	**02-Jul-2021**	09-Jul-2021	✓

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP071)							
S-1 - shale, S-2 - silty clay loam, S-3 - silty clay loam, S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14, S-15, S-16, S-17, S-18, S-19, S-20	**25-Jun-2021**	**30-Jun-2021**	09-Jul-2021	✓	**01-Jul-2021**	09-Aug-2021	✓
Soil Glass Jar - Unpreserved (EP080)							
S-1 - shale, S-2 - silty clay loam, S-3 - silty clay loam, S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14, S-15, S-16, S-17, S-18, S-19, S-20, S-21, S-22, S-23, S-24, S-25, S-26, S-27, S-28, S-13D, DUP-2	**25-Jun-2021**	**30-Jun-2021**	09-Jul-2021	✓	**02-Jul-2021**	09-Jul-2021	✓

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: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
S-1 - shale, S-2 - silty clay loam, S-3 - silty clay loam, S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13, S-14, S-15, S-16, S-17, S-18, S-19, S-20, S-21, S-22, S-23, S-24, S-25, S-26, S-27, S-28, S-13D, DUP-2	**25-Jun-2021**	**30-Jun-2021**	09-Jul-2021	✓	**02-Jul-2021**	09-Jul-2021	✓

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							
Soil Glass Jar - Unpreserved (EG020A-T)							
RINSATE	**25-Jun-2021**	**30-Jun-2021**	22-Dec-2021	✓	**30-Jun-2021**	22-Dec-2021	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
RINSATE	**25-Jun-2021**	**----**	----	----	**29-Jun-2021**	09-Jul-2021	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
RINSATE	**25-Jun-2021**	**30-Jun-2021**	02-Jul-2021	✓	**30-Jun-2021**	02-Jul-2021	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
RINSATE	**25-Jun-2021**	**30-Jun-2021**	02-Jul-2021	✓	**30-Jun-2021**	02-Jul-2021	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
RINSATE	**25-Jun-2021**	**30-Jun-2021**	02-Jul-2021	✓	**30-Jun-2021**	02-Jul-2021	✓

Quality Control Parameter Frequency Compliance

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

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	4	37	10.81	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	4	37	10.81	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	35	11.43	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	37	5.41	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	37	5.41	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	35	5.71	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	37	5.41	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	37	5.41	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	35	5.71	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	37	5.41	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	37	5.41	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	35	5.71	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	

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)							
Total Mercury by FIMS	EG035T	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Total Mercury by FIMS	EG035T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Total Mercury by FIMS	EG035T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	18	**5.56**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	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).
Asbestos Identification in Soils	EA200	SOIL	AS 4964 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM 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.
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 AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Analytical Methods	Method	Matrix	Method Descriptions
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260 Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
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)
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for purging.

CHAIN OF CUSTODY

COC#: **24510** *ALS Laboratory:* ES Sydney

CLIENT: BENENV - BENBOW ENVIRONMENTAL

PROJECT: 191318-03

SITE: 191318-03

ORDER NO: 191318-03

PROJECT MANAGER: Matt Taylor CONTACT PH: SAMPLER MOBILE:

PRIMARY SAMPLER: Damien Thomas QUOTE NO: COMPASS BLANKET QUOTE / ES2021BENENV0001

EMAIL REPORTS TO: mtaylor@benbowenviro.com.au, damien@benbowenviro.com.au

EMAIL INVOICES TO: accountsreceivable@benbowenviro.com.au

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

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

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	EA200B (asbestos) SOLID	S-19 SOIL	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
001	S-1	shale	25/06/2021 10:03 AM	Soil	ALS: 1 Non ALS: 1	No		X	X		Shale
002	S-2	silty clay loam	25/06/2021 10:18 AM	Soil	ALS: 1 Non ALS: 1	No		X	X		
003	S-3	silty clay loam	25/06/2021 10:39 AM	Soil	ALS: 1 Non ALS: 1	No		X	X		
004	S-4		25/06/2021 10:56 AM	Soil	ALS: 1 Non ALS: 1	No		X	X		
005	S-5		25/06/2021 11:12 AM	Soil	ALS: 1 Non ALS: 1	No		X	X		
006	S-6		25/06/2021 11:21 AM	Soil	ALS: 1 Non ALS: 1	No		X	X		
007	S-7		25/06/2021 11:32 AM	Soil	ALS: 1 Non ALS: 1	No		X	X		
008	S-8		25/06/2021 11:40 AM	Soil	ALS: 1 Non ALS: 1	No		X	X		
009	S-9		25/06/2021 11:47 AM	Soil	ALS: 1 Non ALS: 1	No		X	X		

CHAIN OF CUSTODY

COC#: **24510** *ALS Laboratory:* ES Sydney

CLIENT: BENENV - BENBOW ENVIRONMENTAL

PROJECT: 191318-03

SITE: 191318-03

ORDER NO: 191318-03

PROJECT MANAGER: Matt Taylor CONTACT PH: SAMPLER MOBILE:

PRIMARY SAMPLER: Damien Thomas QUOTE NO: COMPASS BLANKET QUOTE / ES2021BENENV0001

EMAIL REPORTS TO: mtaylor@benbowenviro.com.au, damien@benbowenviro.com.au

EMAIL INVOICES TO: accountsreceivable@benbowenviro.com.au

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

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

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	EA200B (asbestos) SOLID	S-19 SOIL	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
010	S-10		25/06/2021 11:53 AM	Soil	ALS: 1 Non ALS: 1	No		X	X		
011	S-11		25/06/2021 01:35 PM	Soil	ALS: 1 Non ALS: 1	No		X	X		
012	S-12		25/06/2021 01:37 PM	Soil	ALS: 1 Non ALS: 1	No		X	X		
013	S-13		25/06/2021 02:08 PM	Soil	ALS: 1 Non ALS: 1	No		X	X		
014	S-14		25/06/2021 02:06 PM	Soil	ALS: 1 Non ALS: 1	No		X	X		
015	S-15		25/06/2021 02:30 PM	Soil	ALS: 1 Non ALS: 1	No		X	X		
016	S-16		25/06/2021 02:32 PM	Soil	ALS: 1 Non ALS: 1	No		X	X		
017	S-17		25/06/2021 02:48 PM	Soil	ALS: 1 Non ALS: 1	No		X	X		
018	S-18		25/06/2021 02:54 PM	Soil	ALS: 1 Non ALS: 1	No		X	X		

CHAIN OF CUSTODY

COC#: **24510** *ALS Laboratory:* ES Sydney

CLIENT: BENENV - BENBOW ENVIRONMENTAL

PROJECT: 191318-03

SITE: 191318-03

ORDER NO: 191318-03

PROJECT MANAGER: Matt Taylor CONTACT PH: SAMPLER MOBILE:

PRIMARY SAMPLER: Damien Thomas QUOTE NO: COMPASS BLANKET QUOTE / ES2021BENENV0001

EMAIL REPORTS TO: mtaylor@benbowenviro.com.au, damien@benbowenviro.com.au

EMAIL INVOICES TO: accountsreceivable@benbowenviro.com.au

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

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

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	EA200B (asbestos) SOLID	S-19 SOIL	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
019	S-19		25/06/2021 03:10 PM	Soil	ALS: 1 Non ALS: 1	No		X	X		
020	S-20		25/06/2021 03:15 PM	Soil	ALS: 1 Non ALS: 1	No		X	X		
021	S-21		25/06/2021 04:15 PM	Soil	ALS: 1 Non ALS: 1	No		X	X		
022	S-22		25/06/2021 04:16 PM	Soil	ALS: 1 Non ALS: 1	No		X	X		
023	S-23		25/06/2021 04:17 PM	Soil	ALS: 1 Non ALS: 1	No		X	X		
024	S-24		25/06/2021 04:18 PM	Soil	ALS: 1 Non ALS: 1	No		X	X		
025	S-25		25/06/2021 04:19 PM	Soil	ALS: 1 Non ALS: 1	No		X	X		
026	S-26		25/06/2021 04:20 PM	Soil	ALS: 1 Non ALS: 1	No		X	X		
027	S-27		25/06/2021 04:21 PM	Soil	ALS: 1 Non ALS: 1	No		X	X		

CHAIN OF CUSTODY

COC#: **24510** *ALS Laboratory:* ES Sydney

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

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PROJECT: 191318-03

SITE: 191318-03

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TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

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

Random Sample Temperature on Receipt: °C

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SAMPLE DETAILS							ANALYSIS REQUIRED				
SAMPLE	NAME	DESCRIPTION	DATE / TIME	MATRIX	TOTAL BOTTLES	ON HOLD	Analysis NOT REQUIRED	EA200B (asbestos) SOLID	S-19 SOIL	ALTERNATIVE ANALYSIS	ADDITIONAL INFORMATION
028	S-28		25/06/2021 04:45 PM	Soil	ALS: 1 Non ALS: 1	No		X	X		
029	S-13D		25/06/2021 02:08 PM	Soil	ALS: 1 Non ALS: 1	No		X	X		
030	DUP-2		25/06/2021 04:15 PM	Soil	ALS: 1 Non ALS: 0	No			X		
031	RINSATE		25/06/2021 05:04 PM	Water	ALS: 1 Non ALS: 0	No	-			VOC, metals	

CHAIN OF CUSTODY

COC#: **24510** *ALS Laboratory:* ES Sydney

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DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

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

Random Sample Temperature on Receipt: °C

Other comments:

SAMPLE	SAMPLE NAME	BOTTLE NAME	VOLUME	BARCODE	TYPE	FILTERED	REASON
001	S-1	Soil Glass Jar - Unpreserved	250 mL	00261020096319	Orange	No	
002	S-2	Soil Glass Jar - Unpreserved	250 mL	00261020096412	Orange	No	
003	S-3	Soil Glass Jar - Unpreserved	250 mL	00261020096391	Orange	No	
004	S-4	Soil Glass Jar - Unpreserved	250 mL	00261020096387	Orange	No	
005	S-5	Soil Glass Jar - Unpreserved	250 mL	00261020096345	Orange	No	
006	S-6	Soil Glass Jar - Unpreserved	250 mL	00261020096433	Orange	No	
007	S-7	Soil Glass Jar - Unpreserved	250 mL	00261020096214	Orange	No	
008	S-8	Soil Glass Jar - Unpreserved	250 mL	00261020096193	Orange	No	
009	S-9	Soil Glass Jar - Unpreserved	250 mL	00261020096454	Orange	No	
010	S-10	Soil Glass Jar - Unpreserved	250 mL	00261020096368	Orange	No	
011	S-11	Soil Glass Jar - Unpreserved	250 mL	00261020096274	Orange	No	
012	S-12	Soil Glass Jar - Unpreserved	250 mL	00261020096138	Orange	No	
013	S-13	Soil Glass Jar - Unpreserved	250 mL	00261020096365	Orange	No	
014	S-14	Soil Glass Jar - Unpreserved	250 mL	00261020096201	Orange	No	
015	S-15	Soil Glass Jar - Unpreserved	250 mL	00261020096384	Orange	No	
016	S-16	Soil Glass Jar - Unpreserved	250 mL	00261020096377	Orange	No	
017	S-17	Soil Glass Jar - Unpreserved	250 mL	00261020096382	Orange	No	
018	S-18	Soil Glass Jar - Unpreserved	250 mL	00261020096355	Orange	No	
019	S-19	Soil Glass Jar - Unpreserved	250 mL	00261020096372	Orange	No	
020	S-20	Soil Glass Jar - Unpreserved	250 mL	00261020096353	Orange	No	
021	S-21	Soil Glass Jar - Unpreserved	250 mL	00261020096025	Orange	No	
022	S-22	Soil Glass Jar - Unpreserved	250 mL	00261020096371	Orange	No	
023	S-23	Soil Glass Jar - Unpreserved	250 mL	00261020096179	Orange	No	
024	S-24	Soil Glass Jar - Unpreserved	250 mL	00261020095974	Orange	No	
025	S-25	Soil Glass Jar - Unpreserved	250 mL	00261020096147	Orange	No	
026	S-26	Soil Glass Jar - Unpreserved	250 mL	00261020096043	Orange	No	

CHAIN OF CUSTODY

COC#: **24510** *ALS Laboratory:* ES Sydney

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DATE TIME:	DATE TIME:	DATE TIME:	DATE TIME:

TURNAROUND REQUIREMENTS : 5 Days

Biohazard info:

LABORATORY USE ONLY (Circle)

Custody Seal intact? Yes No N/A

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

Random Sample Temperature on Receipt: °C

Other comments:

027	S-27	Soil Glass Jar - Unpreserved	250 mL	00261020096174	Orange	No	
028	S-28	Soil Glass Jar - Unpreserved	250 mL	00261020096210	Orange	No	
029	S-13D	Soil Glass Jar - Unpreserved	250 mL	00261020096385	Orange	No	
030	DUP-2	Soil Glass Jar - Unpreserved	250 mL	00261020096215	Orange	No	
031	RINSATE	Soil Glass Jar - Unpreserved	250 mL	00261020096127	Orange	No	

Total Bottle Count: ALS: 31, Non ALS: 29