STAGE 2 DETAILED SITE INVESTIGATION (DSI)

AUSTRALIAN CHRISTIAN COLLEGE
LOT 90 DEPOSIT PLAN 1224210
61 FARM ROAD, RIVERSTONE, NSW 2765

Prepared For:	**Australian Christian College**
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EXECUTIVE SUMMARY

Environment & Natural Resource Solutions (ENRS) were commissioned as independent environmental consultants in May 2019 by *Lippmann Partnership Architects* (the client) on behalf of the Australian Christian College – Marsden Park, to conduct a Stage 2 Detailed Site Investigation (DSI) at 61 Farm Road, Riverstone, NSW 2765 (herein referred to as the Site).

ENRS understand this assessment has been undertaken in anticipation of the development of the Site is for a primary and secondary school building. At the time of this investigation the proposed construction area was zoned as RU4 - Rural Small Holdings. Given the proposed change in land use sensitivity, this DSI is required for due diligence purposes to supplement the previous Stage 1 Preliminary Site Investigation (PSI) to assess the potential for ground contamination and document if the Site is suitable or can be made suitable for the proposed land use, consistent with *NSW State Environmental Planning Policy No. 55 (SEPP55)*.

This report documents the results of available Site historical records, borehole investigations, soil sampling and NATA accredited laboratory analysis in general accordance with National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1), and the guidelines made and approved under Section 105 of the *Contaminated Land Management Act* 1997 (the Act), namely the Guidelines for Consultants Reporting on Contaminated Sites (OEH;2011); and the Guidelines for the Assessment and Management of Groundwater Contamination (DEC;2007).

The aim of the DSI was to provide comprehensive information on any issues raised in preliminary investigations and characterise the type, extent and level of contamination by conducting intrusive ground investigations. Where applicable, identify any potential off-site impacts on soil, sediment and biota, and review the project results to assess if the Site will pose no unacceptable risk to human health or to the environment. Compile the project results and prepare recommendations for further investigations, if required, and provide a statement regarding the suitability of the Site for the proposed to be suitable for a school building with on ground pedestrian access for school staff and students.

The scope of work for the project comprised the following tasks:

- Review available Site history records incorporating previous investigation reports, proposed development plans, Council records and publicly available data (including aerial photographs, geological maps, topographical maps, and registered groundwater bore database);
- Site works – supervise borehole investigations, and soil sampling in thirty two (32) locations and installation of three (3) groundwater monitoring wells;
- Submit selected samples to a NATA accredited laboratory for analysis;
- Conduct Tier 1 screening of NATA analysis results against *NSW EPA* endorsed Site Assessment Criteria (SAC); and

- Document investigation results. Prepare a Stage 2 DSI report with assessment of Site suitability and recommendations for additional investigation works and environmental management, if required.

Based on the available information reviewed during the scope of works the following conclusions are provided:

- The tasks completed during this investigation have met the project objectives set out in **Section 1.2**. Including, a review of the Stage 1 PSI and updated review of historical imagery, preparation of an updated Conceptual Site Model (CSM), borehole investigations sampling and testing for Contaminants of Potential Concern (CoPC) to characterise and delineate AECs, supported by a review of any data gaps and uncertainties;
- Site history records indicate the Site has a history of agricultural use since circa 1977 with potential use as a knackery or fellmonger as indicated by the former concrete pits in the centre of the site with elevated levels of formaldehyde in soil;
- During the site walkover and investigation works, ENRS noted the former farm Dam in the south of the Site and the former concrete Pits have been filled and levelled. Review of online historical imagery indicates the Dam and Pits were filled circa 2016, as evident from the historical aerial imagery, which is noted to be after the Stage 1 PSI was issued by ENRS in July 2015. ENRS understand the ACC Site management has no records of the filling activities and was not aware of the works. Fill with building debris was also evident across the surface of the Site as it appears uncontrolled Fill has been used to Fill low points and level the general area;
- Based on the proposed development of a School or Child Care Centre the appropriate Site Assessment Criteria (SAC) adopted by this assessment is the ASC NEPM HIL 'A' for Residential and Child Care Sites;
- ENRS environmental professionals conducted borehole investigations, groundwater Well installation and soil sampling over the ***9th, 10th and 11th of December 2019***. The investigation comprised Asbestos in Soil (ASBINS) sampling at sixteen (16) locations, and thirty-two (32) solid flight auger boreholes as required by AS4482.1(2005) for Site characterisation of 2.14 Hectares. Three (3) boreholes were constructed with groundwater Monitoring Wells (MWs) downgradient of AECs;
- Borehole investigations generally encountered Fill within and around the central and southern portions of the Site associated with the filled Pit and Dam areas. The deepest Fill was recorded in BH06 with hydrocarbon stained Fill to a maximum depth of 3 m within the former Dam, underlain by weathered sedimentary rock with no evidence of hydrocarbon impact below 3.0 m;
- No groundwater was intersected at the Site during the investigations and all three (3) Monitoring Wells were recorded as dry. No further assessment of groundwater was considered necessary supported by soil samples from below the base of Fill which reported with no elevated levels of contamination;
- Representative soil samples were collected from Boreholes, stockpiles, shallow Fill and topsoil areas and submitted for analysis by a NATA accredited laboratory for Contaminants of Potential Concern (CoPC) including: eight (8) heavy metals; TRH; BTEX; PAHs; OCPs;

OPPs; Phenols; formaldehyde; and asbestos. QA/QC results indicate that for the samples collected during the scope of works, sampling techniques, transport procedures and laboratory analysis were satisfactory and the quality of the data is acceptable for use in this assessment;

- Exceedances of the adopted 'HIL A' guidelines for hydrocarbons, PAHs, and formaldehyde were identified within the filled Dam and Pits. Visual and olfactory indicators for hydrocarbon were reported in Fill to 3 m in BH06 and BH07. Results for soil samples below the base of Fill reported levels of CoPC below the SAC which indicates the Fill has not migrated or leached beyond the footprint of the fill areas;
- Asbestos in soil was identified in multiple areas at the Site including;
  - AEC01: Friable asbestos in Fill within former treatment Pits;
  - AEC02: Surface soils adjacent former shed area/s. Fragments were observed during the PSI and DSI inspections. The ACM was greater than 7 mm characterised as bonded or non-friable. No traces of asbestos or fines were detected in soil samples from the area; and
  - AEC04: Fill within and adjacent the former dam area. Estimated quantities of asbestos impacted soil total to ~400m^3. Characterised as friable.

  The Fill in areas AEC01 and AEC04 contains asbestos fines is required to be managed as friable asbestos. The Fill is also impacted by formaldehyde, hydrocarbons and PAHs and is not suitable for the proposed landuse, and will require remediation by excavation and off-site disposal as waste to a suitably licenced facility. Where soil at AEC02 comprises non-friable ACM the material is suitable for remediation by manual removal of fragments or should be placed at depths greater than 0.5 m to minimise potential disturbance;
- The Areas of Environmental Concern (AECs) identified in this Stage 2 DSI include:
  - AEC01 – Former Pit area and uncontrolled Fill;
  - AEC02 – Asbestos in soil adjacent former and current structures;
  - AEC03 – Buildings and potential weathering of hazardous materials; and
  - AEC04 – Former southern Dams and uncontrolled Fill.
- Based on the results of this DSI, the Site can be made suitable for the proposed development in accordance with *NSW State Environmental Planning Policy No. 55 (SEPP55)* pending the remediation and validation of the identified AECs.

Based on the findings of this DSI, the following recommendation are provided:

- Remediation works must be carried out in accordance with a Stage 3 Remediation Action Plan (RAP) prepared by a suitably qualified environmental consultant and approved by the Regulator prior to commencement;
- Remediation of soil and Fill with asbestos fines must be managed as friable asbestos under supervision of a Class A licenced removal contractor. Soil and Fill with non-friable asbestos must be remediated under supervision of a minimum Class B licenced contractor. All

asbestos works must be completed in accordance with the Code of Practise; How to safely remove asbestos (*SafeWork NSW*, 2019);

- Material disposed off-Site will need to be accompanied by a waste classification certificate prepared in accordance with the NSW EPA Waste Classification Guidelines (2014);
- A clearance certificate is required from an appropriately licenced asbestos assessor (LAA) for asbestos removal areas prior to re-occupation and entry without asbestos specific PPE;
- Upon completion of remediation works, the Site must be validated with results documented in a Stage 4 Validation report to confirm if the Site is suitable for the proposed landuse;
- The buildings present in AEC03 must be subject of a standalone Hazardous Materials survey, and may be managed separately to soil remediation works, during any demolition or refurbishment;
- Should any change in Site conditions or incident occur which causes a potential environmental impact, a suitable environmental professional should be engaged to further assess the Site and consider requirements for any additional assessment

TABLE OF CONTENTS

LIST OF TABLES, FIGURES & APPENDICES

TABLES

FIGURES

APPENDICES

1.0 INTRODUCTION

1.1 BACKGROUND

Environment & Natural Resource Solutions (ENRS) were commissioned as independent environmental consultants in May 2019 by *Lippmann Partnership Architects* (the client) on behalf of the Australian Christian College – Marsden Park, to conduct a Stage 2 Detailed Site Investigation (DSI) at 61 Farm Road, Riverstone, NSW 2765 (herein referred to as the Site).

ENRS understand this assessment has been undertaken in anticipation of the development of the Site is for a primary and secondary school building. At the time of this investigation the proposed construction area was zoned as RU4 - Rural Small Holdings. Given the proposed change in land use sensitivity, this DSI is required for due diligence purposes to supplement the previous Stage 1 Preliminary Site Investigation (PSI) to assess the potential for ground contamination and document if the Site is suitable or can be made suitable for the proposed land use, consistent with *NSW State Environmental Planning Policy No. 55 (SEPP55)*.

This report documents the results of available Site historical records, borehole investigations, soil sampling and NATA accredited laboratory analysis in general accordance with National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1), and the guidelines made and approved under Section 105 of the *Contaminated Land Management Act* 1997 (the Act), namely the Guidelines for Consultants Reporting on Contaminated Sites (OEH;2011); and the Guidelines for the Assessment and Management of Groundwater Contamination (DEC;2007).

1.2 OBJECTIVES

The aim of the DSI was to provide comprehensive information on any issues raised in preliminary investigations and characterise the type, extent and level of contamination by conducting intrusive ground investigations. Where applicable, identify any potential off-site impacts on soil, sediment and biota, and review the project results to assess if the Site will pose no unacceptable risk to human health or to the environment. Compile the project results and prepare recommendations for further investigations, if required, and provide a statement regarding the suitability of the Site for the proposed future residential land use.

1.3 SCOPE OF WORK

The scope of work for the project comprised the following tasks:

- Review available Site history records incorporating previous investigation reports, proposed development plans, Council records and publicly available data (including aerial photographs, geological maps, topographical maps, and registered groundwater bore database);
- Site works – supervise borehole investigations, and soil sampling in thirty two (32) locations and installation of three (3) groundwater monitoring wells;

- Submit selected samples to a NATA accredited laboratory for analysis;
- Conduct Tier 1 screening of NATA analysis results against *NSW EPA* endorsed Site Assessment Criteria (SAC); and
- Document investigation results. Prepare a Stage 2 DSI report with assessment of Site suitability and recommendations for additional investigation works and environmental management, if required.

2.0 SITE DESCRIPTION

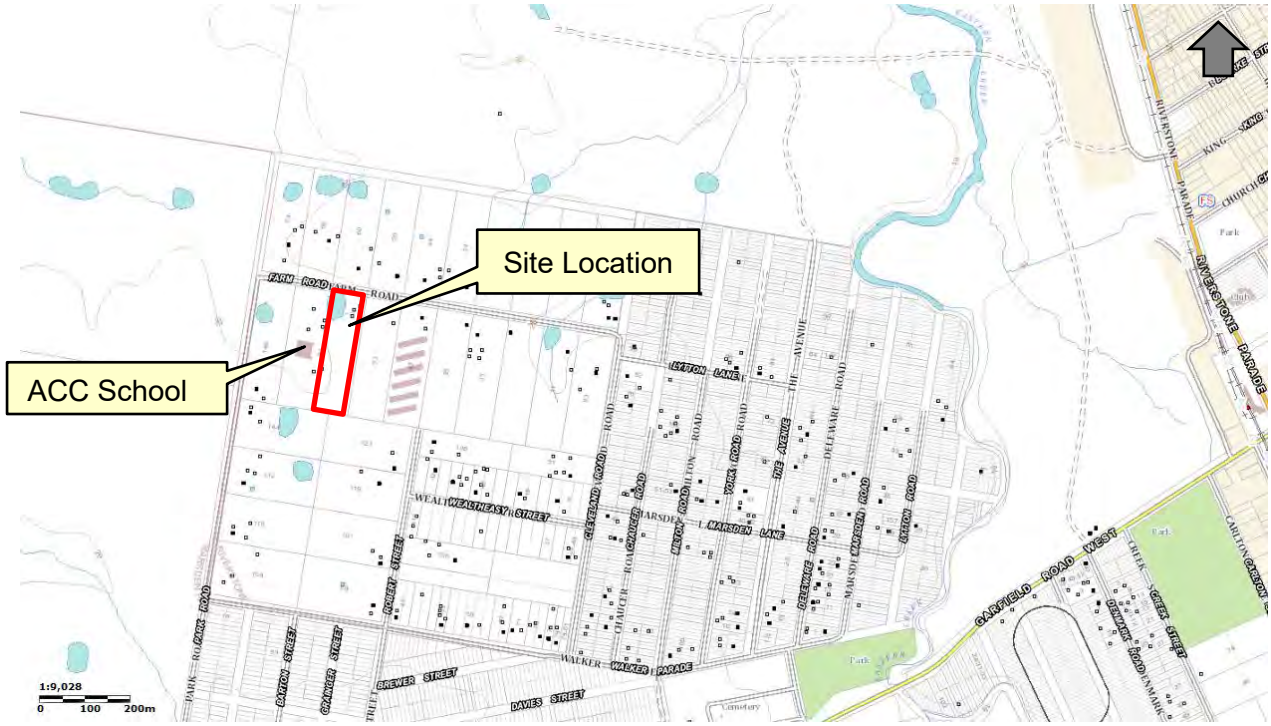
2.1 SITE IDENTIFICATION

The Site is located on the south side of Farm Road, adjacent to the Australian Christian College as shown in **Figure 1**. The key features required to identify the Site are summarised in **Table 1**.

Table 1: Site Identification

SITE	DESCRIPTION
Street Address	61 Farm Road, Riverstone, NSW 2765
Lot / Deposited Plan	Lot 90 DP 1224210
Area (combined)	21,400 m^2 (2.14 hectares)
Current Zoning	RU4 Rural Small Holdings
Local Government Area	Blacktown City Council

Figure 1: Site Location Map



Source: www.maps.six.nsw.gov.au(cited 20/12/2019)

2.2 SITE LAYOUT

The following points outline the Site layout and activities identified at the time of this investigation. A Site layout plan is provided in

Figure 7: Conceptual Site Model (CSM)

with a photographic record of Site conditions tabled in **Appendix E**.

- At the time of this investigation ENRS observed the Site to be a large rural-residential block neighbouring the Australian Christian College;
- Three (3) shipping containers were present along the western Site boundary;
- Two (2) uninhabited residential structures and two (2) associated sheds were present in the north-east corner of the Site;
- One (1) drainage channel was present in the south-west of the Site;
- One (1) soil stockpile of vegetation and non-putrescible material was present in the centre of the Site;
- One (1) soil stockpile, totalling approximately 10 m^3 was present near the Sites western boundary;
- ENRS understand from the historic aerial imagery and prior Site observations during preparation of the Stage 1 PSI (ENRS;2015), that one (1) dam and one (1) hide tanning pit area were previously present on Site; and
- Site inspections during this Stage 2 DSI works noted that the dam and tanning pits were no longer visible and have been levelled and filled.

2.3 SURROUNDING ENVIRONMENT

The Site is situated within a Rural Small Holdings (RU4) zoned area. The following adjacent uses were identified during site inspections and review of aerial photography:

Table 2: Surrounding Land Use

North:	Further Rural Small Holdings (RU4) zoned land.
East:	Rural Small Holdings (RU4) onto E2 Environmental Conservation and B7 Business Park.
South:	Rural Small Holdings (RU4) onto Environmental Conservation.
West:	Rural Small Holdings (RU4) onto SP2 Infrastructure.

2.3.1 Sensitive Receptors

The nearest sensitive receptors include:

- Site users; and

- Neighbouring properties and associated dams.

2.4 TOPOGRAPHY & DRAINAGE

A review of the Site topography was conducted with reference to the current series topographic map sheets (Riverstone 9030-1S) supported by Site inspections. The subject Site is positioned between approximately 10-30 mAHD. The centre of the Site is situated on a localised high point with a gentle downgradient slope to both the north and south. In general, the regional gradient dips west towards tributaries of South Creek. Overall surface run-off from the Site is likely directed into tributaries of South Creek. Numerous farm dams are scattered across the area, however no significant drainage lines are present within the site boundary.

2.5 SOIL LANDSCAPE

Review of the regions soil classification was conducted with reference to the Penrith 1:100,000 soil landscape series sheet 9030. The soil landscape at the Site is mapped as Blacktown Group (bt) described as gently undulating rises on Wianamatta Group shales with local relief to 30m and slopes generally less than 5%. Soil are shallow to moderately deep (<100cm) hardsetting mottled texture contrast soils, red and brown podzolic soils, on crests grading to yellow podzolic soils on lower slopes and in drainage lines. Soils are characterised by low fertility and poor drainage. Site observations were consistent with the soil mapping.

2.6 GEOLOGY

A review of the geological setting was conducted with reference to the Sydney Area Coastal Quaternary 1:25000 geological series sheet. The mapped geology shows the Site is situated within an area of Oligocene to Miocene laterised sand and clay with ferricrete bands and minor silcrete.

Site observations in boreholes to the maximum depth of 3.0 mbGL were consistent with the mapped soil landscape and geology. Boreholes generally intersected shallow silty sands overlying relatively stiff, mottled clays. Fill was observed primarily in the former dam and pits near the centre and south of the Site. The reader is referred to the borehole logs provided in **Appendix C** for further details.

2.7 HYDROGEOLOGY

Based on the mapped geology and the Sites position in the landscape, the groundwater resources in the area are expected to be associated with the following aquifer system;

- *Shallow unconsolidated* systems, generally less than 20 metres in depth with low yields, high salinity, strongly controlled by rainfall recharge; and
- *Deep fractured rock* and dual porosity aquifers associated with the shales and underlying lower unit 'A' (Lee;2009) of the Hawkesbury Sandstone formation. Generally Standing Water Levels are deeper than 20 metres with low yields, high iron and variable salinity.

Shallow groundwater flow is inferred to mimic topography with a low hydraulic gradient to the southwest. However, the deeper regional gradient is likely north towards South Creek which flows

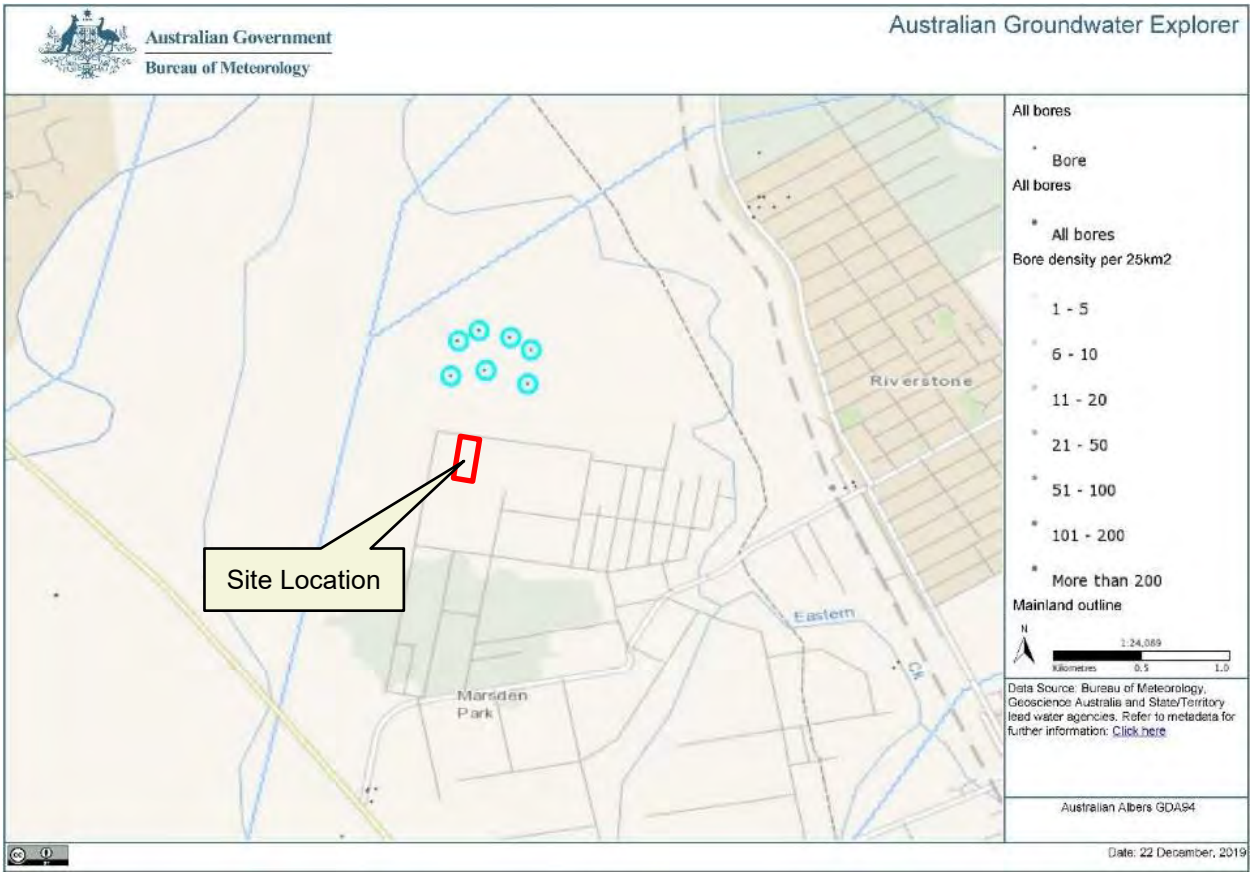
into the Hawkesbury River. The site and surrounding catchment is primarily unbuilt with high potential for recharge by rainfall infiltration.

2.7.1 Existing Bores

Review of the NSW Office of Water (NOW) registered bore database identified seven (7) groundwater bores (GW114718, GW114720, GW114721, GW114719, GW114724, GW114723 and GW114722) within a one (1) kilometre radius of the Site. All existing groundwater bores are located ~400 m north (up-gradient) of the Site.

Site investigations to the maximum depth of 3.0 mbgl (BH11) observed some soil moisture, however no groundwater was encountered.

Figure 2: Registered Bore Locations



Source: http://www.bom.gov.au/water/groundwater/explorer/map.shtml (cited 22/12/2019)

3.0 SITE HISTORY (SUMMARY)

3.1 PREVIOUS REPORTS

ENRS (2015) previously conducted a Stage 1 Preliminary Site Investigation (PSI) incorporating targeted soil sampling at the Site. The following points summarise the key findings relevant to the subject Site;

- The Site has been used for mixed residential and rural land use since circa 1977, whilst the surrounding areas has been cleared for rural use since circa 1955;
- Asbestos Containing Materials (ACM) were observed in wall sheeting and eaves of Site buildings and sheds;
- ACM was observed in shallow topsoil in proximity to building structures;
- Historical Aerial photographs and Site observations during the Stage 1 PSI (2015) indicate the concrete pits in the centre of the Site are characteristic of a fellmonger or knackery where preliminary tanning of hides may have taken place;
- Three (3) targeted soil samples were collected from test pits and analysed for Contaminants of Potential Concern (CoPC);
- Significant levels of Formaldehyde were detected in two (2) samples collected at the concrete pit area;
- Elevated levels of Aluminium were also detected in the vicinity of the concrete pits; and
- Reported levels of soil contamination in vicinity of the concrete pits indicates this portion of the Site comprises residual contamination from previous agricultural or industrial land use. No other elevated levels of chemicals in soil were identified at the Site.

Based on the Stage 1 PSI site history assessment, site inspection, and results of targeted soil testing, the following areas of potential environmental concern were identified:

- **AEC1** – Soil and fill underlying and surrounding the concrete slab with elongated pits in the central south of the site. Aerial photographs indicate the area was used to contain stock animals and the trenches are characteristic of a fellmonger or knackery where preliminary tanning of hides may have taken place. Soil testing reports elevated levels of formaldehyde above the assessment criteria;
- **AEC2** – Asbestos in soil in proximity to former buildings across the centre and north of the site. Low density contamination to be emu picked during redevelopment with potential for isolated hotspots to be identified during re-development; and
- **AEC3** – Asbestos in buildings to be removed by a licensed contractor under asbestos controls with clearance certification.

3.2 HISTORICAL AERIAL IMAGERY

Historical aerial photographs of the Site area were reviewed in the Stage 1 PSI (ENRS;2015) for the period 1955 to 2015 to identify potential contaminating land use and relevant changes in site conditions. Given the time elapsed since the Stage 1 PSI, a supplementary review of aerial imagery was conducted for the period 2015 to 2020. Copies of the imagery are provided in **Appendix D**. The key observations made from aerial reconnaissance are summarised in **Table 3** below.

Table 3: Summary of Historical Aerial Photography

Year	Description of site condition and surrounding land use
1955	largely vegetated with no evidence of development or agriculture. Adjoining properties also largely vegetated and undeveloped. One residential dwelling was present on the lot to the west of the Site. Farm Road appeared to be unsealed with no evidence of industry, landfill or altered landscape.
1970	Site remained largely vegetated. Small residential area cleared in the north of the Site with residential dwelling and shed present.
1977	Site was largely cleared of vegetation. One large dam was present in the north-west of the Site with a second, smaller dam present in south-east. The residential dwelling remained in the north-east of the Site. One large shed was present in the central southern portion of the Site. Numerous small sheds and brown grass throughout the centre of the Site indicating the presence livestock.
2011	Sheds in the southern portion of the Site had been demolished, concrete slab of larger shed remained. Vegetation thickened over the northern portion of the Site. Six (6) large agricultural sheds were present on the property to the East of the Site. Construction of the Australian Christian College was underway adjacent to the Site's western boundary.
2013	No significant change since the 2011 imagery. Construction of Australian Christian College appeared to be largely completed.
6/04/2016	No significant change since the 2013 imagery. Small stockpiles of rubbish/vegetation were present in the central east of the Site (06/04/2016).
5/05/2016	Dam in the south of the Site is not visible and has likely been filled. Material appeared to be spread across the southern portion of the Site where a farm dam used to be present (05/05/2016). Filling of the Dam occurred after the Stage 1 PSI was issued (6/7/2015).
16/08/2016	Concrete slabs and pit visible in centre of the Site. Dam in north of Site holding water.
12/10/2016	Concrete slab and pits have been removed and appear to have been filled. Former Dam in the north-west corner of the Site appears dry or has been filled, image is not clear.
13/11/2016	Large areas of filling or levelling apparent across the Site, evident from bare ground, including the former southern Dam, central Pits, and north western Dam.
8/12/2017	Three shipping containers positioned on the central western boundary.
31/10/2018	Additional sheds/structures south adjacent shipping containers on central western boundary. Fence installed running south from the containers to another shed on the south western boundary. No other evidence of cut or filling.
29/10/2019	Sheds on south western boundary have been extended to the south. Previous areas of filling in south of Site at former Dam and Pits is evident with patches of bare ground and grass in poor condition.

3.3 NSW EPA RECORDS

A contemporary search of the NSW EPA Contaminated Land register was conducted to assess the potential for contaminated land in the area. The search did not identify records within a 5 km radius of the Site. The search results are provided below.

Your search for: LGA: BLACKTOWN CITY COUNCIL

Matched 11 notices relating to 2 sites.

Search Again | Refine Search

Suburb	Address	Site Name	Notices related to this site
KINGS PARK	21 Tattersall ROAD	Former Dow Corning Factory	6 former
SEVEN HILLS	27 Powers ROAD	Former Australian Waste Oil Refineries Site	5 former

Page 1 of 1

20 January 2020

Source: https://apps.epa.nsw.gov.au/prclmapp/searchregister.aspx (cited 20/01/20)

3.4 LANDOWNER RECORDS

At the time of this assessment the landowner (ACC) was not aware of any additional records or reports pertaining to soil or contamination at the subject site. ENRS understand the ACC management were not aware of any filling works at the Site since the issue of the Stage PSI. Discussions with Site personnel at the time of borehole drilling and soil sampling by ENRS, indicate unknown contractors arrived on Site without notice and proceeded to fill the dam, however no records of these activities were available at the time of this assessment.

3.5 INTEGRITY ASSESSMENT

Where available this Site history assessment has utilised formal sources of information issued by local government (Council), SafeWork, NSW EPA, and NSW Land & Property Information providers. The records demonstrate a consistent timeline of land use activities and layout with no significant data gaps or inconsistencies to trigger further historical investigations. Hence, the sources and content of this assessment maybe considered to provide a reliable and satisfactory level of accuracy to support this Site history assessment and the identification of potential sources of environmental contamination.

3.6 SITE HISTORY SUMMARY

The following points summarise the site history based on the available information reviewed during this assessment:

- The site adjoins an education college and is currently vacant pending re-development for the expansion of the school;
- The Site has been used for mixed residential and rural land use since circa 1977, whilst the surrounding areas has been cleared for rural use since circa 1955;
- The age of buildings and sheds indicates potential for asbestos in buildings and in soil;
- The former concrete slabs and pits in the centre of the Site were characteristic of a fellmonger or knackery where preliminary tanning of hides may have taken place. Preliminary soil testing reported elevated levels of formaldehyde;

- WorkCover NSW has no records for licences to keep dangerous goods at the site;
- NSW OEH records report the subject Site is not declared to be in an 'investigation' or 'remediation' area, nor is it subject to an 'investigation' or 'remediation' order under the Contaminated Land Management Act, 1997.
- The Stage 1 PSI (July,2015) identified three (3) AECs and provided recommendations for remediation during the re-development works:
  - **AEC1** – Soil and fill with elevated formaldehyde associated with the concrete slabs and pits in the centre of the Site, impacted from former fellmonger or knackery use where preliminary tanning of hides may have taken place;
  - **AEC2** – Asbestos in soil in proximity to buildings across the centre and north of the Site; and
  - **AEC3** - Asbestos in buildings to be removed during demolition works.
- Site inspections during this Stage 2 DSI observed the AEC1 area and a former Dam in the South of the Site has been levelled and filled. No record of these activities was available for review at the time of this assessment and the ACC management were not aware of the works; and
- Supplementary review of online aerial imagery indicates areas of the Site were filled between April and October 2016:
  - The southern Dam was filled after the 6/4/2016 and prior to 5/5/2016;
  - The central pit was levelled and filled after the 16/8/2016 and prior to 12/10/2016.

4.0 SITE CHARACTERISATION (SUMMARY)

At the time of this investigation the Site comprised mixed residential rural land with grass paddocks across the southern portion of the Site and unoccupied residential dwellings and sheds in the north to Farm Road, and the Australian Christian College – Marsden Park. The proposal is to re-develop the Site for the expansion of the school.

The overall regional gradient slopes subtly to the west towards distant tributaries of South Creek. The Site is located within a RU4 Rural Small Holdings zoned area with adjacent land uses consisting of RU4 Rural Small Holdings, E2 Environmental Conservation, B7 Business Park and SP2 Infrastructure.

The Sites has a history of rural use since circa 1977. The Stage 1 PSI identified elevated levels of formaldehyde in soil associated with former concrete pits in the centre of the Site characteristic of a fellmonger or knackery where preliminary tanning of hides may have taken place.

The southern Dam and the former concrete pits appear to have been levelled and filled between April and October 2016. However, no records for filling activities were available for review at the time of this assessment and the land manager is not aware of the activities. Site observations and laboratory testing during this Stage 2 DSI indicate the areas have been filled with uncontrolled soil and fill with levels of contaminants above the Site Assessment Criteria. The Filled areas

represent the primary AECs in addition to the Asbestos in soil and buildings identified in the Stage 1 PSI. Borehole drilling to a maximum depth of 3 metres did not identify any groundwater hence the contamination is expected to be contained within the fill areas with low potential for groundwater impacts.

The following sections of this Site specific DSI documents the results of insitu soil testing to further characterise the ground conditions within the subject Site.

5.0 CONCEPTUAL SITE MODEL

The NSW EPA contaminated sites guidelines reference the *National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1)*. The ASC NEPM (2013) recommends a tiered approach to risk assessment of ground contamination and the development of an appropriate Conceptual Site Model (CSM). The CSM describes the source(s) of contamination, the pathway(s) by which contaminants may migrate through the various environmental media, and the populations (receptors, human or ecological) that may potentially be exposed. The following sub-sections outlines the key elements of the ***CSM*** subject of this assessment as depicted in **Figure 7**.

5.1 SOURCES / POTENTIAL CONTAMINANTS

Based on this review of the available Site history records and the results of Site observations the Contaminants of Potential Concern (CoPC) are outlined in **Table 4**.

Table 4: AECs and CoPC

Areas of Environmental Concern (AEC)	Historical Activities	CoPC
AEC01 – Former Fellmonger/knackery or Tannery - Contaminated soil underlying concrete slab and imported fill material within former tanning pits	hide tanning, chemical dip and treatment. Uncontrolled filling (circa 2016)	➢ Heavy Metals. ➢ Aliphatic hydrocarbons (TRH - Total Recoverable Hydrocarbons). ➢ Benzene Toluene Ethylbenzene, Xylenes (BTEX). ➢ Polycyclic Hydrocarbons (PAH). ➢ Formaldehyde ➢ Asbestos
AEC02 – Former & Current buildings. Presumed to previously contain asbestos materials.	Asbestos in soil in proximity to former buildings across the centre and north of the Site from demolition or historical weathering of building materials.	➢ Asbestos.

Areas of Environmental Concern (AEC)	Historical Activities	CoPC
AEC03 – Potential historical weathering of hazardous building materials.	Asbestos cement sheeting used in the construction of buildings which remain present in the north-east of the Site.	➢ Asbestos. ➢ Heavy Metal based paints (lead, zinc chromate (as Cr), arsenic, cadmium).
AEC04 – Uncontrolled Filling of former southern Dam	Uncontrolled filling of low-lying areas and dams within the Site	➢ Heavy Metals. ➢ Aliphatic hydrocarbons (TRH - Total Recoverable Hydrocarbons). ➢ Benzene Toluene Ethylbenzene, Xylenes (BTEX). ➢ Polycyclic Hydrocarbons (PAH). ➢ Organochlorine (OCPs) and Organophosphate Pesticides (OPPs) ➢ Asbestos

Source: based on Table J1, Appendix J, in AS4482.1 (2005).

5.1.1 Per- and PolyFluoroalkyl Substances (PFAS)

PFAS have been globally identified as chemicals of high concern to human health and the environment due to their persistence and bioaccumulation. PFAS in Australia, are mainly used as mist suppressants in the metal plating industry, hydraulic fluid in aircraft, surfactants in the photographic industry, and in some types of fire-fighting foams (Aqueous Film-Foaming Foams (AFFF). Appendix B of the PFAS National Environmental Management Plan (HEPA;2018) documents a range of activities and sources of PFAS. Based on the available Site history records reviewed during this assessment and the ground observations, PFAS is not identified as a significant CoPC, and not further assessment of PFAS is considered necessary.

5.2 PATHWAYS

Given the primary source of potential ground contamination is associated with generally shallow soils and uncontrolled fill above the water table, the primary contaminant migration and exposure pathways are likely to comprise:

- Dermal exposure to surface and near surface contaminants;
- Inhalation and or ingestion of dust or air bound contaminants primarily during high wind or disturbing activities;
- Leaching and migration of contaminants through the vadose zone; and
- Mixing of contaminated soils with non-contaminated material during filling and excavations works.

5.3 RECEPTORS

The receptors comprise:

- Human health – dermal / ingestion / inhalation - excavations, dust, fibres and soil gas / vapour) – Site personnel during Site development and any future groundworks;
- Shallow soil and stormwater – vertical and lateral migration of contaminants (if any) and connectivity with drainage waterways and nearby tributaries (if any).
- Groundwater – vertical and lateral migration of contaminants (if any) and connectivity with drainage waterways (if any). Groundwater is assessed to be at depths greater than 3 mbgl. Three (3) groundwater Monitoring Wells were constructed during the Site investigation to the maximum depth of 3 m. No groundwater was encountered at the time of the Site works.

6.0 BASIS FOR ASSESSMENT CRITERIA

ENRS have adopted the most appropriate criteria in accordance with current state and national guidelines. Where available, Australian and NSW EPA endorsed guidelines have been referenced in preference to international standards.

6.1 NATIONAL ENVIRONMENT PROTECTION MEASURE (NEPM)

The NSW EPA has endorsed the use of the Health Investigation Levels (HILs) documented in the *National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1)* 'Schedule B (1) Guideline on the Investigation Levels for Soil and Groundwater'. The NEPM provide a framework for risk-based assessment of soil and groundwater contamination. HILs are provided for four (4) land use categories:

Table 5: Summary of NEPM Land use Categories

NEPM	Description of Land Use Categories
HIL A	**Residential A with garden/accessible soil also includes children's day care centres, preschools and primary schools**.
HIL B	Residential B with minimal opportunities for soil access; includes buildings with fully and permanently paved yard space such as high-rise buildings and apartments.
HIL C	Recreational C includes public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and unpaved footpaths.
HIL D	Commercial/industrial D includes premises such as shops, offices, factories and industrial sites.

Given the Site proposal for a new School and educational Facility this assessment has adopted **HIL A** as the Site Assessment Criteria for Primary School use. A summary of the SAC criteria is provided in **Table 7** below.

In addition to the HILs the amended ASC NEPM (2013) provides the following Site Assessment Criteria (SAC):

- ***Management Limits*** for petroleum hydrocarbon compounds (Table 1 B (7));
- ***Health Screening Levels*** (**HSLs**) potential vapour intrusion (Table 1A [4]) should be selected based on the; land use; medium (sand, silt, clay); and depth.
- ***Groundwater Investigation Levels*** (**GILs**) should be applied based on the receiving environment and groundwater resources. GILs are provided in NEPM Table 1C for; Fresh Waters; Marine Waters; and Drinking Water; and
- ***Ecological Investigation Levels*** (***EILs***) and Ecological Screening Levels (ESLs) for common contaminants in the top 2 m of soil based on three (3) generic land use settings; areas of ecological significance; urban residential areas and public open space; and commercial and industrial land uses.

The ASC NEPM (2013) also provides HSLs for vapour intrusion in soil which should be considered based on the depth and composition of soil medium, a summary of the SAC for vapour intrusion is provided in **Table 6**.

Table 6: Health Screening Levels for Potential Vapour Intrusion

NEPM A mg/Kg			Benzene	Toluene	Ethyl benzene	m+p-Xylene	o-Xylene	Naphthalene	F1 C6-C10	F2 >C10-C16	F3 >C16-C34	F4 >C34-C40
NEPM HSL FOR VAPOUR INTRUSION SCREENING	SAND	0-1m	0.5	160	55	40	40	3	45	110	-	-
		1-2m	0.5	220	-	60	60	-	70	240	-	-
		2-4m	0.5	310	-	95	95	-	110	440	-	-
		>4m	0.5	540	-	170	170	-	200	-	-	-
	SILT	0-1m	0.6	390	-	95	95	4	40	230	-	-
		1-2m	0.7	-	-	210	210	-	65	-	-	-
		2-4m	1	-	-	-	-	-	100	-	-	-
		>4m	2	-	-	-	-	-	190	-	-	-
	CLAY	0-1m	0.7	480	-	110	110	5	50	280	-	-
		1-2m	1	-	-	310	310	-	90	-	-	-
		2-4m	2	-	-	-	-	-	150	-	-	-
		>4m	3	-	-	-	-	-	290	-	-	-

Source: adapted from NEPM (2013) Table 1A(3)

Table 7: Site Assessment Criteria (SAC)

		Units	NEPM 'A'	NEPM EIL/ESL (Urban / residential)	HIL A/B Management Limits	Maintenance Worker
Polycyclic Aromatic Hydrocarbons	Naphthalene	mg/Kg	-	170	-	29,000 [E]
	BaP TEQ	mg/Kg	3	3 is acceptable noting basis of NEPM ESL is rescinded	-	-
	Total PAHs	mg/Kg	300	300	-	-
Metals & Metalloids	Arsenic	mg/Kg	100	100	-	-
	Cadmium	mg/Kg	20	-	-	-
	Chromium	mg/Kg	100	-	-	-
	Copper	mg/Kg	6,000	800 at pH of 8	-	-
	Lead	mg/Kg	300	1100	-	-
	Mercury	mg/Kg	40	-	-	-
	Nickel	mg/Kg	400	-	-	-
	Zinc	mg/Kg	7,400	-	-	-
Phenolics	T.Phenols	mg/Kg	3000	-	-	-
BTEX	Benzene	mg/Kg	-	65	-	1,100 [E]
	Toluene	mg/Kg	-	105	-	120,000 [E]
	Ethyl benzene	mg/Kg	-	125	-	85,000 [E]
	m+p-Xylene	mg/Kg	-	45	-	130,000 [E]
	o-Xylene	mg/Kg	-	45	-	130,000 [E]
Total Recoverable Hydrocarbons	F1 TRH C6-C10	mg/Kg	-	180	800	82,000 [E]
	F2 TRH C10-C16	mg/Kg	-	120	1,000	62,000 [E]
	F3 TRH C16-C34	mg/Kg	-	-	3,500	85,000 [E]
	F4 TRH C34-C40	mg/Kg	-	-	10,000	120,000 [E]
Pesticides	DDT+DDE+DDD	mg/Kg	240	180	-	
	Aldrin and dieldrin	mg/Kg	6	-	-	
	Chlordane	mg/Kg	50	-	-	
	Endosulfan	mg/Kg	270	-	-	
	Endrin	mg/Kg	10	-	-	
	Heptachlor	mg/Kg	6	-	-	

[A] NEPM (2013) Health Investigation Levels for soil contaminants Table 1A (1).
[B] NEPM (2013) Soil EILs Table 1B (5).
[C] NEPM (2013) Management limits for TRH compounds in FINE soil Table 1 B(7).
[D] NEPM (2013) Ecological Screening Levels (ESL) for TRH, BTEX & BaP compounds in soil Table 1 B(6).
[E] CRC Care (2011) Technical Report No.10 (Table A4 Soil Health Screening Levels for Direct Contact)

6.1.1 Dutch Soil Remediation Circular

In the absence of state and national guidelines for Formaldehyde, the Dutch Soil Remediation Circular (2009) is referenced which provides a target value for soil contamination of 0.1 mg/Kg. In general formaldehyde should not be present in natural soils, positive detections above the Laboratory limit of reporting (LOR) shall be interpreted as indicators of contamination.

6.2 AESTHETIC CRITERIA

The ASC NEPM (2013) *Schedule B (1) Guideline on the Investigation Levels for Soil and Groundwater* advises that no numeric Aesthetic Guidelines exist; aesthetic limitations to land use is a relatively subjective determination, more-so for sensitive land use. However, the Site assessment process requires a balanced consideration of the quantity, type and distribution of foreign material or odours in relation to the specific land-use and its sensitivity. General assessment considerations include:

- That chemically discoloured soils or large quantities of various types of inert refuse, particularly if unsightly, may cause ongoing concern to site users;
- The depth of the materials, including uncontrolled fill and chemical residues, in relation to the final surface of the Site; and
- The need for, and practicality of, any long-term management of foreign material including but not limited to asbestos containing materials.

6.3 ASBESTOS IN SOIL CRITERIA

The ASC NEPM (2013) *Schedule B2 - Guideline on site characterisation* documents Health Screening Levels (HSLs) for asbestos levels in soil adopted from the Western Australian Guidelines for the Assessment Remediation and Management of Asbestos contaminated sites in Western Australia (WA Gov;2009). The Guidelines only apply to asbestos materials in soils, they do not apply to asbestos or asbestos containing materials present in buildings, structures, functional pipelines etc. The NEPM guidelines define three (3) primary forms of asbestos in soil:

- ***Asbestos Containing Material*** (***ACM)*** – non-friable matrix material generally observed as stable fragments in soil unless subjected to aggressive disturbance, prolonged saturation or fire;
- ***Fibrous Asbestos*** (***FA)*** – friable and fibrous material. Friable asbestos materials are those that can be crumbled, pulverised or reduced to powder by hand pressure when dry; and
- ***Asbestos Fines*** (***AF)*** – sub-7mm material including free fibre. Respirable asbestos fibres are generally greater than five micrometres long and no wider than 3 micrometres.

Table 8: Health Screening Levels for Asbestos in Soil (NEPM 2013)

Form of asbestos	Health Screening Level (HSL) (w/w%)			
	Residential A[1]	Residential B[2]	Recreational C[3]	Commercial/ Industrial D[4]
Bonded ACM	**0.01%**	0.04%	0.02%	0.05%
FA and AF (friable asbestos)	**0.001%**			
All forms of asbestos	**No visible asbestos for surface soil**			

1. Residential A with garden/accessible soil also includes children's day care centres, preschools and primary schools.
2. Residential B with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments.

3. Recreational C includes public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and unpaved footpaths.
4. Commercial/Industrial D includes premises such as shops, offices, factories and industrial sites.

6.4 WASTE CLASSIFICATION CRITERIA

Liquid and non-liquid waste designated for disposal shall be assessed in accordance with the NSW EPA Waste Classification Guidelines (EPA;2014). Guidelines are defined for the specific contaminant concentration (SCC) and the toxicity characteristics leaching procedure (TCLP). To establish soil waste classification using both SCC and TCLP, the test values for each chemical contaminant must be compared with the threshold values set in Table 2 of the guidelines. Threshold values are summarised below in **Table 9**.

Table 9: Waste Classification Criteria

Classification	SCC value	TCLP value
General solid waste	≤ SCC1	≤ TCLP1
Restricted solid waste	≤ SCC2	≤ TCLP2
Hazardous waste	> SCC2	> TCLP2
Special Waste (Asbestos Waste)	Positive Detection for Asbestos	

7.0 SAMPLING METHODOLOGY

7.1 SOIL SAMPLING

7.1.1 Soil Sample Locations

Soil sample locations were selected with consideration of the ASC NEPM (2013) Schedule B2 Section 6, guidelines on Sampling Design (NEPC;2013). Based on the Site area of **21,400 m^2** or ***~2.14 hectares*** the relevant sample density guidelines provided in Table E1 AS4482.1(2005) require a minimum of **thirty two (32)** sampling points for site characterisation based on detection of circular hotspots. ***A total of thirty two (32) sample locations*** were chosen for boreholes during the investigation program which is considered adequate to identify any potential hotspots or AECs.

Sampling locations were limited to accessible areas at the time of this investigation based on Site infrastructure, hardstand thicknesses and accessible areas. Boreholes were installed using a solid flight auger drill rig and advanced until the target depth was achieved or refusal encountered. Final soil samples locations were selected in the field with consideration of the following criteria and are illustrated in **Figure 7**:

- Target AECs;
- Investigate areas of potential Fill identified in Site history reviews;
- Down-gradient and up-gradient boundaries;
- Grid-based sample plan to provide a systematic assessment of Site area;
- Accessible ground and safe standing conditions for ground works; and

- Safe working distance from services and utilities.

7.1.2 Soil Sample Method

Samples were collected in general accordance with the principals described in AS4482.1- 2005: Guide to sampling and investigation of potentially contaminated soil (Part 1: Non-volatile and semi-volatile compounds) and AS4482.2-1999: Guide to sampling and investigation of potentially contaminated soil (Part 2: Volatile compounds).

Soil logging procedures followed a systematic and standardised format providing a classification of the soil group based on particle size and structure. Field observations were conducted to detect potential soil contamination, if any, and to distinguish between soil composition, condition and structure.

7.1.3 Soil Sampling Depths

Sample depths were selected with consideration of ground conditions observed during investigations. In general, samples were obtained near the surface, at 0.5 m and at 1 m intervals thereafter. Additional samples are collected at intervals defined by changes in ground conditions triggered by Site observations. Generally, the investigation depth was advanced until the target depth was achieved by intersection of natural ground with no visual or olfactory indicators of contamination, or refusal was encountered. This was considered adequate to assess ground conditions at the Site. A ***maximum investigation depth*** of ***3.3 metres*** was reached with refusal in natural ground in boreholes within the footprint of the former Dam in the south of the Site. The fill in the former Pits near the centre of the Site was observed to be 1.4 m deep, whilst the former Dam in the north of the Site was observed to comprise sand and gravel to the maximum investigation depth of 0.5 m.

7.1.4 Sample Preservation

Samples were collected in general accordance with industry standard QA/QC procedures. Discrete soil samples were collected with disposable sterile gloves and placed directly into laboratory supplied 250 mL jars and immediately stored on ice. Sample containers were individually labelled with sample identification clearly marked on the container and sealed lid.

Asbestos samples were double bagged in 200 micron sealed plastic and labelled for asbestos.

7.1.5 Selection of Samples for Analysis

Samples were selected for analysis based on the stratigraphic conditions to identify any apparent contamination and define soil conditions vertically and laterally. Not all samples collected were analysed. Selected samples were analysed for the Contaminants of Potential Concern (CoPC) identified in **Table 4**.

Where applicable, if elevated concentrations were reported in a sample, additional samples from adjoining or underlying locations were analysed to further determine the extent of contamination. All other samples not selected for analysis were placed on hold in a refrigerated environment for subsequent analysis, if required.

A summary of the sample analysis program is provided in **Table 14** with details of the investigation target or AECs assessed by each sample location and the analysis performed. The sample program was considered adequate to identify and characterise potential contamination at the Site.

7.2 GROUNDWATER SAMPLING

During the DSI, three (3) boreholes were converted to groundwater Monitoring Wells (MWs) to assess groundwater conditions at the Site. The following subsections provide a summary of the Well installations and groundwater conditions.

7.2.1 Well Locations

Monitoring Well locations are depicted in **Figure 3**, final locations were selected based on:

- The Site layout and boundaries;
- Accessible areas;
- Slope and inferred groundwater gradient;
- Downgradient of AECs; and
- Ground conditions encountered during drilling investigations.

7.2.2 Well Construction

Three (3) boreholes were converted into groundwater Monitoring Wells (MWs). A summary of the Well construction is provided in **Table 10**. Detailed construction logs are provided in **Appendix C**. The Wells were constructed with 50 mm Class 18 PVC, 2 mm gravel pack, and fitted with an end cap and torque locking surface plug in accordance with the Minimum Construction Requirements for Water Bores Australia (2012) 3rd Edition. The monitoring Wells were finished with a bentonite sanitary seal to prevent surface water ingress.

Wells are constructed with slotted screens below 0.8 mbgl to identify the presence of any dissolved contaminants and potential light non-aqueous phase liquid (LNAPL) floating on top of the water table.

Table 10: Summary of Monitoring Bore Construction

Well ID	Total Depth (mbgl)	Slotted Interval (mbTOC)	SWL (mbgl) (11/12/19)	Target AEC
MW1	2.8	0.8-2.8	Dry	Upgradient & adjacent AEC02
MW2	2.8	0.8-2.8	Dry	Adjacent AEC01
MW3	2.5	0.5-2.5	Dry	Downgradient & adjacent AEC04

7.2.3 Aquifer Conditions

Prior to demobilisation the monitoring Wells were inspected using a hydrocarbon-water interface probe. All three (3) monitoring wells were ***DRY*** at the time of investigations. Hence, groundwater sampling was not conducted, and no further assessment of groundwater was considered necessary. This is supported by drilling observations which intersect natural soils underlying Fill with no visual or olfactory indicators of contamination. Observations are supported by soil laboratory results in **Section 9.2** of this report and the CSM which indicates the shallow contaminated Fill is not in contact with groundwater at the Site.

8.0 DATA & QUALITY CONTROL PROCEDURES

8.1 DATA QUALITY OBJECTIVES

Data Quality Objectives (DQO) are required to define the quality and quantity of data needed to support management decisions. The process for establishing DQO's is documented by Australian Standard: AS 4482.1-2005 and referenced by the National Environment Protection (Assessment of Site Contamination) Measure (NEPC;2013). The DQO's for the investigation were to obtain representative data to allow a high-quality environmental assessment of:

- The location, nature, and degree of ground contamination at the Site (if any);
- The risks posed to human health and the environment, including potential future users of the Site; and
- The requirements for any further investigative works.

The assessment was conducted to a standard consistent with generally accepted and current professional consulting practice for such an investigation. The evaluation criteria adopted for the investigation are summarised in **Table 11**.

Table 11: Data Quality Objectives

DQO	Evaluation Criteria
Documentation completeness	Completion of field records, chain of custody documentation, laboratory test certificates from NATA-accredited laboratories.
Data comparability	Use of appropriate techniques for the sampling, storage and transportation of samples. Use of NATA accredited laboratory using NEPM endorsed procedures.
Data representativeness	Adequate sampling coverage of all areas of environmental concern at the Site, and selection of representative samples.
Precision and accuracy for sampling and analysis	Use properly trained and qualified field personnel and achieve laboratory QC criteria.

8.2 FIELD QUALITY ASSURANCE & QUALITY CONTROL

The Quality Assurance and Quality Control (QA/QC) protocols used during the fieldwork are provided in **Table 12**. Refer to **Appendix A** (Soil) for sample Chain of Custody (COC) documentation. A summary of Relative Percent Differences (RPD) between primary samples, blind field duplicates and interlaboratory duplicates is provided in **Table 15**, **Table 16** and **Table 17**.

Table 12: Field QA/QC

Protocol	Description
Sampling Team	Site personnel comprised only experienced and qualified environmental professionals trained in conducting site contamination investigations.
Sample Method	Samples obtained in laboratory prepared bottles with preservatives appropriate for the required analysis.
Sample Equipment	All sample equipment disposed or decontaminated between sample sites.
Field Screening	Visual and manual inspection of sample materials for potential contamination recorded on field sheets.
Chain of Custody Forms	All samples logged and transferred under appropriately completed Chain of Custody (COC) forms with Sample Receipts issued by the laboratory.
Blind Field Duplicate	At least one (1) blind field duplicate collected per 20 samples and submitted for analysis accompanied by COC forms.
Intra Laboratory duplicate	At least 1 per 20 samples
Trip blank/spike	At least 1 per batch submission

8.3 LABORATORY ANALYTICAL METHODS

Analysis of soil samples was conducted by Australian Laboratory Services (ALS). ALS is NATA accredited for the selected analysis. Laboratory QA/QC results are detailed in the Laboratory reports contained in **Appendix B**.

8.4 QA/QC DISCUSSION

A summary of the Data Quality performance is provided in **Table 13**. The laboratory was NATA accredited and the Practical Quantitation Limits (PQL) also referred to as Limits of Reporting (LOR) were within the acceptable levels for the investigation criteria. Laboratory certificates of analysis provided in **Appendix A** indicate that for the samples collected during the scope of works, sampling techniques, transport procedures and laboratory analysis were satisfactory.

Analysis of Relative Percent Differences (RPD) of blind duplicates samples were undertaken as part of this assessment. Results were generally reported within the acceptance criteria documented in Table 4 of AS4482.1-2005, the RPD for inorganics was set at <30% and for organics set at <50%. RPD Results are summarised in **Table 15**, **Table 16** and **Table 17**. Variations outside the accepted criteria may be attributed to the heterogenous natural of the soil and Fill composition encountered at the Site.

In summary, the QA/QC indicators either all complied with the required standards or showed variations that would have no significant effect on the quality of the data or the conclusions of this assessment. It is therefore concluded that, for the purposes of this study, the QA/QC results are valid, and the quality of the ***data is acceptable for use in this assessment***.

Table 13: Data Quality Objectives and Criteria

Objective	Performance	Status
Documentation completeness	➢ Completion of field records; ➢ chain of custody (COC) documentation; ➢ equipment calibration certificates; ➢ NATA Laboratory Sample Receipt Notification (SRN); and ➢ NATA laboratory Certificate of Analysis (COA).	✓
Data comparability	➢ Use of appropriate techniques for the sampling, storage and transportation of sample media; ➢ Use of NATA certified laboratory using NEPM endorsed procedures; and ➢ Comparison with previous site information, if any.	✓
Data representativeness	➢ Adequate sampling coverage of Site area, AEC's, down gradient and upgradient boundaries; ➢ Selection of representative samples from each sampling location; and ➢ Analysis for CoPC.	✓
Precision and accuracy for sampling and analysis	➢ Use only trained and qualified field personnel; ➢ Calibration certificates for field equipment; ➢ Appropriate sampling and field techniques; ➢ Decontamination procedures; ➢ Achieve laboratory QC criteria; and ➢ Achieve QAQC requirements for RPDs and Recovery	✓

9.0 INVESTIGATION RESULTS

The following sections present the results of the Stage 2 DSI program. ENRS consultants conducted borehole investigations, soil sampling and Site inspections on the ***9th, 10th and 11th of December 2019***.

9.1 STRATIGRAPHIC CONDITIONS

9.1.1 Soil

Borelogs are provided in **Appendix C**. Borehole investigations encountered the following conditions across the Site:

- Area with NO Fill intersected shallow silty sands (topsoil) overlying brown clays, becoming red/grey mottled clay below approximately 1.5 mbgl;
- Boreholes within the former Dam located in the south of the Site, intersected uncontrolled Fill to depths of approximately 2.5 mbgl. Logs report shallow silty sands with demolition rubble overlying moist, extremely plastic dark grey to black clays with a strong hydrocarbon odour. Underlying the base of Fill the logs report light yellow to white, stiff clays with no hydrocarbon odour below 2.5 mbgl with auger refusal in weathered sandstone at 3.0 mbgl.

9.1.2 Groundwater

The three (3) newly installed groundwater monitoring wells were inspected using an electronic water-hydrocarbon interface probe and clear disposable bailers. At the time of the investigation all three (3) groundwater Wells were recorded as Dry. Therefore, the identified AEC's were not considered to be in direct hydraulic connection with any groundwater at the Site. It is noted the drilling and investigations occurred after an extended period of low rainfall.

9.2 ANALYTICAL RESULTS (SOIL)

Laboratory Certificates of Analysis (COA) are contained in **Appendix A**. Upon receipt the results were tabulated and compared against the adopted SAC to identify any exceedance or AECs. A summary of the soil results is provided in **Table 14**.

9.2.1 Benzene Toluene Ethylbenzene Xylene (BTEX)

BTEX compounds are volatile compounds commonly found in petroleum products and are typically found together at contaminated sites.

Results for BTEX were reported at concentrations below the laboratory Limit of Reporting (LOR) and the adopted Site Assessment Criteria (SAC). The results are considered satisfactory.

9.2.2 Total Recoverable Hydrocarbons (TRH)

Laboratory testing was conducted for light fraction (C6-10) and heavy fraction (C10-40) Total Recoverable Hydrocarbons (TRH). Light fractions are generally associated with petrol whilst middle to heavy fractions are an indication of diesel or kerosene. No detections of light fraction (TRH C6 – C10) hydrocarbons above the LOR were reported.

Multiple detections of heavy fraction (TRH C10 – C40) hydrocarbons were reported across the Site, ranging from **180 mg/kg** (SP3, TRH C10 – C40) to **7,150 mg/kg** (BH7/1.3, TRH C10 – C40). One (1) exceedance of NEPM HSL 'A' Management Limit was reported for Heavy fraction (TRH C16 – C34) hydrocarbons in sample **BH7/1.3 m (4,410 mg/kg)**.

9.2.3 Polycyclic Aromatic Hydrocarbons (PAHs)

Polycyclic Aromatic Hydrocarbons (PAHs) are formed by the incomplete combustion of coal, oil, petrol, wood, or other organic materials. Major sources of PAHs include asphalt roads, road tar, coal, coal tar, and fires of all types.

Results for PAHs were reported at concentrations below either the laboratory LOR or the SAC for most samples across the Site. Two (2) exceedances of the SAC were reported for Benzo(a)pyrene (TEQ) in samples **BH12/0.2 (15.5 mg/kg)** and **BH14/0.2 (3.6 mg/kg)**.

9.2.4 Heavy Metals and Metalloids

Screening was conducted for eight (8) selected heavy metals and metalloids. Concentrations of arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc were all reported at concentrations below the SAC. Hence, the results are satisfactory.

9.2.5 Organochlorine Pesticides (OCPs)

OCPs are characteristically very stable. Since they were first introduced into Australia in the mid-1940s, OCPs have been used in many commercial products. Commonly used OCPs were DDT, lindane, chlordane, dieldrin, aldrin and heptachlor.

Results for OCPs were reported below the LOR and are considered satisfactory.

9.2.6 Organophosphorus Pesticides (OPPs)

OPPs are synthetic, more water soluble and have higher degradation rates than OCPs. OPPs may interfere with the nervous system and cause development or reproductive harm, as well as endocrine disruption.

Results for OPPS were reported below the LOR and are considered satisfactory.

9.2.7 Phenolic Compounds

Phenols do not tend to bio-accumulate and have a relatively short half-life of between 2 and 20 days. Phenols are present in a range of industrial and household products including disinfectants, fertilisers, explosives, paints and paint removers, drugs, pharmaceuticals, textiles and charcoal (coke). The largest single use of phenol is as an intermediate in the production of phenolic resins. Phenol is also naturally occurring in animal waste and decomposing organic matter.

All results for total phenols were reported below the relevant SAC. The results are considered satisfactory.

9.2.8 Formaldehyde

Positive detections for Formaldehyde were reported above the Laboratory LOR in the following samples:

- BH6/2.0 (4 mg/Kg);
- BH22/0.5 (3 mg/Kg); and
- BH24/0.5 (2 mg/Kg).

Boreholes BH22 and BH24 are both located within the footprint of the former Pits, which is consistent with the results of the Stage 1 PSI which identified levels of formaldehyde up to 10 mg/Kg. BH6 is located in the filled Dam to the south of the Pits which indicates the Fill in this area is also contaminated and needs to be remediated.

9.2.9 Asbestos in Soil

9.2.9.1 Visual Observations

During the Site inspection a walkover was conducted by a Licensed Asbestos Assessor (LAA) and Competent Person to identify for fragments of asbestos on the ground surface. Several fragments greater than 7 mm in bonded form were observed on the ground around buildings. A detailed assessment of the buildings was not conducted and was outside the scope of work, it is recommended the buildings be subject of a standalone hazards materials survey.

9.2.9.2 Laboratory Results

During drilling, the soil cuttings were raked and inspected for asbestos. No asbestos was observed within borehole cuttings or on the ground surface at borehole locations during the Site investigation. A total of sixteen (16) soil samples were collected for asbestos analysis and submitted for NATA accredited laboratory screening for asbestos in soil, with samples targeting areas subject to uncontrolled fill. Due to the high clay content, samples could not be sieved in the field, and bulk samples were submitted to the laboratory for screening. The following samples reported positive detections of asbestos:

- S2: 0.0002 %w/w friable asbestos (FA) – Filled Dam in southern portion of Site;
- S4: 0.0002 %w/w friable asbestos (FA) – Filled Dam in southern portion of Site;
- S10: 0.001 %w/w friable asbestos (FA) – Fillled Pits in the central portion of Site. Concentration is equivalent to the HSL criteria for FA 0.001%w/w;
- S12: 0.000 1%w/w friable asbestos (FA) – Fillled Pits in the central portion of Site;
- S13: 0.0001 %w/w non-friable asbestos (ACM) - Fillled Pits in the central portion of Site

It is noted these samples are all located within areas identified to comprise uncontrolled fill from the 2016 filling of the Dam and Pits. Laboratory certificates of analysis (COA) are present in **Appendix A**.

10.0 ENVIRONMENTAL SITE ASSESSMENT

10.1 AEC01 – FORMER KNACKERY/FELLMONGER PITS

AEC01 was previously identified in the Stage 1 PSI to contain contaminated soil and fill material underlying concrete slabs and former tanning pits within the centre of the Site. During the Stage 2 investigation it was identified that the concrete slab and former tanning pits had been levelled and filled circa 2016. The site walkover and borehole investigations also identified shallow Fill in the surrounding areas used to level the Site and fill low-lying areas. Analysis of the Fill in vicinity of the former Pits identified asbestos is soil (ASBINS) and minor detections of residual formaldehyde. Concentrations reported in AEC01 were as follows:

- Asbestos sample S10: Friable asbestos detected (0.001%w/w);
- Asbestos sample S12: Friable asbestos detected (0.0001%w/w);
- Asbestos sample S13: Asbestos in the form of ACM detected (0.0001%); and
- Positive detections of formaldehyde were reported in BH22/0.5 (3 mg/kg) and BH24/0.5 (4 mg/kg). Concentrations of formaldehyde are reported at decreased levels compared to those detected in the Stage 1 PSI. All other samples analysed from AEC01 reported concentrations of CoPC below the laboratory LOR.

Fill at AEC01 is therefore considered un-suitable to remain on Site due to the presence of asbestos and formaldehyde. Remediation by excavation and off site disposal is required in order to make the Site suitable for the proposed development.

10.2 AEC02 – ASBESTOS IN SOIL ADJACENT FORMER & CURRENT BUILDINGS

AEC02 comprises areas surrounding current and previously demolished structures in the centre and north of the Site. Based on the DSI the following points are provided in relation to AEC02:

- Fragments of bonded asbestos were observed on the surface in the Stage 1 PSI;
- Fragment of asbestos cement sheeting were observed in the centre of the Site during the Stage 2 inspections. The fragment/s were greater than 7 mm and the material is characterised as bonded or non-friable Asbestos in Soil (ASBINS); and
- Laboratory analysis of two (2) soil samples (S15 and S16) in the north of the Site did NOT detect any traces of asbestos.

The site observations and laboratory results indicate the topsoil in the centre and north of the Site has potential for ACM fragments in soil. It is recommended a Remediation Action Plan (RAP) be prepared for the Site with provision of an Unexpected Find Protocol (UFP) to manage potential asbestos in soil.

10.3 AEC03 – HISTORICAL WEATHERING OF BUILDING MATERIALS

AEC03 comprises buildings constructed with potential asbestos containing materials (ACM). ENRS note that buildings likely containing asbestos cement sheeting are still present within the north east of the Site. It is recommended the structures be subject of a standalone hazmat survey, to be managed during demolition or refurbishment activities.

10.4 AEC04 – UNCONTROLLED FILL DAM

AEC04 was identified during the completion of Stage 2 DSI Site works and comprises the former Dam in the south of the Site. During Site works it was identified that uncontrolled Fill material containing silty sands and building debris had been imported to the Site. ENRS understand, through review of aerial imagery, that material was imported to the Site during 2016 and used to fill a former Dam present in the south of the Site and level the surrounding ground surface. Borehole investigations, identified hydrocarbon impacted Fill in the former Dam. The following points are made in relation to AEC04:

- Multiple detections of elevated heavy fraction hydrocarbons within samples from AEC04;
- One (1) exceedance of the relevant NEPM 'A' Management Limits was reported TRH C16-C34 in sample BH7/1.3 (4,410 mg/kg);
- Two (2) exceedances of Site Assessment Criteria (SAC) for Benzo(a)pyrene TEQ were reported in samples BH12/02 (15.5 mg/kg) and BH14/0.2 (3.6 mg/kg);
- One (1) exceedance of the CT1 waste classification criteria for Nickel was reported in sample BH7/3.0 (58 mg/kg);
- Two (2) exceedances of the CT1 waste classification criteria were reported for benzo(a)pyrene in samples BH12/0.2 (11.1 mg/kg) and BH14/0.2 (2.4 mg/kg) respectively;

- Elevated concentrations of formaldehyde (4 mg/kg) and ammonia (7,750 mg/kg) were detected in sample BH6/2.0; and
- Elevated concentrations of copper and zinc were also reported throughout the AEC. However, concentrations were below the SAC;

Fill at AEC04 is therefore considered un-suitable to remain on Site. Remediation by excavation and off-site disposal is required in order to make the Site suitable for the proposed development.

11.0 CONCLUSIONS & RECOMMENDATIONS

11.1 CONCLUSIONS

Based on the available information reviewed during the scope of works the following conclusions are provided:

- The tasks completed during this investigation have met the project objectives set out in **Section 1.2**. Including, a review of the Stage 1 PSI and updated review of historical imagery, preparation of an updated Conceptual Site Model (CSM), borehole investigations sampling and testing for Contaminants of Potential Concern (CoPC) to characterise and delineate AECs, supported by a review of any data gaps and uncertainties;
- Site history records indicate the Site has a history of agricultural use since circa 1977 with potential use as a knackery or fellmonger as indicated by the former concrete pits in the centre of the site with elevated levels of formaldehyde in soil;
- During the site walkover and investigation works, ENRS noted the former farm Dam in the south of the Site and the former concrete Pits have been filled and levelled. Review of online historical imagery indicates the Dam and Pits were filled circa 2016, as evident from the historical aerial imagery, which is noted to be after the Stage 1 PSI was issued by ENRS in July 2015. ENRS understand the ACC Site management has no records of the filling activities and was not aware of the works. Fill with building debris was also evident across the surface of the Site as it appears uncontrolled Fill has been used to Fill low points and level the general area;
- Based on the proposed development of the Site is for a primary and secondary school building the appropriate Site Assessment Criteria (SAC) adopted by this assessment is the ASC NEPM HIL 'A' for Residential and Child Care Sites;
- ENRS environmental professionals conducted borehole investigations, groundwater Well installation and soil sampling over the ***9th, 10th and 11th of December 2019***. The investigation comprised Asbestos in Soil (ASBINS) sampling at sixteen (16) locations, and thirty-two (32) solid flight auger boreholes as required by AS4482.1(2005) for Site characterisation of 2.14 Hectares. Three (3) boreholes were constructed with groundwater Monitoring Wells (MWs) downgradient of AECs;
- Borehole investigations generally encountered Fill within and around the central and southern portions of the Site associated with the filled Pit and Dam areas. The deepest Fill was recorded in BH06 with hydrocarbon stained Fill to a maximum depth of 3 m within the

former Dam, underlain by weathered sedimentary rock with no evidence of hydrocarbon impact below 3.0 m;

- No groundwater was intersected at the Site during the investigations and all three (3) Monitoring Wells were recorded as dry. No further assessment of groundwater was considered necessary supported by soil samples from below the base of Fill which reported with no elevated levels of contamination;
- Representative soil samples were collected from Boreholes, stockpiles, shallow Fill and topsoil areas and submitted for analysis by a NATA accredited laboratory for Contaminants of Potential Concern (CoPC) including: eight (8) heavy metals; TRH; BTEX; PAHs; OCPs; OPPs; Phenols; formaldehyde; and asbestos. QA/QC results indicate that for the samples collected during the scope of works, sampling techniques, transport procedures and laboratory analysis were satisfactory and the quality of the data is acceptable for use in this assessment;
- Exceedances of the adopted 'HIL A' guidelines for hydrocarbons, PAHs, and formaldehyde were identified within the filled Dam and Pits. Visual and olfactory indicators for hydrocarbon were reported in Fill to 3 m in BH06 and BH07. Results for soil samples below the base of Fill reported levels of CoPC below the SAC which indicates the Fill has not migrated or leached beyond the footprint of the fill areas;
- Asbestos in soil was identified in multiple areas at the Site including;
  - AEC01: Friable asbestos in Fill within former treatment Pits;
  - AEC02: Surface soils adjacent former shed area/s. Fragments were observed during the PSI and DSI inspections. The ACM was greater than 7 mm characterised as bonded or non-friable. No traces of asbestos or fines were detected in soil samples from the area; and
  - AEC04: Fill within and adjacent the former dam area. Estimated quantities of asbestos impacted soil total to ~400m^3. Characterised as friable.

  The Fill in areas AEC01 and AEC04 contains asbestos fines is required to be managed as friable asbestos. The Fill is also impacted by formaldehyde, hydrocarbons and PAHs and is not suitable for the proposed landuse, and will require remediation by excavation and off-site disposal as waste to a suitably licenced facility. Where soil at AEC02 comprises non-friable ACM the material is suitable for remediation by manual removal of fragments or should be placed at depths greater than 0.5 m to minimise potential disturbance;
- The Areas of Environmental Concern (AECs) identified in this Stage 2 DSI include:
  - AEC01 – Former Pit area and uncontrolled Fill;
  - AEC02 – Asbestos in soil adjacent former and current structures;
  - AEC03 – Buildings and potential weathering of hazardous materials; and
  - AEC04 – Former southern Dams and uncontrolled Fill.

- Based on the results of this DSI, the Site can be made suitable for the proposed development in accordance with *NSW State Environmental Planning Policy No. 55 (SEPP55)* pending the remediation and validation of the identified AECs.

11.2 RECOMMENDATIONS

Based on the findings of this DSI, the following recommendation are provided:

- Remediation works must be carried out in accordance with a Stage 3 Remediation Action Plan (RAP) prepared by a suitably qualified environmental consultant and approved by the Regulator prior to commencement;
- Remediation of soil and Fill with asbestos fines must be managed as friable asbestos under supervision of a Class A licenced removal contractor. Soil and Fill with non-friable asbestos must be remediated under supervision of a minimum Class B licenced contractor. All asbestos works must be completed in accordance with the Code of Practise; How to safely remove asbestos (*SafeWork NSW*, 2019);
- Material disposed off-Site will need to be accompanied by a waste classification certificate prepared in accordance with the NSW EPA Waste Classification Guidelines (2014);
- A clearance certificate is required from an appropriately licenced asbestos assessor (LAA) for asbestos removal areas prior to re-occupation and entry without asbestos specific PPE;
- Upon completion of remediation works, the Site must be validated with results documented in a Stage 4 Validation report to confirm if the Site is suitable for the proposed landuse;
- The buildings present in AEC03 must be subject of a standalone Hazardous Materials survey, and may be managed separately to soil remediation works, during any demolition or refurbishment;
- Should any change in Site conditions or incident occur which causes a potential environmental impact, a suitable environmental professional should be engaged to further assess the Site and consider requirements for any additional assessment.

12.0 REFERENCES

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WorkCover NSW (2014). Guidelines for Managing Asbestos in or on Soil.

13.0 LIMITATIONS

This report and the associated services performed by ENRS are in accordance with the scope of services set out in the contract between ENRS and the Client. The scope of services was defined by the requests of the Client, by the time and budgetary constraints imposed by the Client, and by the availability of access to Site.

ENRS derived the data in this report primarily from visual inspections, and, limited sample collection and analysis made on the dates indicated. In preparing this report, ENRS has relied upon, and presumed accurate, certain information provided by government authorities, the Client and others identified herein. The report has been prepared on the basis that while ENRS believes all the information in it is deemed reliable and accurate at the time of preparing the report, it does not warrant its accuracy or completeness and to the full extent allowed by law excludes liability in contract, tort or otherwise, for any loss or damage sustained by the Client arising from or in connection with the supply or use of the whole or any part of the information in the report through any cause whatsoever.

Limitations also apply to analytical methods used in the identification of substances (or parameters). These limitations may be due to non-homogenous material being sampled (i.e. the sample to be analysed may not be representative), low concentrations, the presence of 'masking' agents and the restrictions of the approved analytical technique. As such, non-statistically significant sampling results can only be interpreted as 'indicative' and not used for quantitative assessments.

The data, findings, observations, conclusions and recommendations in the report are based solely upon the state of Site at the time of the investigation. The passage of time, manifestation of latent conditions or impacts of future events (e.g. changes in legislation, scientific knowledge, land uses, etc) may render the report inaccurate. In those circumstances, ENRS shall not be liable for any loss or damage that may be occasioned directly or indirectly through the use of, or reliance on, the contents of the report.

This report has been prepared on behalf of and for the exclusive use of the Client, and is subject to and issued in connection with the provisions of the agreement between ENRS and the Client. ENRS accepts no liability or responsibility whatsoever and expressly disclaims any responsibility for or in respect of any use of or reliance upon this report by any third party or parties.

This report is to be independently reviewed by NSW Site Auditor Brad May of *Epic Environmental* prior to issuing to the local authority.

It is the responsibility of the Client to accept if the Client so chooses any recommendations contained within and implement them in an appropriate, suitable and timely manner.

TABLES

ENRS
ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

Table 1: Total Concentration Results - Soil
Site: 61 Farm Road, Riverstone

Analyte			Organochlorine Pesticides (OCP)					Total PCB's	Organophosphate Pesticides (OPP)	Total Phenols	BTEX					Total Recoverable Hydrocarbons							Polycyclic Aromatic Hydrocarbons (PAHs)				Metals / Metalloids								Ammonia	Formaldahyde	< ASC NEPM Suitability for Re-Use On Site	Soil / Waste Classification
			Aldrin	Dieldrin	Chlordane	DDT, DDD & DDE	Heptachlor				Benzene	Toluene	Ethyl benzene	m+p-Xylene	o-Xylene	TRH C6-C9	TRH C10-C36	F1 TRH C6-C10	F2 TRH C10-C16	F3 TRH C16-C34	F4 TRH C34-C40	Total TRH C10-C40	Naphthalene	Benzo(a)pyrene	Benzo(a)pyrene TEQ	Total Positive PAHs	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc				
Site Assessment Criteria - NEPM (2013) Soil Investigation Levels (mg/Kg)																																					
EIL/ESL (Areas of ecological significance)		Coarse	-	-	-	3	-	-	-	-	10	10	1.5	10	10	-	-	125	25	-	-	-	10	3	-	-	40	-	-	270 (pH8)	470	-	-	-	-	-	
		Fine	-	-	-	3	-	-	-	-	10	65	40	1.6	1.6	-	-	125	25	-	-	-	10	3	-	-	40	-	-	270 (pH8)	470	-	-	-	-	-	
HIL'A' (Resi.,Prim. Sch. & Accessible Soil)			6	6	50	240	6	1	-	3000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**3**	300	100	20	100	6000	300	40	400	7400	-	0.1**	
HSL 'A' & 'B'	SAND	0-1m	-	-	-	-	-	-	-	-	0.5	160	55	40	40	-	-	45	110	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	
		1-2m	-	-	-	-	-	-	-	-	0.5	220	NL	60	60	-	-	70	240	-	-	-	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	
		2-4m	-	-	-	-	-	-	-	-	0.5	310	NL	95	95	-	-	110	440	-	-	-	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	
		>4m	-	-	-	-	-	-	-	-	0.5	540	NL	170	170	-	-	200	NL	-	-	-	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	
	SILT	0-1m	-	-	-	-	-	-	-	-	0.6	390	95	95	NL	-	-	40	230	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	
		1-2m	-	-	-	-	-	-	-	-	0.7	NL	210	210	NL	-	-	65	NL	-	-	-	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	
		2-4m	-	-	-	-	-	-	-	-	1	NL	NL	NL	NL	-	-	100	NL	-	-	-	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	
		>4m	-	-	-	-	-	-	-	-	2	NL	NL	NL	NL	-	-	190	NL	-	-	-	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	
	CLAY	0-1m	-	-	-	-	-	-	-	-	0.7	480	NL	110	110	-	-	50	280	-	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	
		1-2m	-	-	-	-	-	-	-	-	1	NL	NL	310	310	-	-	90	NL	-	-	-	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	
		2-4m	-	-	-	-	-	-	-	-	2	NL	NL	NL	NL	-	-	150	NL	-	-	-	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	
		>4m	-	-	-	-	-	-	-	-	3	NL	NL	NL	NL	-	-	290	NL	-	-	-	NL	-	-	-	-	-	-	-	-	-	-	-	-	-	
Management Limits (Resi., parkland & public space)		Coarse	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	700	1000	2500	10000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
		Fine	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**800**	**1000**	**3500**	**10000**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
EIL/ESL (Urban residential & public space)		Coarse	-	-	-	180	-	-	-	-	50	85	70	105	105	-	-	180	120	300	2800	-	170	3	-	-	100	-	-	800(pH8)	1100	-	-	-	-	-	
		Fine	-	-	-	**180**	-	-	-	-	**65**	**105**	**125**	**45**	**45**	-	-	**180**	**120**	**1300**	**5600**	-	**170**	3	-	-	**100**	-	-	**800(pH8)**	**1100**	-	-	-	-	-	
NSW EPA - Waste Classification Guidelines (2014)																																					
General Solid Waste (GSW)		CT1 mg/Kg	-	-	-	-	-	-	-	288	10	288	600	1000	1000	-	-	-	-	-	-	-	-	0.8	-	200	100	20	100	-	100	4	40	-	-	-	
		TCLP1 mg/L	-	-	-	-	-	-	-	14.4	0.5	14.4	30	50	50	-	-	-	-	-	-	-	-	0.04	-	-	5	1	5	-	5	0.2	2	-	-	-	
		SCC1 mg/kg	<50	<50	<50	<50	<50	<50	<50	518	18	518	1080	1800	1800	650	10000	-	-	-	-	-	-	10	-	200	500	100	1900	-	1500	50	1050	-	-	-	
Restricted Solid Waste (RSW)		CT2 mg/Kg	-	-	-	-	-	-	-	1152	40	1152	-	4000	4000	-	-	-	-	-	-	-	-	3.2	-	800	400	80	400	-	400	16	160	-	-	-	
		TCLP2 mg/L	-	-	-	-	-	-	-	57.6	2	57.6	120	200	200	-	-	-	-	-	-	-	-	0.16	-	-	20	4	20	-	20	0.8	8	-				
		SCC2 mg/Kg	<50	<50	<50	<50	<50	<50	<50	2073	72	2073	4320	7200	7200	2600	40000	-	-	-	-	-	-	23	-	800	2000	400	7600	-	6000	200	4200	-	-	-	
Total Concentrations - PQL			0.05	0.05	0.05	0.05	0.05	0.1	0.05	0.5	0.2	0.5	0.5	0.5	0.5	10	50	10	50	100	100	50	0.05	0.05	0.05	0.05	5	1	2.0	5	5	0.1	2	5	20	2	
Area	ID / Depth (m)	Date	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg			
Investigation Area	BH1/0.5	9/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**12**	<1	**24**	**42**	**24**	<0.1	**8**	**100**	<20	<4	<NEPM 'A'	GSW <CT1
	BH2/0.5	9/12/2019	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**10**	<1	**26**	**18**	**22**	<0.1	**6**	**30**	-	-	<NEPM 'A'	GSW <CT1
	BH3/0.8	9/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**14**	<1	**20**	**15**	**22**	<0.1	**3**	**11**	-	-	<NEPM 'A'	GSW <CT1
	BH4/0.3	9/12/2019	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**10**	<1	**27**	**10**	**23**	<0.1	**6**	**14**	-	-	<NEPM 'A'	GSW <CT1
	BH5/0.5	9/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**6**	<1	**13**	**12**	**10**	<0.1	**2**	**9**	-	-	<NEPM 'A'	GSW <CT1
	BH6/2.0	9/12/2019	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.8	<0.2	<0.5	<0.5	<0.5	<0.5	<10	**1320**	<10	<50	**950**	**560**	**1510**	<0.8	<0.8	1.9	<0.5	**5**	<1	**10**	**840**	**32**	<0.1	**10**	**1240**	**7750**	**4**	**>NEPM 'A'**	**GSW <CT1**
	BH7/1.0	9/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**9**	<1	**19**	**20**	**20**	<0.1	**11**	**40**	-	-	<NEPM 'A'	GSW <CT1
	BH7/1.3	9/12/2019	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	**2.2**	<0.2	<0.5	<0.5	<0.5	<0.5	<10	**6600**	<10	<50	**4410**	**2740**	**7150**	<0.8	<0.8	1.9	<0.5	**16**	**1**	**10**	**259**	**20**	<0.1	**8**	**1420**	-	-	<NEPM 'A'	GSW <CT1
	BH7/1.5	9/12/2019	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	**1850**	<10	<50	**1260**	**740**	**2000**	<0.5	<0.5	1.2	<0.5	**8**	<1	**12**	**533**	**30**	<0.1	**10**	**959**	-	-	**>EIL/ESL**	**GSW <CT1**
	BH7/3.0	9/12/2019	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	**440**	<10	<50	**320**	**160**	**480**	<0.5	<0.5	1.2	<0.5	**12**	<1	**8**	**119**	**22**	<0.1	**58**	**268**	-	-	<NEPM 'A'	**GSW <SCC1**
	BH8/0.5	10/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**7**	<1	**8**	**13**	**8**	<0.1	**4**	**16**	-	-	<NEPM 'A'	GSW <CT1
	BH9/1.0	10/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**13**	<1	**45**	**24**	**24**	<0.1	**6**	**26**	-	-	<NEPM 'A'	GSW <CT1
	BH10/1.0	10/12/2019	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**7**	<1	**4**	**14**	**7**	<0.1	<2	**8**	-	-	<NEPM 'A'	GSW <CT1
	BH10/2.8	10/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**6**	<1	**7**	**11**	**14**	<0.1	**12**	**40**	<20	<8	<NEPM 'A'	GSW <CT1
	BH11/0.5	10/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**8**	<1	**18**	**20**	**27**	<0.1	**11**	**50**	-	-	<NEPM 'A'	GSW <CT1
	BH12/0.2	10/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	**1390**	<10	<50	**1100**	**760**	**1860**	<0.5	**11.1**	**15.5**	**119**	**6**	<1	**12**	**20**	**35**	<0.1	**9**	**47**	-	-	**>NEPM 'A'**	**RSW <SCC2**
	BH13/0.2	10/12/2019	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	**0.5**	1.2	**2.3**	**8**	<1	**21**	**29**	**37**	<0.1	**13**	**80**	-	-	<NEPM 'A'	GSW <CT1
	BH14/0.2	10/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	**350**	<10	<50	**260**	**260**	**520**	<0.5	**2.4**	**3.6**	**20.2**	**7**	<1	**16**	**36**	**55**	**0.2**	**22**	**68**	-	-	**>NEPM 'A'**	**GSW <SCC1**
	BH15/0.5	10/12/2019	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**10**	<1	**33**	**9**	**23**	<0.1	**5**	**14**	-	-	<NEPM 'A'	GSW <CT1
	BH16/1.0	10/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**11**	<1	**22**	**12**	**18**	<0.1	<2	<5	-	-	<NEPM 'A'	GSW <CT1
	BH17/0.5	10/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**9**	<1	**20**	**16**	**13**	<0.1	**4**	**12**	<20	<2	<NEPM 'A'	GSW <CT1
	BH18/1.0	10/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**6**	<1	**3**	**6**	<5	<0.1	<2	<5	-	-	<NEPM 'A'	GSW <CT1
	BH19/1.0	10/12/2019	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**9**	<1	**20**	**9**	**34**	<0.1	**5**	**22**	<20	<2	<NEPM 'A'	GSW <CT1
	BH19/2.0	10/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**7**	<1	**9**	**12**	**12**	<0.1	<2	**11**	<20	<4	<NEPM 'A'	GSW <CT1
	BH20/0.5	10/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**6**	<1	**37**	**19**	**21**	<0.1	**3**	**11**	-	-	<NEPM 'A'	GSW <CT1
	BH21/0.5	10/12/2019	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**13**	<1	**40**	**8**	**23**	<0.1	**3**	**14**	<20	<2	<NEPM 'A'	GSW <CT1
	BH21/1.0	10/12/2019	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**11**	<1	**34**	**16**	**35**	<0.1	**5**	**18**	-	-	<NEPM 'A'	GSW <CT1
	BH21/2.5	10/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	<5	<1	**3**	**6**	**7**	<0.1	<2	**5**	<20	<4	<NEPM 'A'	GSW <CT1
	BH22/0.5	11/12/2019	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**10**	<1	**25**	**28**	**22**	<0.1	**6**	**188**	<20	**3**	**>NEPM 'A'**	**GSW <CT1**
	BH22/1.5	11/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	<5	<1	**3**	**10**	**6**	<0.1	<2	**49**	<20	<4	<NEPM 'A'	GSW <CT1
	BH23/0.5	11/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**6**	<1	**8**	**13**	**9**	<0.1	<2	**10**	<20	<8	<NEPM 'A'	GSW <CT1
	BH23/1.5	11/12/2019	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**6**	<1	**3**	**10**	**10**	<0.1	<2	**6**	<20	<8	<NEPM 'A'	GSW <CT1
	BH24/0.5	11/12/2019	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**11**	<1	**20**	**14**	**17**	<0.1	**2**	**22**	<20	**2**	**>NEPM 'A'**	**GSW <CT1**
	BH24/1.5	11/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	<5	<1	**2**	**7**	**8**	<0.1	<2	**6**	**60**	<8	**>NEPM 'A'**	**GSW <CT1**
	BH25/2.5	11/12/2019	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	<5	<1	**3**	**9**	**6**	<0.1	<2	**8**	-	-	<NEPM 'A'	GSW <CT1
	BH26/0.5	11/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**8**	<1	**13**	**12**	**10**	<0.1	<2	**6**	<20	<8	<NEPM 'A'	GSW <CT1
	BH27/0.5	11/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**8**	<1	**12**	**17**	**10**	<0.1	<2	**11**	-	-	<NEPM 'A'	GSW <CT1
	BH28/0.5	11/12/2019	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**10**	<1	**10**	**18**	**9**	<0.1	**4**	**15**	-	-	<NEPM 'A'	GSW <CT1
	BH29/0.3	11/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**14**	<1	**42**	**9**	**32**	<0.1	**6**	**24**	-	-	<NEPM 'A'	GSW <CT1
	BH30/0.5	11/12/2019	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.5	<0.2	<0.5	<0.5	<0.5	<0.5	<10	**280**	<10	<50	**240**	<100	**240**	<0.5	<0.5	1.2	<0.5	**9**	<1	**15**	**23**	**32**	<0.1	**14**	**87**	-	-	<NEPM 'A'	GSW <CT1
	BH31/0.5	11/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**13**	<1	**27**	**10**	**18**	<0.1	**4**	**14**	-	-	<NEPM 'A'	GSW <CT1
	BH32/0.3	11/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	**12**	<1	**28**	**15**	**24**	<0.1	**9**	**41**	-	-	<NEPM 'A'	GSW <CT1
Stockpile #1	**SP1/1**	11/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	<100	<100	<50	<0.5	<0.5	1.2	<0.5	<5	<1	**10**	**14**	**19**	<0.1	**6**	**67**	-	-	<NEPM 'A'	GSW <CT1
	SP1/2	11/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	<50	<10	<50	**150**	<100	**150**	<0.5	**0.6**	**1.3**	**5.8**	**6**	<1	**13**	**19**	**123**	<0.1	**7**	**167**	-	-	<NEPM 'A'	**GSW <CT2**
	SP1/3	11/12/2019	-	-	-	-	-	-	-	-	<0.2	<0.5	<0.5	<0.5	<0.5	<10	**120**	<10	<50	**180**	<100	**180**	<0.5	**1.4**	**2.3**	**15.8**	<5	<1	**11**	**24**	**108**	**0.1**	**6**	**231**	-	-	<NEPM 'A'	**GSW <CT2**
Leachate Results (TCLP)																								mg/L							mg/L			mg/L				
Leachate Results (TCLP)	**BH7/3.0**	9/12/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	**GSW <TCLP1**
	BH12/0.2	10/12/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-	-	**RSW <TCLP2**
	BH14/0.2	10/12/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.0005	-	-	-	-	-	-	-	-	-	-	-	-	**GSW <TCLP1**
	SP2	11/12/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	**GSW <TCLP1**
	SP3	11/12/2019	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	-	-	-	**GSW <TCLP1**
95% Upper Confidence Limit Calculations (mg/Kg)																																					
Number of samples			18	18	18	18	18	18	18	18	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	45	27	27	-	-
Maximum			0.03	0.03	0.03	0.03	0.03	0.05	0.03	2.20	0.10	0.25	0.25	0.25	0.25	5.0	6600	5.0	25	4410	2740	7150	0.40	11.10	15.50	119.00	16.0	1.0	45.0	840	123.00	0.20	58.00	1420.00	7750.0	4.0	-	-
Minimum			0.03	0.03	0.03	0.03	0.03	0.05	0.03	0.25	0.10	0.25	0.25	0.25	0.25	5.0	25	5.0	25	50	50	25	0.25	0.25	1.20	0.25	2.50	0.50	2.0	6.0	2.5	0.05	1.0	2.5	10.0	1.0	-	-
Standard deviation			0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.46	0.00	0.00	0.00	0.00	0.00	0.00	1035	0.00	0	691	426	1133	0.03	1.64	2.15	17.96	3.48	0.07	11.30	147.37	22.65	0.02	9.02	303.13	2925.4	1.3	-	-
Coefficient of Variation			0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.25	0.00	0.00	0.00	0.00	0.00	0.00	3.51	0.00	0.0	2.9	2.7	3.4	0.12	2.81	1.32	4.67	0.42	0.15	0.66	2.76	0.94	0.43	1.35	2.48	2.6	0.6	-	-
t statistic at a=0.05			1.74	1.74	1.74	1.74	1.74	1.74	1.74	1.68	1.68	1.68	1.68	1.68	1.68	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.68	1.7	1.7	-	-
Average			0.03	0.03	0.03	0.03	0.03	0.05	0.03	0.37	0.10	0.25	0.25	0.25	0.25	5	295	5	25	237	159	333	0.26	0.58	1.63	3.85	8.31	0.51	17.02	53.33	24.08	0.05	6.67	122.00	1115.7	2.1	-	-
95% UCL average			**0.025**	**0.025**	**0.025**	**0.025**	**0.025**	**0.05**	**0.03**	**0.55**	**0.10**	**0.25**	**0.25**	**0.25**	**0.25**	**5.0**	**554**	**5.0**	**25**	**410**	**266**	**617**	**0.26**	**1.0**	**2.17**	**8.35**	**9.2**	**0.5**	**20**	**90**	**30**	**0.1**	**8.9**	**198**	**2076**	**2.6**	-	-

Notes: Basis for NEPM (2013) ESL for B(a)P has been rescindered. Recommend application of HSL 'A' 3 mg/kg pending publication of updated ESL.
**Dutch Soil Remediation Circular (2009)

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

Table 15: Summary of Relative Percent Differences in Soil Samples

ANALYTE	*Laboratory PQL / LOR*	Primary Sample ID: BH11/0.5	Blind Field Duplicate Sample	RPD %
Arsenic	5	8	9	12%
Cadmium	1	<1	<1	0%
Chromium	2	18	17	6%
Copper	5	20	23	14%
Lead	5	27	51	62%
Mercury	0.1	<0.1	<0.1	0%
Nickel	2	11	11	0%
Zinc	5	50	57	0%
Naphthalene	0.5	<0.5	<0.5	0%
Benzo(a)pyrene	0.5	<0.5	<0.5	0%
Benzo(a)pyrene TEQ (zero)	0.5	1.2	1.2	0%
Sum of polycyclic aromatic hydrocarbons	0.5	<0.5	<0.5	0%
Benzene	0.2	<0.2	<0.2	0%
Toluene	0.5	<0.5	<0.5	0%
Ethyl benzene	0.5	<0.5	<0.5	0%
m+p-Xylene	0.5	<0.5	<0.5	0%
o-Xylene	0.5	<0.5	<0.5	0%
F1 TRH C6-C10	10	<10	<10	0%
F2 TRH C10-C16	50	<50	<50	0%
F3 TRH C16-C34	100	<100	<100	0%
F4 TRH C34-C40	100	<100	<100	0%
Total TRH C10-C40	50	<50	<50	0%

Acceptance criteria for Inorganics RPD<30%
Acceptance criteria for Organics RPD<50%

(AS4482.1-2005) RPD Calculation Method = $\frac{\text{D1-D2}}{\text{Mean Result}} \times 100$

Results below detection limit were assumed to be equal to the PQL/LOR for RPD calculations
Results above the acceptance criteria were assessed to be disregarded if results were <5 x PQL/LOR

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

Table 16: Summary of Relative Percent Differences in Soil Samples

ANALYTE	*Laboratory PQL / LOR*	Primary Sample ID: BH2/1.0m	Blind Field Duplicate Sample	RPD %	Intra Lab Triplicate	RPD %
Arsenic	5	13	13	0%	9	36%
Cadmium	1	<1	<1	0%	<0.4	0%
Chromium	2	40	43	7%	26	42%
Copper	5	8	8	0%	5	46%
Lead	5	23	23	0%	17	30%
Mercury	0.1	<0.1	<0.1	0%	<0.1	0%
Nickel	2	3	4	29%	3	0%
Zinc	5	14	11	0%	16	13%
Naphthalene	0.5	<0.5	<0.5	0%	<0.1	0%
Benzo(a)pyrene	0.5	<0.5	<0.5	0%	<0.05	0%
Benzo(a)pyrene TEQ (zero)	0.5	1.2	1.2	0%	<0.5	0%
Sum of polycyclic aromatic hydrocarbons	0.5	<0.5	<0.5	0%	<0.05	0%
Benzene	0.2	<0.2	<0.2	0%	<0.2	0%
Toluene	0.5	<0.5	<0.5	0%	<0.5	0%
Ethyl benzene	0.5	<0.5	<0.5	0%	<1	0%
m+p-Xylene	0.5	<0.5	<0.5	0%	<2	0%
o-Xylene	0.5	<0.5	<0.5	0%	<1	0%
F1 TRH C6-C10	10	<10	<10	0%	<25	0%
F2 TRH C10-C16	50	<50	<50	0%	<50	0%
F3 TRH C16-C34	100	<100	<100	0%	<100	0%
F4 TRH C34-C40	100	<100	<100	0%	<100	0%
Total TRH C10-C40	50	<50	<50	0%	<50	0%

Acceptance criteria for Inorganics RPD<30%
Acceptance criteria for Organics RPD<50%

(AS4482.1-2005) RPD Calculation Method = $\frac{\text{D1-D2}}{\text{Mean Result}} \times 100$

Results below detection limit were assumed to be equal to the PQL/LOR for RPD calculations
Results above the acceptance criteria were assessed to be disregarded if results were <5 x PQL/LOR

ENVIRONMENT & NATURAL RESOURCE SOLUTIONS

Table 17: Summary of Relative Percent Differences in Soil Samples

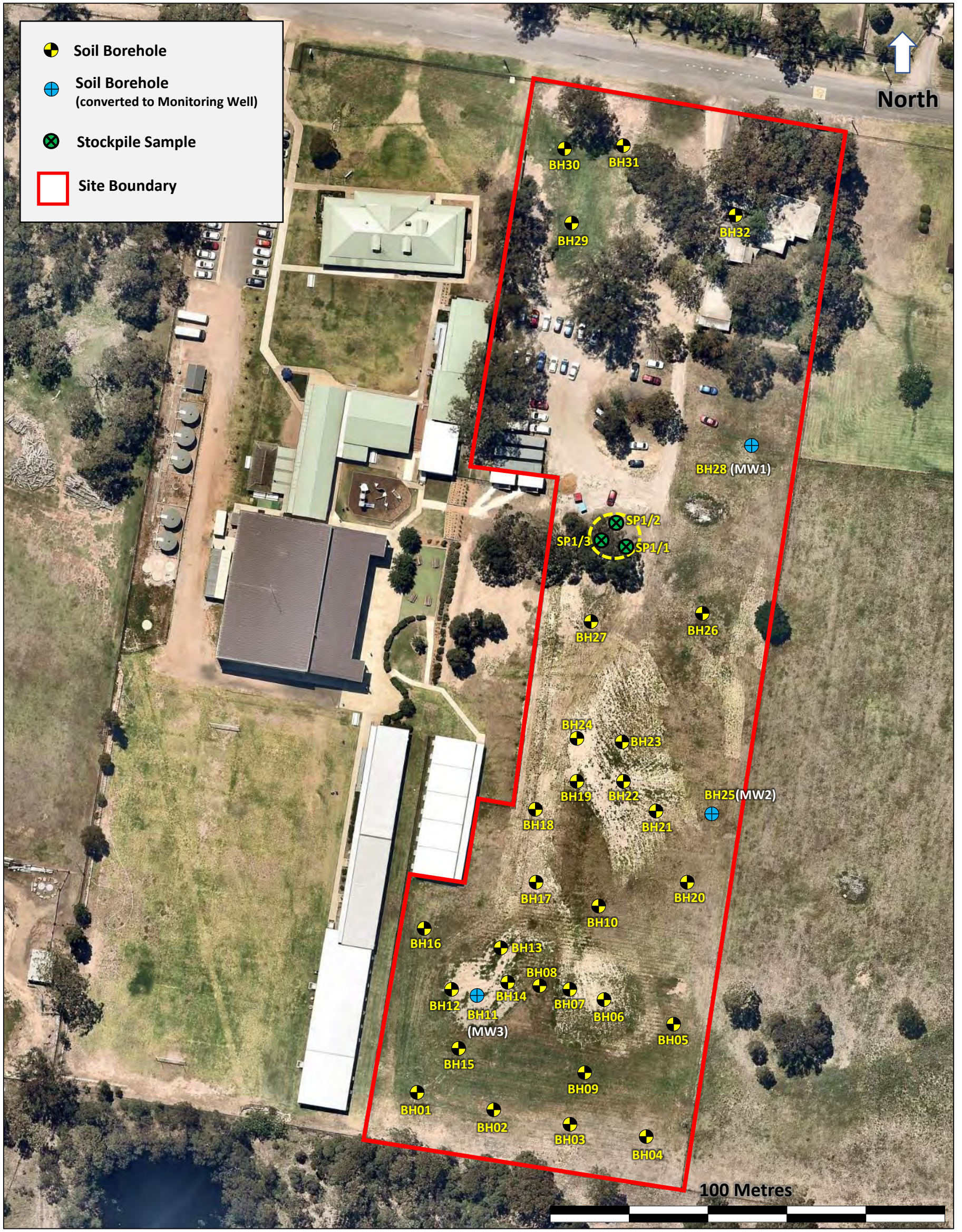
ANALYTE	*Laboratory PQL / LOR*	Primary Sample ID: BH2/1.0m	Blind Field Duplicate Sample	RPD %	Intra Lab Triplicate	RPD %
Arsenic	5	14	13	7%	9	43%
Cadmium	1	<1	<1	0%	<0.4	0%
Chromium	2	42	28	40%	21	67%
Copper	5	9	11	20%	7	25%
Lead	5	32	29	10%	21	42%
Mercury	0.1	<0.1	<0.1	0%	<0.1	0%
Nickel	2	6	5	18%	5	18%
Zinc	5	24	26	0%	22	9%
Naphthalene	0.5	<0.5	<0.5	0%	<0.1	0%
Benzo(a)pyrene	0.5	<0.5	<0.5	0%	<0.05	0%
Benzo(a)pyrene TEQ (zero)	0.5	1.2	1.2	0%	<0.5	0%
Sum of polycyclic aromatic hydrocarbons	0.5	<0.5	<0.5	0%	<0.05	0%
Benzene	0.2	<0.2	<0.2	0%	<0.2	0%
Toluene	0.5	<0.5	<0.5	0%	<0.5	0%
Ethyl benzene	0.5	<0.5	<0.5	0%	<1	0%
m+p-Xylene	0.5	<0.5	<0.5	0%	<2	0%
o-Xylene	0.5	<0.5	<0.5	0%	<1	0%
F1 TRH C6-C10	10	<10	<10	0%	<25	0%
F2 TRH C10-C16	50	<50	<50	0%	<50	0%
F3 TRH C16-C34	100	<100	<100	0%	<100	0%
F4 TRH C34-C40	100	<100	<100	0%	<100	0%
Total TRH C10-C40	50	<50	<50	0%	<50	0%

Acceptance criteria for Inorganics RPD<30%
Acceptance criteria for Organics RPD<50%

(AS4482.1-2005) RPD Calculation Method = $\frac{\text{D1-D2}}{\text{Mean Result}} \times 100$

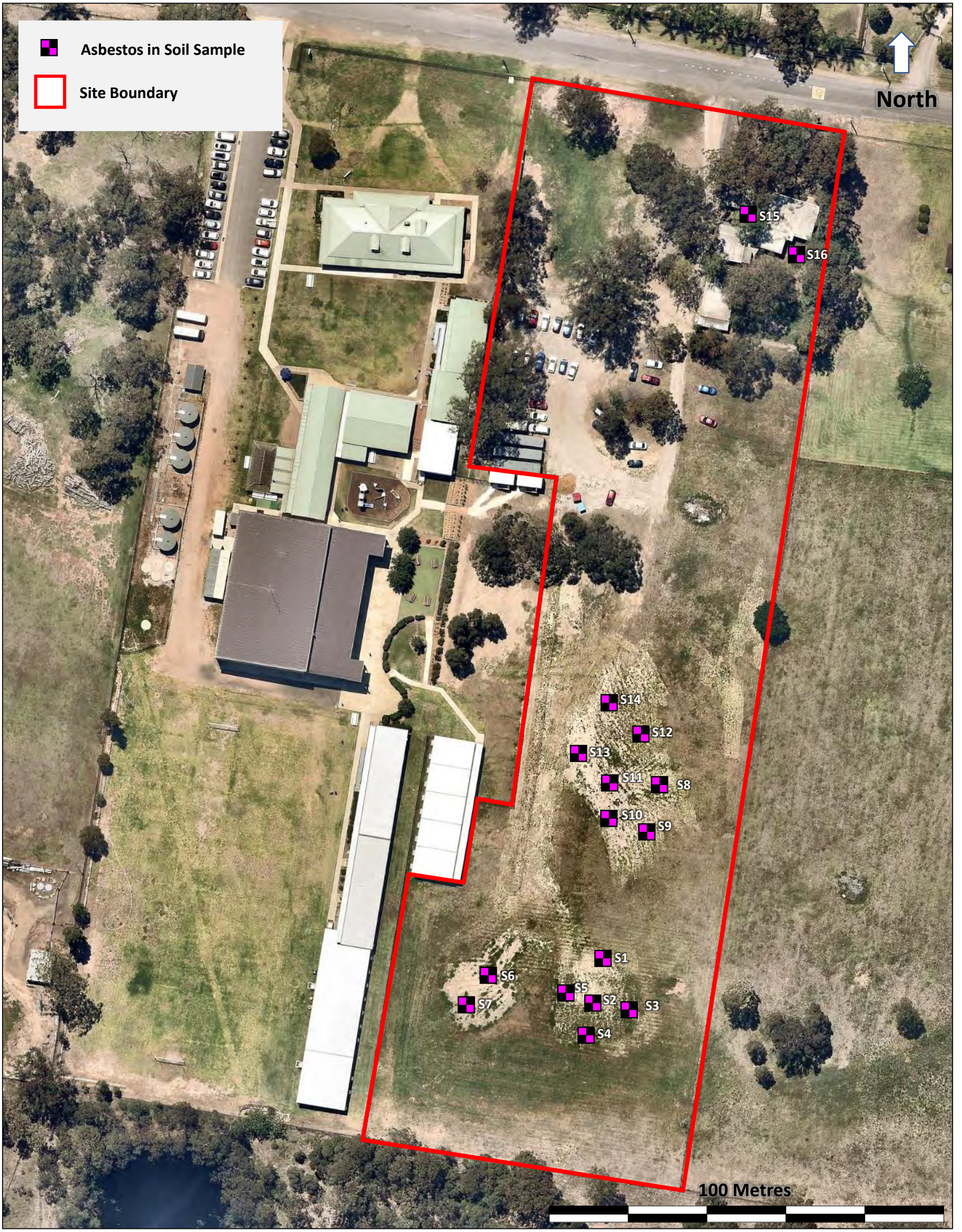
Results below detection limit were assumed to be equal to the PQL/LOR for RPD calculations
Results above the acceptance criteria were assessed to be disregarded if results were <5 x PQL/LOR

Figures



ENRS
Environment & Natural Resource Solutions
108 Jerry Bailey Road, Shoalhaven Heads, NSW, 2535
Tel: 02 4448 5490 Fax: 02 90374708
projects@enrs.com.au www.enrs.com.au

Client:	**ACC**	Drawn:	**CA**	Figure:	**3**
Project:	**ENRS0197**	Source:	**NearMaps**	Date:	**29/01/2020**
Location:	61 Farm Road, Riverstone, NSW	Scale:	**-**	Title:	**Sample Plan – Boreholes**
		Status:	**Rev 1**		



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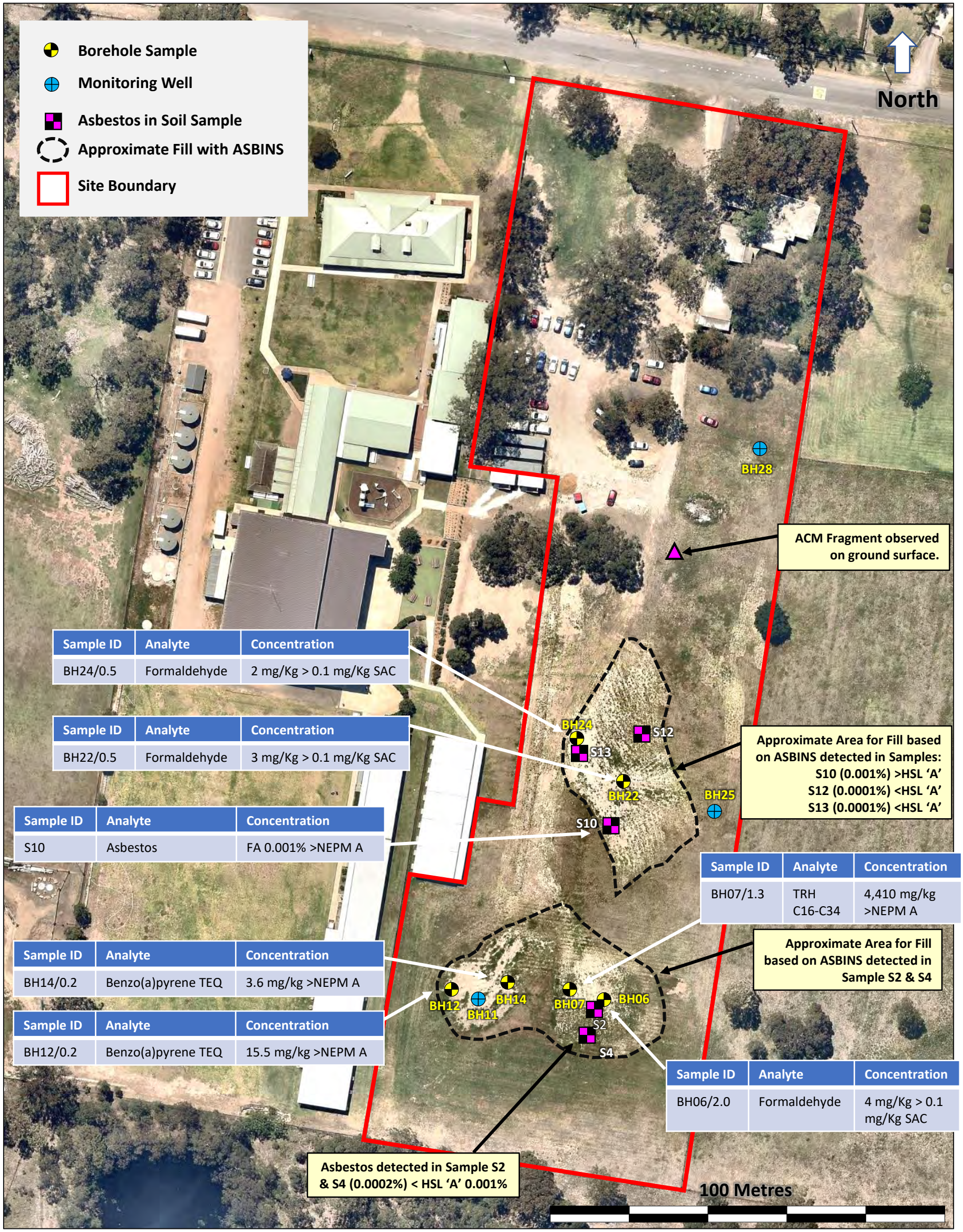
Client:	**ACC**	Drawn:	**CA**	Figure:	**4**
Project:	**ENRS0197**	Source:	**NearMaps**	Date:	**29/01/2020**
Location:	61 Farm Road, Riverstone, NSW	Scale:	**-**	Title:	**Sample Plan – Asbestos in Soil (ASBINS)**
		Status:	**Rev 1**		



Sample ID	Analyte	Concentration
BH24/0.5	Formaldehyde	2 mg/Kg > 0.1 mg/Kg SAC

Sample ID	Analyte	Concentration
BH22/0.5	Formaldehyde	3 mg/Kg > 0.1 mg/Kg SAC

Sample ID	Analyte	Concentration
S10	Asbestos	FA 0.001% >NEPM A

Sample ID	Analyte	Concentration
BH07/1.3	TRH C16-C34	4,410 mg/kg >NEPM A

Sample ID	Analyte	Concentration
BH14/0.2	Benzo(a)pyrene TEQ	3.6 mg/kg >NEPM A

Sample ID	Analyte	Concentration
BH12/0.2	Benzo(a)pyrene TEQ	15.5 mg/kg >NEPM A

Sample ID	Analyte	Concentration
BH06/2.0	Formaldehyde	4 mg/Kg > 0.1 mg/Kg SAC

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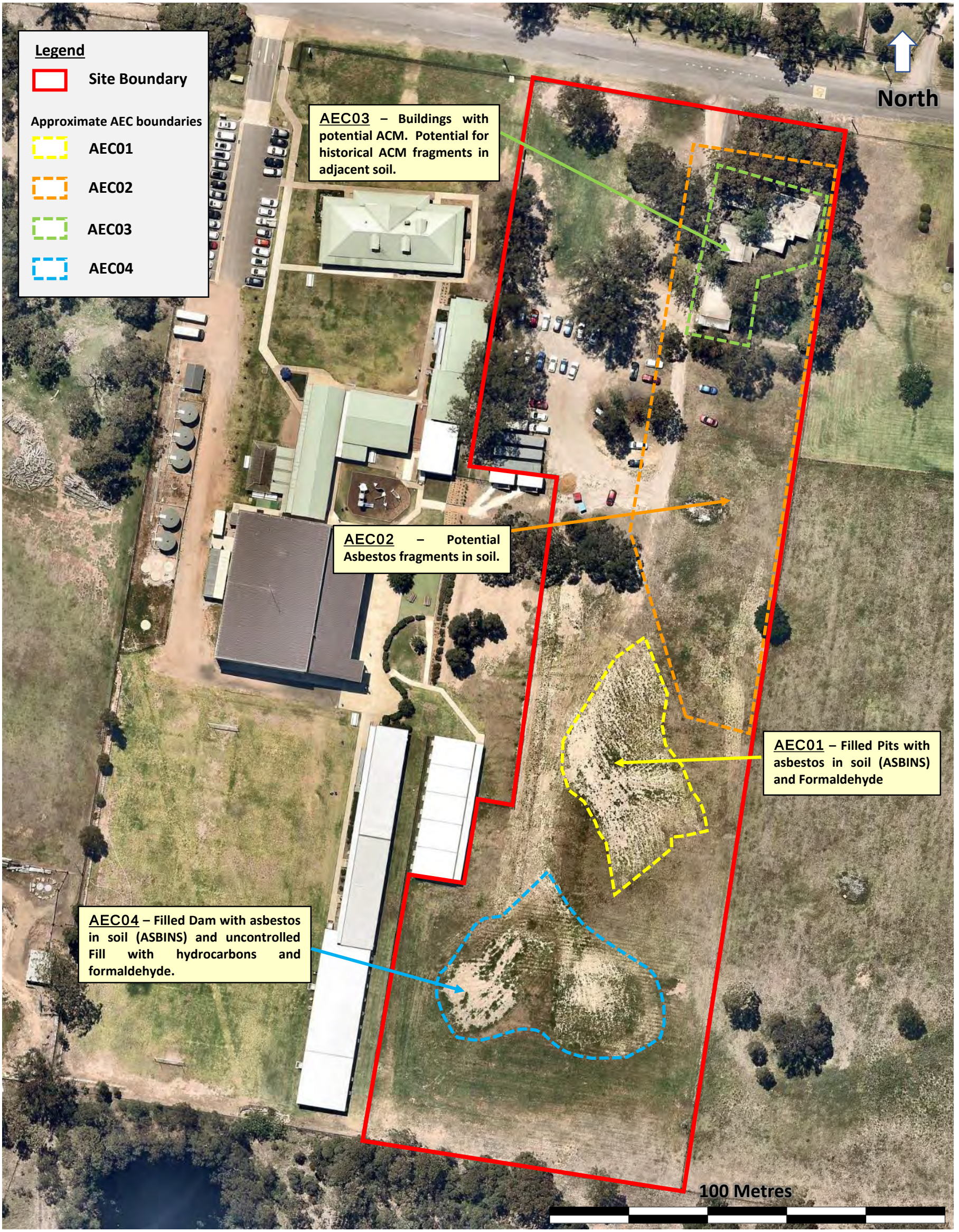
Client:	A.C.C.	Drawn:	CA	Figure:	5
Project:	ENRS0197	Source:	NearMaps	Date:	29/01/2020
Location:	61 Farm Road, Riverstone, NSW	Scale:	-	Title:	Exceedances of the SAC
		Status:	Rev 1		



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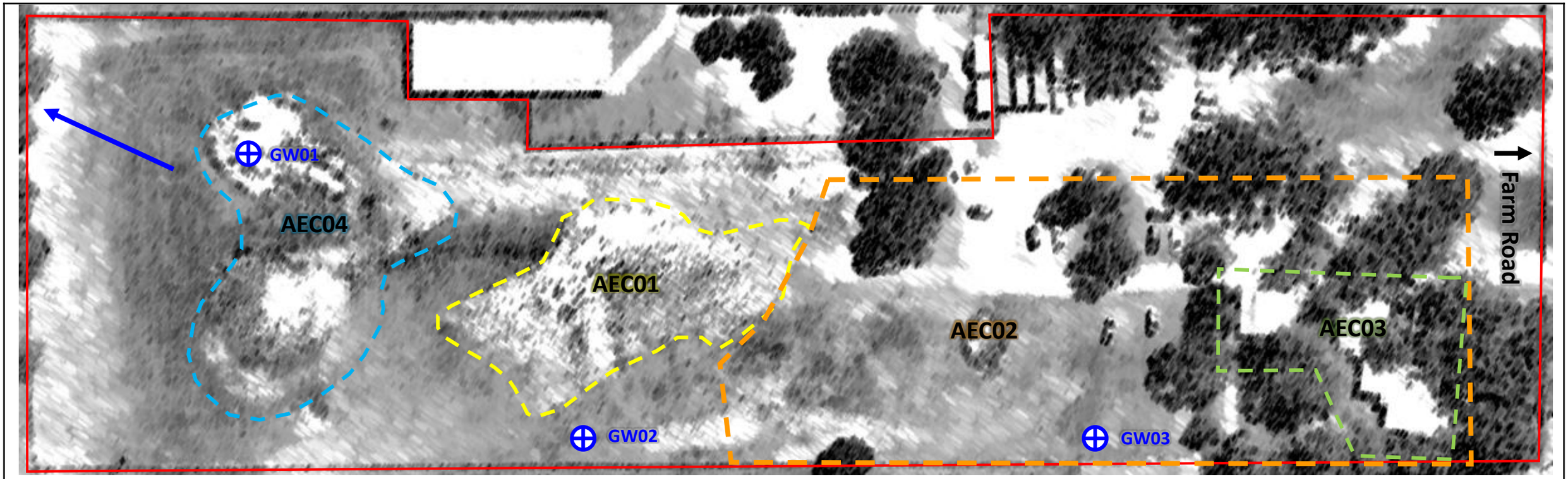
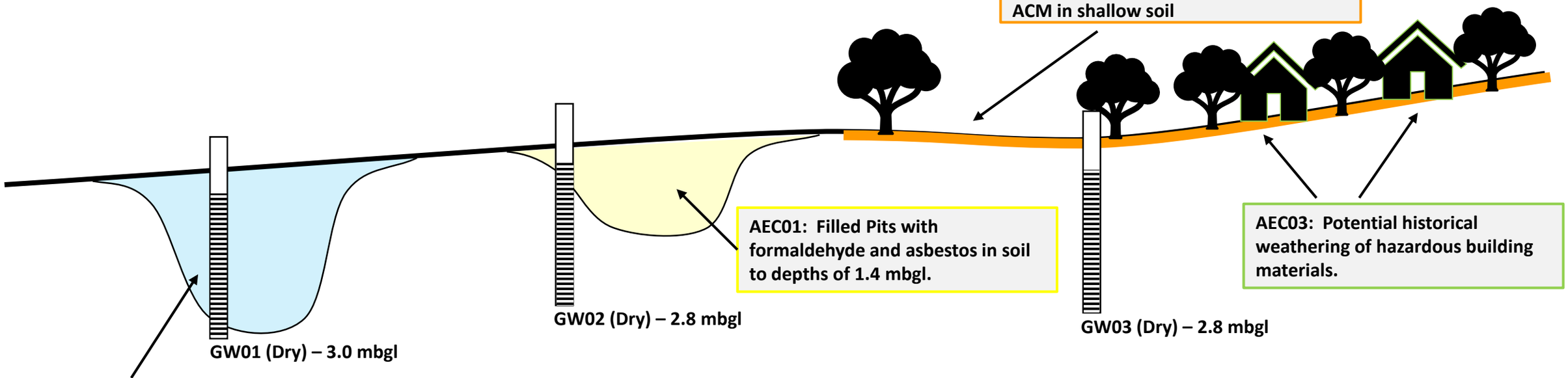
Client:	**ACC**	Drawn:	**CA**	Figure:	**6**
Project:	**ENRS0197**	Source:	**NearMaps**	Date:	**29/01/2020**
Location:	61 Farm Road, Riverstone, NSW	Scale:	**NA**	Title:	**Site AECs**
		Status:	**Rev 1**		



AEC02: Bonded asbestos fragment observed on ground surface. Potential ACM in shallow soil

N



AEC01: Filled Pits with formaldehyde and asbestos in soil to depths of 1.4 mbgl.

AEC03: Potential historical weathering of hazardous building materials.

AEC04: Filled Dam with hydrocarbons, formaldehyde and asbestos in soil to depths of 3.0 mbgl.

Inferred direction of Groundwater Flow at depths below the base of Fill

Not to Scale - Illustrative purposes for conceptualisation only

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Client:	ACC	Drawn:	R.L.	Figure:	7
Project:	ENRS0197	Source:	NearMaps	Date:	07/02/2020
Location:	61 Farm Road, Riverstone, NSW	Scale:	Not to Scale	Title:	Conceptual Site Model (CSM)
		Status:	Rev 1		

APPENDICES

Appendix A

Laboratory Certificates of Analysis (COA) & Chain of Custody (COC)

ENRS

Environment & Natural Resource Solutions

CHAIN OF CUSTODY - ENRS

ASET 18524 / 81704 / 1 - 17

Consultant:	ENRS	ENRS Project Name/Number:	ENRS0197
Project Mgr:	Rohan Last (0401 518 443)	Site Location/Address:	61 Farm Road, Riverstone
Sampler:	RL	PO No.:	ENRS0197
Address:	108 Jerry Bailey Rd, Shoalhaven Heads, NSW, 2535	Lab Services Quote No. :	-
Delivery:	over night	Date results required:	17/12/2019
Email:	lab@enrs.com.au	Or choose: standard / 1 day / 2 day / 3 day	
Phone:	02 4448 5490 Fax: 02 9037 4708	*Note: Inform lab in advance if urgent turnaround is required - surcharge applies*	

Lab: ASET - Aust. Safer Env. & Technology. Suite 710/90 George St, Hornsby NSW 2077. PO Box 1644 Hornsby Westfield NSW 1635
Phone: 02 9987 2183
E-mail: INFO@AUSSET.COM.AU
Contact: Mahen & Amalka

Sample information				Tests Required														Comments
Lab Sample ID	ENRS Sample ID	Date sampled	Type of sample	HOLD	Asbestos in Soil/Dust (NEPM W/W%)	Asbestos in Material	Asbestos Fibre Count	Asbestos in Water	asbestos w/w%	SMF	No Analysis required - dispose of sample			URGENT				sample description
1	S1	11/12/2019	Soil		1													
2	S2	11/12/2019	Soil		1													
3	S3	11/12/2019	Soil		1													
4	S4	11/12/2019	Soil		1													
5	S5	11/12/2019	Soil		1													
6	S6	11/12/2019	Soil		1													
7	S7	11/12/2019	Soil		1													
8	S8	11/12/2019	Soil		1													
9	S9	11/12/2019	Soil		1													
10	S10	11/12/2019	Soil		1													
11	S11	11/12/2019	Soil		1													
12	S12	11/12/2019	Soil		1													
13	S13	11/12/2019	Soil		1													
14	S14	11/12/2019	Soil		1													
15	S15	12/12/2019	Soil		1													
16	S16	12/12/2019	Soil		1													
17	Fragment 1 - Eaves	12/12/2019	Fragment			1												
			Total		*16*	*1*	*0*	*0*	*0*	*0*	*0*							

RECEIVED
18 DEC 2019
BY:

Relinquished by (company):	ENRS	Received by (company):	ASET
Print Name:	T.Flanigan	Print Name:	Rohan
Date & Time:	16/12/2019	Date & Time:	18/12/19 12-30 pm
Signature:	T.Flanigan	Signature:	

Samples Received: Cool or Ambient (circle one)
Temperature Recieved at: (if applicable)
Transported by: Hand delivered / courier

AUSTRALIAN SAFER ENVIRONMENT & TECHNOLOGY PTY LTD
ABN 36 088 095 112

Our ref : ASET78524 / 81704 / 1 - 17
Your ref : ENRS0197 – 61 Farm Road, Riverstone
NATA Accreditation No: 14484

18 December 2019

Environment & Natural Resource Solutions
108 Jerry Bailey Road
Shoalhaven Heads NSW 2535

Attn: Mr Rohan Last

Dear Rohan

Accredited for compliance with ISO/IEC 17025 - Testing.

Asbestos Identification
This report presents the results of seventeen samples, forwarded by Environment & Natural Resource Solutions on 18 December 2019, for analysis for asbestos.

1.Introduction: Seventeen samples forwarded were examined and analysed for the presence of asbestos.

2. Methods : The samples were examined under a Stereo Microscope and selected fibres were analysed by Polarized Light Microscopy in conjunction with Dispersion Staining method **(Australian Standard AS 4964 - 2004 and Safer Environment Method 1 as the supplementary work instruction) (Qualitative Analysis only).**

The report also provides approximate weights and percentages, categories of asbestos forms appearing in the sample, such as **AF**(Asbestos Fines), **FA**(Friable Asbestos) and **ACM** (Asbestos Containing Material), also satisfying the requirements of the WA/ NEPM Guidelines)

3. Results : **Sample No. 1. ASET78524 / 81704 / 1. ENRS0197 - S1.**
Approx dimensions 10.0 cm x 10.0 cm x 7.6 cm
Approximate total dry weight of soil = 760.0g.
The sample consisted of a mixture of clayish sandy soil, stones, sandstones, plant matter, wood chips, synthetic mineral fibres, fragments of plaster, cement, glass, paint flakes, plastic, ceramic tile and mica like material.
No asbestos detected.

Sample No. 2. ASET78524 / 81704 / 2. ENRS0197 - S2.
Approx dimensions 10.0 cm x 10.0 cm x 7.9 cm
The sample consisted of a mixture of clayish sandy soil, stones, sandstones, plant matter, synthetic mineral fibres, fragments of plaster, glass, paint flakes, plastic, fibre plaster cement#(FA) and mica like material.
Chrysotile# (Estimated approximate weight = 0.00137g) asbestos detected.
Approximate total dry weight of soil = 790.0g.
Approximate estimated weight of asbestos in soil in the form of FA = 0.00137g.
Approximate w/w percentage of asbestos in soil in the form of FA = 0.0002%.

Sample No. 3. ASET78524 / 81704 / 3. ENRS0197 - S3.
Approx dimensions 10.0 cm x 10.0 cm x 6.7 cm
Approximate total dry weight of soil = 670.0g.
The sample consisted of a mixture of clayish sandy soil, stones, sandstones, plant matter, wood chips, synthetic mineral fibres, fragments of plaster, cement, glass, paint flakes, plastic and mica like material.
No asbestos detected.

Sample No. 4. ASET78524 / 81704 / 4. ENRS0197 - S4.
Approx dimensions 10.0 cm x 10.0 cm x 7.2 cm
The sample consisted of a mixture of clayish sandy soil, stones, sandstones, plant matter, wood chips, synthetic mineral fibres, fragments of plaster, cement, glass, metal, fibro plaster cement#(FA), paint flakes, plastic and mica like material.
Chrysotile# (Estimated approximate weight = 0.00166g) asbestos detected.
Approximate total dry weight of soil = 720.0g.
Approximate estimated weight of asbestos in soil in the form of FA = 0.00166g.
Approximate w/w percentage of asbestos in soil in the form of FA = 0.0002%.

Sample No. 5. ASET78524 / 81704 / 5. ENRS0197 - S5.
Approx dimensions 10.0 cm x 10.0 cm x 6.6 cm
Approximate total dry weight of soil = 660.0g.
The sample consisted of a mixture of clayish sandy soil, stones, sandstones, plant matter, wood chips, synthetic mineral fibres, fragments of plaster, glass, cement, paint flakes, plastic and mica like material.
No asbestos detected.

Sample No. 6. ASET78524 / 81704 / 6. ENRS0197 - S6.
Approx dimensions 10.0 cm x 10.0 cm x 8.7 cm
Approximate total dry weight of soil = 870.0g.
The sample consisted of a mixture of clayish sandy soil, stones, sandstones, shale, plant matter, wood chips, fragments of cement, glass and coal like material.
No asbestos detected.

Sample No. 7. ASET78524 / 81704 / 7. ENRS0197 - S7.
Approx dimensions 10.0 cm x 10.0 cm x 7.0 cm
Approximate total dry weight of soil = 700.0g.
The sample consisted of a mixture of clayish sandy soil, stones, sandstones, shale and plant matter.
No asbestos detected.

Sample No. 8. ASET78524 / 81704 / 8. ENRS0197 - S8.
Approx dimensions 10.0 cm x 10.0 cm x 8.8 cm
Approximate total dry weight of soil = 880.0g.
The sample consisted of a mixture of clayish sandy soil, stones, sandstones, plant matter, wood chips, synthetic mineral fibres, fragments of plaster, glass, paint flakes and plastic.
No asbestos detected.

Sample No. 9. ASET78524 / 81704 / 9. ENRS0197 - S9.
Approx dimensions 10.0 cm x 10.0 cm x 7.2 cm
Approximate total dry weight of soil = 720.0g.
The sample consisted of a mixture of clayish sandy soil, stones, sandstones, plant matter, synthetic mineral fibres, fragments of plaster, cement, glass, paint flakes and plastic.
No asbestos detected.

Sample No. 10. ASET78524 / 81704 / 10. ENRS0197 - S10.
Approx dimensions 10.0 cm x 10.0 cm x 6.3 cm
The sample consisted of a mixture of clayish sandy soil, stones, sandstones, plant matter, wood chips, fragments of plaster, cement, glass, fibro plaster cement#(FA), paint flakes and plastic.
Chrysotile# (Estimated approximate weight = 0.00396g) asbestos detected.
Approximate total dry weight of soil = 630.0g.
Approximate estimated weight of asbestos in soil in the form of FA = 0.00396g.
Approximate w/w percentage of asbestos in soil in the form of FA = 0.001%.

Sample No. 11. ASET78524 / 81704 / 11. ENRS0197 - S11.
Approx dimensions 10.0 cm x 10.0 cm x 7.5 cm
Approximate total dry weight of soil = 750.0g.
The sample consisted of a mixture of clayish sandy soil, stones, sandstone, plant matter, wood chips, synthetic mineral fibres, fragments of plaster, cement, glass, paint flakes and plastic.
No asbestos detected.

Sample No. 12. ASET78524 / 81704 / 12. ENRS0197 - S12.
Approx dimensions 10.0 cm x 10.0 cm x 7.1 cm
The sample consisted of a mixture of clayish sandy soil, stones, plant matter, synthetic mineral fibres, fragments of cement, brick, bitumen, plaster, paint flakes, glass, metal and fibro plaster cement# (FA).
Chrysotile# (Approximate estimated weight = 0.0007g) asbestos detected.
Approximate total dry weight of soil = 710.0g
Approximate estimated weight of asbestos in soil in the form of FA = 0.00070g.
Approximate w/w percentage of asbestos in soil in the form of FA = 0.0001%.

Sample No. 13. ASET78524 / 81704 / 13. ENRS0197 - S13.
Approx dimensions 10.0 cm x 10.0 cm x 7.8 cm
The sample consisted of a mixture of clayish sandy soil, stones, plant matter, synthetic mineral fibres, fragments of cement, plaster, paint flakes, glass, metal and fibre cement* (ACM).
Chrysotile* (Approximate estimated weight = 0.0008g) asbestos and Amosite* (Approximate estimated weight = 0.0002g) asbestos detected.
Approximate total dry weight of soil = 784.0g.
Approximate estimated weight of asbestos in soil in the form of ACM = 0.001g.
Approximate w/w percentage of asbestos in soil in the form of ACM = 0.0001%.

Sample No. 14. ASET78524 / 81704 / 14. ENRS0197 - S14.
Approx dimensions 10.0 cm x 10.0 cm x 7.5 cm
Approximate total dry weight of soil = 755.0g.
The sample consisted of a mixture of clayish sandy soil, stones, plant matter, wood chips, synthetic mineral fibres, fragments of brick, cement, foam, glass and plastic.
No asbestos detected.

Sample No. 15. ASET78524 / 81704 / 15. ENRS0197 - S15.
Approx dimensions 10.0 cm x 10.0 cm x 7.2 cm
Approximate total dry weight of soil = 720.0g.
The sample consisted of a mixture of clayish sandy soil, stones, plant matter and fragments of cement.
No asbestos detected.

Sample No. 16. ASET78524 / 81704 / 16. ENRS0197 - S16.
Approx dimensions 10.0 cm x 10.0 cm x 7.5 cm
Approximate total dry weight of soil = 753.0g.
The sample consisted of a mixture of clayish sandy soil, stones, plant matter and fragments of glass.
No asbestos detected.

λ Sample No. 17. ASET78524 / 81704 / 17. ENRS0197 - Fragment 1 - Eaves.
Approx dimensions 27.0 cm x 10 cm x 0.45 cm
The sample consisted of a fragment of a fibro plaster cement material containing organic fibres.
No asbestos detected.

Reported by,

Mahen De Silva. BSc, MSc, Grad Dip (Occ Hyg)
Occupational Hygienist / Approved Identifier.
Approved Signatory

Accredited for compliance with ISO/IEC 17025 - Testing.

This report is consistent with the analytical procedures and reporting recommendations in the Western Australia Guidelines for the Assessment Remediation and Management of Asbestos contaminated sites in Western Australia and it also satisfies the requirements of the current NEPM Guidelines. NATA Accreditation does not cover the performance of this service.

Disclaimers;

The approx; weights given above can be used only as a guide. They do not represent absolute weights of each kind of asbestos, as it is impossible to extract all loose fibres from soil and other asbestos containing building material samples using this method. However above figures may be used as closest approximations to the exact values in each case. Estimation and/ or reporting of asbestos fibre weights in asbestos containing materials and soil is out of the Scope of the NATA Accreditation. NATA Accreditation only covers the qualitative part of the results reported. This weight disclaimer also covers weight / weight percentages if given.

ACM - Asbestos Containing Material - Products or materials that contain asbestos in an inert bound matrix such as cement or resin. Here taken to be sound material, even as fragments and not fitting through a 7mm X 7 mm sieve.

AF -Includes asbestos free fibres, small fibre bundles and also ACM fragments that pass through a 7mm X 7 mm sieve.

FA -Friable asbestos material such as severely weathered ACM, and asbestos in the form of loose fibrous material such as insulation products.

^ denotes loose fibres of relevant asbestos types detected in soil/dust.
*** denotes asbestos detected in ACM in bonded form.**
 # denotes friable asbestos as soft fibro plaster and/ or highly weathered ACM that will easily crumble.
λ denotes samples that have been analysed only in accordance to AS 4964 – 2004.

The results contained in this report relate only to the sample/s submitted for testing. Australian Safer Environment & Technology accepts no responsibility for whether or not the submitted sample/s is/are representative. Results indicating

"No asbestos detected" indicates a reporting limit specified in AS4964 -2004 which is 0.1g/ Kg (0.01%). Any amounts detected at assumed lower level than that would be reported, however those assumed lower levels may be treated as "No asbestos detected" as specified and recommended by A4964-2004. Trace / respirable level asbestos will be reported only when detected and trace analysis have been performed on each sample as required by AS4964-2004. When loose asbestos fibres/ fibre bundles are detected and reported that means they are larger handpicked fibres/ fibre bundles, and they do not represent respirable fibres. Dust/soil samples are always subjected to trace analysis except where the amounts involved are extremely minute and trace analysis is not possible to be carried out. When trace analysis is not performed on dust samples it will be indicated in the report that trace analysis has not been carried out due to the volume of the sample being extremely minute.

Estimation of asbestos weights involves the use of following assumptions;
Volume of each kind of Asbestos present in broken edges have been visually estimated and its been assumed that volumes remain similar throughout the binding matrix and those volumes are only approximate and not exact. Material densities have been assumed to be similar to commonly found similar materials and may not be exact.

All samples indicating "No asbestos detected" are assumed to be less than 0.001 % unless the actual approximate weight is given.

Chain of Custody

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

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

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

CLIENT:	**ENRS**	**TURNAROUND REQUIREMENTS :** (Standard TAT may be longer for some tests e.g.. Ultra Trace Organics)	☒ Standard TAT **(List due date):**	**FOR LABORATORY USE ONLY (Circle)**	
OFFICE:	**108 Jerry Bailey Road, Shoalhaven Heads**		☐ Non Standard or urgent TAT **(List due date):**	Custody Seal Intact?	Yes / No / N/A
PROJECT:	**ENRS0197 - 61 Farm Road, Riverstone**	**PO No.:**	**ALS QUOTE No.:** EN/222/17	Free ice / frozen ice bricks present upon receipt?	Yes / No / N/A
SITE DESCRIPTION:	**61 Farm Road, Riverstone**	**ENRS Project Number:**	**ENRS0197**	Random Sample Temperature on Receipt:	°C
PROJECT MANAGER:	**Rohan Last**	**CONTACT PH:**	**0403 526 292**	Other comment:	
SAMPLER:	**Chris Allen / Tamika Flanigan**	**SAMPLER MOBILE:**	**0478 725 692**		
COC Emailed to ALS?	**YES**	**EDD FORMAT (or default):**			
Email Reports to:	**lab@enrs.com.au;**				
Email Invoice to (default to PM if no addresses):	**accounts@enrs.com.au**				

COC SEQUENCE NUMBER (Circle)

COC:	**1**	2	3	4	5	6	7
OF:	1	2	**3**	4	5	6	7

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
CA			
DATE/TIME:..... **12/12/2019**	DATE/TIME:	DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where **Metals** are required, specify **Total** (unfiltered bottle required) or **Dissolved** (field filtered bottle required).								Additional Information
LAB ID	**SAMPLE ID**	**DATE / TIME**	**MATRIX**	**TYPE & PRESERVATIVE** *(refer to codes below)*		**S-26** (C6-C40, BTEXN, PAH, 8HM)	**S-19**	**CrVI, Ammonia, Formaldahyde**	**HOLD - 60 DAYS REQUIRED**					Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
	BH1/0.5	**9/12/2019**	**soil**	**Unpreserved Glass**		1		1						
	BH1/1.0	**9/12/2019**	**soil**	**Unpreserved Glass**					1					
	BH2/0.5	**9/12/2019**	**soil**	**Unpreserved Glass**			1							
	BH3/0.8	**9/12/2019**	**soil**	**Unpreserved Glass**		1								
	BH4/0.3	**9/12/2019**	**soil**	**Unpreserved Glass**			1							
	BH5/0.5	**9/12/2019**	**soil**	**Unpreserved Glass**		1								
	BH6/1.0	**9/12/2019**	**soil**	**Unpreserved Glass**					1					
	BH6/2.0	**9/12/2019**	**soil**	**Unpreserved Glass**			1	1						
	BH7/1.0	**9/12/2019**	**soil**	**Unpreserved Glass**		1								
	BH7/1.3	**9/12/2019**	**soil**	**Unpreserved Glass**			1							
	BH7/1.5	**9/12/2019**	**soil**	**Unpreserved Glass**			1							
	BH7/3.0	**9/12/2019**	**soil**	**Unpreserved Glass**			1							
	BH8/0.5	**10/12/2019**	**soil**	**Unpreserved Glass**		1								
	BH9/1.0	**10/12/2019**	**soil**	**Unpreserved Glass**		1								
	BH9/3.0	**10/12/2019**	**soil**	**Unpreserved Glass**					1					
	BH10/1.0	**10/12/2019**	**soil**	**Unpreserved Glass**			1							
	BH10/2.8	**10/12/2019**	**soil**	**Unpreserved Glass**		1		1						
	BH11/0.5	**10/12/2019**	**soil**	**Unpreserved Glass**		1								
	BH DUP1/0.5	**10/12/2019**	**soil**	**Unpreserved Glass**		1								
	BH11/2.0	**10/12/2019**	**soil**	**Unpreserved Glass**					1					
	BH12/0.2	**10/12/2019**	**soil**	**Unpreserved Glass**		1								
	BH13/0.2	**10/12/2019**	**soil**	**Unpreserved Glass**			1							
				TOTAL		10	8	3	4	0	0	0	0	

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic

V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;

Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag; LI = Lugols Iodine Preserved Bottles; STT = Sterile Sodium Thiosulfate Preserved Bottles.

Chain of Custody

❑SYDNEY 277-289 Woodpark Road Smithfield NSW 2164
Ph: 02 8784 8555 E: samples.sydney@alsglobal.com
❑NOWRA 4/13 Geary Place North Nowra NSW 2541
Ph: 02 4423 2063 E: nowra@alsglobal.com
❑WOLLONGONG 99 Kenny Street Wollongong NSW 2500
Ph: 02 4225 3125 E: wollongong@alsglobal.com

CLIENT:	**ENRS**	**TURNAROUND REQUIREMENTS :**	☒	Standard TAT **(List due date):**
OFFICE:	**108 Jerry Bailey Road, Shoalhaven Heads**	(Standard TAT may be longer for some tests e.g.. Ultra Trace Organics)	☐	Non Standard or urgent TAT **(List due date):**
PROJECT:	**ENRS0197 - 61 Farm Road, Riverstone**	**PO No.:**	**ALS QUOTE No.:**	**EN/222/17**
SITE DESCRIPTION:	**61 Farm Road, Riverstone**	**ENRS Project Number:**		**ENRS0197**
PROJECT MANAGER:	**Rohan Last**	**CONTACT PH:**	**0403 526 292**	
SAMPLER:	**Chris Allen / Tamika Flanigan**	**SAMPLER MOBILE:**	**0478 725 692**	
COC Emailed to ALS?	**YES**	**EDD FORMAT (or default):**		
Email Reports to:	**lab@enrs.com.au;**			
Email Invoice to (default to PM if no addresses):	**accounts@enrs.com.au**			

COC SEQUENCE NUMBER (Circle)

COC: 1 **2** 3 4 5 6 7

OF: 1 2 **3** 4 5 6 7

FOR LABORATORY USE ONLY (Circle)			
Custody Seal Intact?	Yes	No	N/A
Free ice / frozen ice bricks present upon receipt?	Yes	No	N/A
Random Sample Temperature on Receipt:		˚C	
Other comment:			

RELINQUISHED BY:	**RECEIVED BY:**	**RELINQUISHED BY:**	**RECEIVED BY:**
CA			
DATE/TIME:…… **12/12/2019**	DATE/TIME:	DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	**SAMPLE DETAILS** MATRIX: Solid(S) Water(W)			**CONTAINER INFORMATION**		**ANALYSIS REQUIRED including SUITES** (NB. Suite Codes must be listed to attract suite price) Where **Metals** are required, specify **Total** (unfiltered bottle required) or **Dissolved** (field filtered bottle required).								**Additional Information**
LAB ID	**SAMPLE ID**	**DATE / TIME**	**MATRIX**	**TYPE & PRESERVATIVE** *(refer to codes below)*		**S-26** (C6-C40, BTEXN, PAH, 8HM)	**S-19**	**CrVI, Ammonia, Formaldehyde**	**HOLD - 60 DAYS REQUIRED**					Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
	BH14/0.2	**10/12/2019**	**soil**	**Unpreserved Glass**		1								
	BH15/0.5	**10/12/2019**	**soil**	**Unpreserved Glass**			1							
	BH16/1.0	**10/12/2019**	**soil**	**Unpreserved Glass**		1								
	BH17/0.5	**10/12/2019**	**soil**	**Unpreserved Glass**		1		1						
	BH18/1.0	**10/12/2019**	**soil**	**Unpreserved Glass**		1								
	BH19/1.0	**10/12/2019**	**soil**	**Unpreserved Glass**			1	1						
	BH19/2.0	**10/12/2019**	**soil**	**Unpreserved Glass**		1		1						
	BH20/0.5	**10/12/2019**	**soil**	**Unpreserved Glass**		1								
	BH21/0.5	**10/12/2019**	**soil**	**Unpreserved Glass**			1	1						
	BH DUP2/0.5	**10/12/2019**	**soil**	**Unpreserved Glass**		1								
	BH21/1.0	**10/12/2019**	**soil**	**Unpreserved Glass**			1							
	BH21/2.5	**10/12/2019**	**soil**	**Unpreserved Glass**		1		1						
	BH22/0.5	**11/12/2019**	**soil**	**Unpreserved Glass**			1	1						
	BH22/1.5	**11/12/2019**	**soil**	**Unpreserved Glass**		1		1						
	BH22/2.5	**11/12/2019**	**soil**	**Unpreserved Glass**					1					
	BH23/0.5	**11/12/2019**	**soil**	**Unpreserved Glass**		1		1						
	BH23/1.5	**11/12/2019**	**soil**	**Unpreserved Glass**			1	1						
	BH24/0.5	**11/12/2019**	**soil**	**Unpreserved Glass**			1	1						
	BH24/1.5	**11/12/2019**	**soil**	**Unpreserved Glass**		1		1						
	BH25/2.5	**11/12/2019**	**soil**	**Unpreserved Glass**			1							
	BH26/0.5	**11/12/2019**	**soil**	**Unpreserved Glass**		1		1						
	BH27/0.5	**11/12/2019**	**soil**	**Unpreserved Glass**		1								
	BH28/0.5	**11/12/2019**	**soil**	**Unpreserved Glass**			1							
	BH28/2.5	**11/12/2019**	**soil**	**Unpreserved Glass**					1					
				TOTAL		13	9	12	2	0	0	0	0	

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V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;

Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag; LI = Lugols Iodine Preserved Bottles; STT = Sterile Sodium Thiosulfate Preserved Bottles.

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

CLIENT: ENRS
OFFICE: 108 Jerry Bailey Road, Shoalhaven Heads
PROJECT: ENRS0197 - 61 Farm Road, Riverstone
SITE DESCRIPTION: 61 Farm Road, Riverstone
PROJECT MANAGER: Rohan Last **CONTACT PH:** 0403 526 292
SAMPLER: Chris Allen / Tamika Flanigan **SAMPLER MOBILE:** 0478 725 692
COC Emailed to ALS? YES **EDD FORMAT (or default):**
Email Reports to: lab@enrs.com.au;
Email Invoice to (default to PM if no addresses): accounts@enrs.com.au

TURNAROUND REQUIREMENTS : (Standard TAT may be longer for some tests e.g.. Ultra Trace Organics)
☒ Standard TAT **(List due date):**
☐ Non Standard or urgent TAT **(List due date):**

PO No.:
ALS QUOTE No.: EN/222/17
ENRS Project Number: ENRS0197

COC SEQUENCE NUMBER (Circle)
COC: 1 2 [3] 4 5 6 7
OF: 1 2 [3] 4 5 6 7

FOR LABORATORY USE ONLY (Circle)
Custody Seal Intact? Yes No N/A
Free ice / frozen ice bricks present upon receipt? Yes No N/A
Random Sample Temperature on Receipt: ˚C
Other comment:

RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
CA			
DATE/TIME:…… 12/12/2019	DATE/TIME:	DATE/TIME:	DATE/TIME:

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE ONLY	SAMPLE DETAILS MATRIX: Solid(S) Water(W)			CONTAINER INFORMATION		ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where **Metals** are required, specify **Total** (unfiltered bottle required) or **Dissolved** (field filtered bottle required).								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*		**S-26** (C6-C40, BTEXN, PAH, 8HM)	**S-19**	**CrVI, Ammonia, Formaldahyde**					**HOLD - 60 DAYS REQUIRED**	Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc.
	BH29/0.3	11/12/2019	soil	Unpreserved Glass		1								
	BH DUP3/0.3	11/12/2019	soil	Unpreserved Glass		1								
	BH30/0.5	11/12/2019	soil	Unpreserved Glass			1							
	BH31/0.5	11/12/2019	soil	Unpreserved Glass		1								
	BH32/0.3	11/12/2019	soil	Unpreserved Glass		1								
	SP1	11/12/2019	soil	Unpreserved Glass		1								
	SP2	11/12/2019	soil	Unpreserved Glass		1								
	SP3	11/12/2019	soil	Unpreserved Glass		1								
				TOTAL		7	1	0	0	0	0	0	0	

Water Container Codes: P = Unpreserved Plastic; N = Nitric Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide/Cd Preserved; S = Sodium Hydroxide Preserved Plastic; AG = Amber Glass Unpreserved; AP - Airfreight Unpreserved Plastic
V = VOA Vial HCl Preserved; VB = VOA Vial Sodium Bisulphate Preserved; VS = VOA Vial Sulfuric Preserved; AV = Airfreight Unpreserved Vial SG = Sulfuric Preserved Amber Glass; H = HCl preserved Plastic; HS = HCl preserved Speciation bottle; SP = Sulfuric Preserved Plastic; F = Formaldehyde Preserved Glass;
Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; ASS = Plastic Bag for Acid Sulphate Soils; B = Unpreserved Bag; LI = Lugols Iodine Preserved Bottles; STT = Sterile Sodium Thiosulfate Preserved Bottles.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EW1905555**	Page	: 1 of 51
Client	: **ENVIRONMENT & NATURAL RESOURCE SOLUTIONS**	Laboratory	: Environmental Division NSW South Coast
Contact	: chris Allen	Contact	: Aneta Prosaroski
Address	: 25 River Rd Shoalhaven Heads 2535	Address	: 1/19 Ralph Black Dr, North Wollongong 2500 4/13 Geary Pl, North Nowra 2541 Australia NSW Australia
Telephone	: ----	Telephone	: +61 2 4225 3125
Project	: ENRS0197 - 61 Farm Road, Riverstone	Date Samples Received	: 19-Dec-2019 10:38
Order number	: ENRS0197	Date Analysis Commenced	: 20-Dec-2019
C-O-C number	: ----	Issue Date	: 02-Jan-2020 22:13
Sampler	: chris Allen, Tamika Flanigan		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 54		
No. of samples analysed	: 48		

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

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

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

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

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

- EG048G: Poor spike recovery for Hexavalent Chromium by Alkaline Digestion due to matrix interferences.
- EG048G: LOR raised for Hexavalent Chromium by Alkaline Digestion on a few samples due to sample matrix.
- 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.
- EP010- LOR raised due to samples matrix.
- EP075(SIM): LOR for samples raised due to high amount of moisture present.
- EP080: Surrogate recovery bias low due to sample matrix interferences, confirmed by re-extraction and re-analysis.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH14/0.2	BH15/0.5	BH16/1.0	BH17/0.5	BH18/1.0
			Client sampling date / time	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00
Compound	CAS Number	LOR	Unit	EW1905555-001	EW1905555-002	EW1905555-003	EW1905555-004	EW1905555-005
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	10.6	12.7	23.2	22.2	17.9
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	7	10	11	9	6
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	16	33	22	20	3
Copper	7440-50-8	5	mg/kg	36	9	12	16	6
Lead	7439-92-1	5	mg/kg	55	23	18	13	<5
Nickel	7440-02-0	2	mg/kg	22	5	<2	4	<2
Zinc	7440-66-6	5	mg/kg	68	14	<5	12	<5
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	----	----	<0.5	----
EK055: Ammonia as N								
Ammonia as N	7664-41-7	20	mg/kg	----	----	----	<20	----
EP010: Formaldehyde								
Formaldehyde	50-00-0	2	mg/kg	----	----	----	<2	----
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	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH14/0.2	BH15/0.5	BH16/1.0	BH17/0.5	BH18/1.0
				Client sampling date / time	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-001	EW1905555-002	EW1905555-003	EW1905555-004	EW1905555-005
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
Endrin	72-20-8	0.05	mg/kg		----	<0.05	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	<0.05	----	----	----
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		----	<0.05	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		----	<0.05	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	<0.05	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	<0.05	----	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		----	<0.2	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		----	<0.05	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg		----	<0.2	----	----	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		----	<0.05	----	----	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-29-3	0.05	mg/kg		----	<0.05	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	<0.05	----	----	----
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	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH14/0.2	BH15/0.5	BH16/1.0	BH17/0.5	BH18/1.0
				Client sampling date / time	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-001	EW1905555-002	EW1905555-003	EW1905555-004	EW1905555-005
					Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued									
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	----	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		----	<0.5	----	----	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		----	<0.5	----	----	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		----	<0.5	----	----	----
Pentachlorophenol	87-86-5	2	mg/kg		----	<2	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		**1.2**	<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		**3.3**	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		**3.8**	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		**1.8**	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		**1.8**	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		**2.5**	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		**1.0**	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		**2.4**	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		**1.0**	<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		**1.4**	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		**20.2**	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		**3.1**	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**3.3**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**3.6**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH14/0.2	BH15/0.5	BH16/1.0	BH17/0.5	BH18/1.0
				Client sampling date / time	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-001	EW1905555-002	EW1905555-003	EW1905555-004	EW1905555-005
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C15 - C28 Fraction	----	100	mg/kg		**120**	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		**230**	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		**350**	<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		**260**	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		**260**	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		**520**	<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	%		**----**	**111**	**----**	**----**	**----**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**----**	**85.2**	**----**	**----**	**----**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**----**	**114**	**----**	**----**	**----**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**111**	**106**	**103**	**101**	**105**
2-Chlorophenol-D4	93951-73-6	0.5	%		**109**	**104**	**102**	**101**	**105**
2.4.6-Tribromophenol	118-79-6	0.5	%		**90.4**	**72.8**	**70.8**	**70.1**	**69.6**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**124**	**119**	**115**	**111**	**116**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH14/0.2	BH15/0.5	BH16/1.0	BH17/0.5	BH18/1.0
				Client sampling date / time	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-001	EW1905555-002	EW1905555-003	EW1905555-004	EW1905555-005
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates - Continued									
Anthracene-d10	1719-06-8	0.5	%		**116**	**110**	**107**	**104**	**107**
4-Terphenyl-d14	1718-51-0	0.5	%		**117**	**115**	**113**	**110**	**114**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**122**	**104**	**126**	**103**	**98.1**
Toluene-D8	2037-26-5	0.2	%		**104**	**89.9**	**125**	**84.2**	**87.7**
4-Bromofluorobenzene	460-00-4	0.2	%		**117**	**105**	**119**	**97.7**	**99.8**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH19/1.0	BH19/2.0	BH20/0.5	BH21/0.5	BHDUP2/0.5
			Client sampling date / time	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00
Compound	CAS Number	LOR	Unit	EW1905555-006	EW1905555-007	EW1905555-008	EW1905555-009	EW1905555-010
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	22.9	24.9	22.4	10.1	9.6
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	9	7	6	13	13
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	20	9	37	40	43
Copper	7440-50-8	5	mg/kg	9	12	19	8	8
Lead	7439-92-1	5	mg/kg	34	12	21	23	23
Nickel	7440-02-0	2	mg/kg	5	<2	3	3	4
Zinc	7440-66-6	5	mg/kg	22	11	11	14	11
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	----	<0.5	----
EK055: Ammonia as N								
Ammonia as N	7664-41-7	20	mg/kg	<20	<20	----	<20	----
EP010: Formaldehyde								
Formaldehyde	50-00-0	2	mg/kg	<2	<4	----	<2	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	<0.1	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	<0.05	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	<0.05	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	<0.05	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	<0.05	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	----	<0.05	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH19/1.0	BH19/2.0	BH20/0.5	BH21/0.5	BHDUP2/0.5
				Client sampling date / time	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-006	EW1905555-007	EW1905555-008	EW1905555-009	EW1905555-010
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
Endrin	72-20-8	0.05	mg/kg		<0.05	----	----	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	----	----	<0.05	----
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		<0.05	----	----	<0.05	----
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	----	----	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	----	----	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	----	----	<0.05	----
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	----	----	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	----	----	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	----	----	<0.2	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	----	----	<0.05	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-29-3	0.05	mg/kg		<0.05	----	----	<0.05	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	----	----	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	----	----	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	----	----	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	----	----	<0.05	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	----	----	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	----	----	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	----	----	<0.2	----
Malathion	121-75-5	0.05	mg/kg		<0.05	----	----	<0.05	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	----	----	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	----	----	<0.05	----
Parathion	56-38-2	0.2	mg/kg		<0.2	----	----	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	----	----	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	----	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	----	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	----	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	----	<0.05	----
Ethion	563-12-2	0.05	mg/kg		<0.05	----	----	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	----	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	----	<0.05	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	----	----	<0.5	----
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	----	----	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH19/1.0	BH19/2.0	BH20/0.5	BH21/0.5	BHDUP2/0.5
				Client sampling date / time	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-006	EW1905555-007	EW1905555-008	EW1905555-009	EW1905555-010
					Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued									
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	----	----	<0.5	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	----	----	<1	----
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	----	----	<0.5	----
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	----	----	<0.5	----
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	----	----	<0.5	----
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	----	----	<0.5	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	----	----	<0.5	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	----	----	<0.5	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	----	----	<0.5	----
Pentachlorophenol	87-86-5	2	mg/kg		<2	----	----	<2	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH19/1.0	BH19/2.0	BH20/0.5	BH21/0.5	BHDUP2/0.5
				Client sampling date / time	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-006	EW1905555-007	EW1905555-008	EW1905555-009	EW1905555-010
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	<50	<50	<50	<50
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**73.9**	----	----	**116**	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**61.5**	----	----	**99.3**	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**123**	----	----	**88.9**	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**104**	**105**	**102**	**99.0**	**99.7**
2-Chlorophenol-D4	93951-73-6	0.5	%		**104**	**106**	**101**	**96.8**	**96.4**
2.4.6-Tribromophenol	118-79-6	0.5	%		**74.8**	**72.1**	**68.4**	**68.8**	**67.1**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**116**	**117**	**113**	**111**	**112**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH19/1.0	BH19/2.0	BH20/0.5	BH21/0.5	BHDUP2/0.5
				Client sampling date / time	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-006	EW1905555-007	EW1905555-008	EW1905555-009	EW1905555-010
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates - Continued									
Anthracene-d10	1719-06-8	0.5	%		**107**	**108**	**106**	**104**	**105**
4-Terphenyl-d14	1718-51-0	0.5	%		**112**	**115**	**114**	**113**	**114**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**98.8**	**109**	**112**	**102**	**109**
Toluene-D8	2037-26-5	0.2	%		**93.9**	**97.8**	**90.5**	**91.2**	**93.9**
4-Bromofluorobenzene	460-00-4	0.2	%		**104**	**102**	**101**	**96.8**	**96.4**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH21/1.0	BH21/2.5	BH22/0.5	BH22/1.5	BH23/0.5
			Client sampling date / time	10-Dec-2019 00:00	10-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00
Compound	CAS Number	LOR	Unit	EW1905555-011	EW1905555-012	EW1905555-013	EW1905555-014	EW1905555-016
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	17.8	20.1	12.2	25.5	16.7
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	11	<5	10	<5	6
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	34	3	25	3	8
Copper	7440-50-8	5	mg/kg	16	6	28	10	13
Lead	7439-92-1	5	mg/kg	35	7	22	6	9
Nickel	7440-02-0	2	mg/kg	5	<2	6	<2	<2
Zinc	7440-66-6	5	mg/kg	18	5	188	49	10
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	<0.5	<0.5	<0.5	<0.5
EK055: Ammonia as N								
Ammonia as N	7664-41-7	20	mg/kg	----	<20	<20	<20	<20
EP010: Formaldehyde								
Formaldehyde	50-00-0	2	mg/kg	----	<4	3	<4	<8
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	<0.1	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	<0.05	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	<0.05	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	<0.05	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	<0.05	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	<0.05	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	<0.05	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	<0.05	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	<0.05	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	<0.05	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	<0.05	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	<0.05	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	<0.05	----	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	<0.05	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	<0.05	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH21/1.0	BH21/2.5	BH22/0.5	BH22/1.5	BH23/0.5
				Client sampling date / time	10-Dec-2019 00:00	10-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-011	EW1905555-012	EW1905555-013	EW1905555-014	EW1905555-016
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
Endrin	72-20-8	0.05	mg/kg		<0.05	----	<0.05	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	----	<0.05	----	----
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		<0.05	----	<0.05	----	----
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	----	<0.05	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	----	<0.05	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	----	<0.05	----	----
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	----	<0.2	----	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	----	<0.05	----	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	----	<0.2	----	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	----	<0.05	----	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-29-3	0.05	mg/kg		<0.05	----	<0.05	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	----	<0.05	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	----	<0.05	----	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	----	<0.2	----	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	----	<0.05	----	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	----	<0.05	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	----	<0.05	----	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	----	<0.2	----	----
Malathion	121-75-5	0.05	mg/kg		<0.05	----	<0.05	----	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	----	<0.05	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	----	<0.05	----	----
Parathion	56-38-2	0.2	mg/kg		<0.2	----	<0.2	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	----	<0.05	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	<0.05	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	<0.05	----	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	<0.05	----	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	<0.05	----	----
Ethion	563-12-2	0.05	mg/kg		<0.05	----	<0.05	----	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	<0.05	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	<0.05	----	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	----	<0.5	----	----
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	----	<0.5	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH21/1.0	BH21/2.5	BH22/0.5	BH22/1.5	BH23/0.5
				Client sampling date / time	10-Dec-2019 00:00	10-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-011	EW1905555-012	EW1905555-013	EW1905555-014	EW1905555-016
					Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued									
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	----	<0.5	----	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	----	<1	----	----
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	----	<0.5	----	----
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	----	<0.5	----	----
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	----	<0.5	----	----
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	----	<0.5	----	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	----	<0.5	----	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	----	<0.5	----	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	----	<0.5	----	----
Pentachlorophenol	87-86-5	2	mg/kg		<2	----	<2	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH21/1.0	BH21/2.5	BH22/0.5	BH22/1.5	BH23/0.5
				Client sampling date / time	10-Dec-2019 00:00	10-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-011	EW1905555-012	EW1905555-013	EW1905555-014	EW1905555-016
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	<50	<50	<50	<50
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**112**	----	**104**	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**99.2**	----	**93.0**	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**116**	----	**117**	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**93.2**	**99.9**	**99.8**	**102**	**98.4**
2-Chlorophenol-D4	93951-73-6	0.5	%		**90.4**	**91.2**	**96.6**	**98.7**	**96.2**
2.4.6-Tribromophenol	118-79-6	0.5	%		**65.2**	**83.8**	**85.0**	**81.4**	**77.8**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**101**	**106**	**114**	**116**	**110**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH21/1.0	BH21/2.5	BH22/0.5	BH22/1.5	BH23/0.5
				Client sampling date / time	10-Dec-2019 00:00	10-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-011	EW1905555-012	EW1905555-013	EW1905555-014	EW1905555-016
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates - Continued									
Anthracene-d10	1719-06-8	0.5	%		**101**	**112**	**107**	**108**	**104**
4-Terphenyl-d14	1718-51-0	0.5	%		**110**	**111**	**108**	**109**	**105**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**109**	**125**	**100**	**68.8**	**110**
Toluene-D8	2037-26-5	0.2	%		**91.6**	**107**	**91.8**	**71.8**	**90.8**
4-Bromofluorobenzene	460-00-4	0.2	%		**96.0**	**117**	**92.0**	**84.7**	**98.8**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH23/1.5	BH24/0.5	BH24/1.5	BH25/2.5	BH26/0.5
			Client sampling date / time	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00
Compound	CAS Number	LOR	Unit	EW1905555-017	EW1905555-018	EW1905555-019	EW1905555-020	EW1905555-021
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	19.5	16.9	19.6	11.2	13.6
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	6	11	<5	<5	8
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	3	20	2	3	13
Copper	7440-50-8	5	mg/kg	10	14	7	9	12
Lead	7439-92-1	5	mg/kg	10	17	8	6	10
Nickel	7440-02-0	2	mg/kg	<2	2	<2	<2	<2
Zinc	7440-66-6	5	mg/kg	6	22	6	8	6
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	<0.5
EK055: Ammonia as N								
Ammonia as N	7664-41-7	20	mg/kg	<20	<20	60	----	<20
EP010: Formaldehyde								
Formaldehyde	50-00-0	2	mg/kg	<8	2	<8	----	<8
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	----	<0.1	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	----	<0.05	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	----	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH23/1.5	BH24/0.5	BH24/1.5	BH25/2.5	BH26/0.5
				Client sampling date / time	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-017	EW1905555-018	EW1905555-019	EW1905555-020	EW1905555-021
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	----	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	----	<0.2	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	----	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	----	<0.2	----
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	----	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	----	<0.05	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	<0.5	----	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH23/1.5	BH24/0.5	BH24/1.5	BH25/2.5	BH26/0.5
				Client sampling date / time	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-017	EW1905555-018	EW1905555-019	EW1905555-020	EW1905555-021
					Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued									
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	----	<1	----
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	<0.5	----	<0.5	----
Pentachlorophenol	87-86-5	2	mg/kg		<2	<2	----	<2	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH23/1.5	BH24/0.5	BH24/1.5	BH25/2.5	BH26/0.5
				Client sampling date / time	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-017	EW1905555-018	EW1905555-019	EW1905555-020	EW1905555-021
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**78.2**	**112**	**----**	**122**	**----**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**116**	**91.1**	**----**	**103**	**----**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**120**	**112**	**----**	**93.9**	**----**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**107**	**95.4**	**103**	**103**	**104**
2-Chlorophenol-D4	93951-73-6	0.5	%		**104**	**91.6**	**99.5**	**102**	**100**
2.4.6-Tribromophenol	118-79-6	0.5	%		**83.2**	**79.2**	**82.0**	**81.1**	**83.6**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**122**	**112**	**117**	**118**	**121**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH23/1.5	BH24/0.5	BH24/1.5	BH25/2.5	BH26/0.5
				Client sampling date / time	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-017	EW1905555-018	EW1905555-019	EW1905555-020	EW1905555-021
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates - Continued									
Anthracene-d10	1719-06-8	0.5	%		**115**	**108**	**110**	**112**	**113**
4-Terphenyl-d14	1718-51-0	0.5	%		**117**	**110**	**113**	**114**	**115**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**96.8**	**115**	**104**	**111**	**96.8**
Toluene-D8	2037-26-5	0.2	%		**88.4**	**89.4**	**88.4**	**95.5**	**91.5**
4-Bromofluorobenzene	460-00-4	0.2	%		**89.6**	**97.4**	**93.2**	**96.0**	**91.8**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH27/0.5	BH28/0.5	BH1/0.5	BH2/0.5	BH3/0.8
			Client sampling date / time	11-Dec-2019 00:00	11-Dec-2019 00:00	09-Dec-2019 00:00	09-Dec-2019 00:00	09-Dec-2019 00:00
Compound	CAS Number	LOR	Unit	EW1905555-022	EW1905555-023	EW1905555-025	EW1905555-027	EW1905555-028
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	17.1	15.3	11.9	16.5	19.5
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	8	10	12	10	14
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	12	10	24	26	20
Copper	7440-50-8	5	mg/kg	17	18	42	18	15
Lead	7439-92-1	5	mg/kg	10	9	24	22	22
Nickel	7440-02-0	2	mg/kg	<2	4	8	6	3
Zinc	7440-66-6	5	mg/kg	11	15	100	30	11
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	----	<0.5	----	----
EK055: Ammonia as N								
Ammonia as N	7664-41-7	20	mg/kg	----	----	<20	----	----
EP010: Formaldehyde								
Formaldehyde	50-00-0	2	mg/kg	----	----	<4	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	----	<0.1	----	<0.1	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	----	<0.05	----	<0.05	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	----	<0.05	----	<0.05	----
beta-BHC	319-85-7	0.05	mg/kg	----	<0.05	----	<0.05	----
gamma-BHC	58-89-9	0.05	mg/kg	----	<0.05	----	<0.05	----
delta-BHC	319-86-8	0.05	mg/kg	----	<0.05	----	<0.05	----
Heptachlor	76-44-8	0.05	mg/kg	----	<0.05	----	<0.05	----
Aldrin	309-00-2	0.05	mg/kg	----	<0.05	----	<0.05	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	----	<0.05	----	<0.05	----
^ Total Chlordane (sum)	----	0.05	mg/kg	----	<0.05	----	<0.05	----
trans-Chlordane	5103-74-2	0.05	mg/kg	----	<0.05	----	<0.05	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	----	<0.05	----	<0.05	----
cis-Chlordane	5103-71-9	0.05	mg/kg	----	<0.05	----	<0.05	----
Dieldrin	60-57-1	0.05	mg/kg	----	<0.05	----	<0.05	----
4.4`-DDE	72-55-9	0.05	mg/kg	----	<0.05	----	<0.05	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH27/0.5	BH28/0.5	BH1/0.5	BH2/0.5	BH3/0.8
				Client sampling date / time	11-Dec-2019 00:00	11-Dec-2019 00:00	09-Dec-2019 00:00	09-Dec-2019 00:00	09-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-022	EW1905555-023	EW1905555-025	EW1905555-027	EW1905555-028
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
Endrin	72-20-8	0.05	mg/kg		----	<0.05	----	<0.05	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	<0.05	----	<0.05	----
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		----	<0.05	----	<0.05	----
4.4`-DDD	72-54-8	0.05	mg/kg		----	<0.05	----	<0.05	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	<0.05	----	<0.05	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	<0.05	----	<0.05	----
4.4`-DDT	50-29-3	0.2	mg/kg		----	<0.2	----	<0.2	----
Endrin ketone	53494-70-5	0.05	mg/kg		----	<0.05	----	<0.05	----
Methoxychlor	72-43-5	0.2	mg/kg		----	<0.2	----	<0.2	----
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		----	<0.05	----	<0.05	----
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-29-3	0.05	mg/kg		----	<0.05	----	<0.05	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		----	<0.05	----	<0.05	----
Demeton-S-methyl	919-86-8	0.05	mg/kg		----	<0.05	----	<0.05	----
Monocrotophos	6923-22-4	0.2	mg/kg		----	<0.2	----	<0.2	----
Dimethoate	60-51-5	0.05	mg/kg		----	<0.05	----	<0.05	----
Diazinon	333-41-5	0.05	mg/kg		----	<0.05	----	<0.05	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		----	<0.05	----	<0.05	----
Parathion-methyl	298-00-0	0.2	mg/kg		----	<0.2	----	<0.2	----
Malathion	121-75-5	0.05	mg/kg		----	<0.05	----	<0.05	----
Fenthion	55-38-9	0.05	mg/kg		----	<0.05	----	<0.05	----
Chlorpyrifos	2921-88-2	0.05	mg/kg		----	<0.05	----	<0.05	----
Parathion	56-38-2	0.2	mg/kg		----	<0.2	----	<0.2	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		----	<0.05	----	<0.05	----
Chlorfenvinphos	470-90-6	0.05	mg/kg		----	<0.05	----	<0.05	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg		----	<0.05	----	<0.05	----
Fenamiphos	22224-92-6	0.05	mg/kg		----	<0.05	----	<0.05	----
Prothiofos	34643-46-4	0.05	mg/kg		----	<0.05	----	<0.05	----
Ethion	563-12-2	0.05	mg/kg		----	<0.05	----	<0.05	----
Carbophenothion	786-19-6	0.05	mg/kg		----	<0.05	----	<0.05	----
Azinphos Methyl	86-50-0	0.05	mg/kg		----	<0.05	----	<0.05	----
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		----	<0.5	----	<0.5	----
2-Chlorophenol	95-57-8	0.5	mg/kg		----	<0.5	----	<0.5	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH27/0.5	BH28/0.5	BH1/0.5	BH2/0.5	BH3/0.8
				Client sampling date / time	11-Dec-2019 00:00	11-Dec-2019 00:00	09-Dec-2019 00:00	09-Dec-2019 00:00	09-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-022	EW1905555-023	EW1905555-025	EW1905555-027	EW1905555-028
					Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued									
2-Methylphenol	95-48-7	0.5	mg/kg		----	<0.5	----	<0.5	----
3- & 4-Methylphenol	1319-77-3	1	mg/kg		----	<1	----	<1	----
2-Nitrophenol	88-75-5	0.5	mg/kg		----	<0.5	----	<0.5	----
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		----	<0.5	----	<0.5	----
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		----	<0.5	----	<0.5	----
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		----	<0.5	----	<0.5	----
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		----	<0.5	----	<0.5	----
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		----	<0.5	----	<0.5	----
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		----	<0.5	----	<0.5	----
Pentachlorophenol	87-86-5	2	mg/kg		----	<2	----	<2	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH27/0.5	BH28/0.5	BH1/0.5	BH2/0.5	BH3/0.8
				Client sampling date / time	11-Dec-2019 00:00	11-Dec-2019 00:00	09-Dec-2019 00:00	09-Dec-2019 00:00	09-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-022	EW1905555-023	EW1905555-025	EW1905555-027	EW1905555-028
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		----	127	----	105	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	104	----	92.2	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	114	----	95.5	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		117	110	116	116	112
2-Chlorophenol-D4	93951-73-6	0.5	%		117	111	116	116	114
2.4.6-Tribromophenol	118-79-6	0.5	%		106	101	102	105	97.0
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		122	122	124	126	123

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH27/0.5	BH28/0.5	BH1/0.5	BH2/0.5	BH3/0.8
				Client sampling date / time	11-Dec-2019 00:00	11-Dec-2019 00:00	09-Dec-2019 00:00	09-Dec-2019 00:00	09-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-022	EW1905555-023	EW1905555-025	EW1905555-027	EW1905555-028
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates - Continued									
Anthracene-d10	1719-06-8	0.5	%		**119**	**113**	**117**	**120**	**113**
4-Terphenyl-d14	1718-51-0	0.5	%		**121**	**115**	**118**	**122**	**115**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**84.0**	**98.2**	**104**	**99.2**	**101**
Toluene-D8	2037-26-5	0.2	%		**97.3**	**105**	**104**	**99.9**	**97.4**
4-Bromofluorobenzene	460-00-4	0.2	%		**106**	**116**	**114**	**111**	**108**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH4/0.3	BH5/0.5	BH6/2.0	BH7/1.0	BH7/1.3
			Client sampling date / time	09-Dec-2019 00:00	09-Dec-2019 00:00	09-Dec-2019 00:00	09-Dec-2019 00:00	09-Dec-2019 00:00
Compound	CAS Number	LOR	Unit	EW1905555-029	EW1905555-030	EW1905555-032	EW1905555-033	EW1905555-034
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	9.2	18.1	56.2	9.7	60.7
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	10	6	5	9	16
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	1
Chromium	7440-47-3	2	mg/kg	27	13	10	19	10
Copper	7440-50-8	5	mg/kg	10	12	840	20	259
Lead	7439-92-1	5	mg/kg	23	10	32	20	20
Nickel	7440-02-0	2	mg/kg	6	2	10	11	8
Zinc	7440-66-6	5	mg/kg	14	9	1240	40	1420
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	----	----	<5.0	----	----
EK055: Ammonia as N								
Ammonia as N	7664-41-7	20	mg/kg	----	----	7750	----	----
EP010: Formaldehyde								
Formaldehyde	50-00-0	2	mg/kg	----	----	4	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	<0.1	----	<0.1
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	<0.05	----	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	<0.05	----	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH4/0.3	BH5/0.5	BH6/2.0	BH7/1.0	BH7/1.3
				Client sampling date / time	09-Dec-2019 00:00	09-Dec-2019 00:00	09-Dec-2019 00:00	09-Dec-2019 00:00	09-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-029	EW1905555-030	EW1905555-032	EW1905555-033	EW1905555-034
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
Endrin	72-20-8	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	----	<0.2	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	----	<0.05	----	<0.05
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	----	<0.8	----	**2.2**
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	----	<0.8	----	<0.8

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH4/0.3	BH5/0.5	BH6/2.0	BH7/1.0	BH7/1.3
				Client sampling date / time	09-Dec-2019 00:00	09-Dec-2019 00:00	09-Dec-2019 00:00	09-Dec-2019 00:00	09-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-029	EW1905555-030	EW1905555-032	EW1905555-033	EW1905555-034
					Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued									
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	----	<0.8	----	<0.8
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	----	6	----	<2
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	----	<0.8	----	<0.8
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	----	<0.8	----	<0.8
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	----	<0.8	----	<0.8
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	----	<0.8	----	<0.8
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	----	<0.8	----	<0.8
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	----	<0.8	----	<0.8
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	----	<0.8	----	<0.8
Pentachlorophenol	87-86-5	2	mg/kg		<2	----	<2	----	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.8	<0.5	<0.8
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.8	<0.5	<0.8
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.8	<0.5	<0.8
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.8	<0.5	<0.8
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.8	<0.5	<0.8
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.8	<0.5	<0.8
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.8	<0.5	<0.8
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.8	<0.5	<0.8
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.8	<0.5	<0.8
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.8	<0.5	<0.8
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.8	<0.5	<0.8
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.8	<0.5	<0.8
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.8	<0.5	<0.8
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.8	<0.5	<0.8
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.8	<0.5	<0.8
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.8	<0.5	<0.8
^ 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	1.0	0.6	1.0
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	1.2	1.9	1.2	1.9
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH4/0.3	BH5/0.5	BH6/2.0	BH7/1.0	BH7/1.3
				Client sampling date / time	09-Dec-2019 00:00	09-Dec-2019 00:00	09-Dec-2019 00:00	09-Dec-2019 00:00	09-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-029	EW1905555-030	EW1905555-032	EW1905555-033	EW1905555-034
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C15 - C28 Fraction	----	100	mg/kg		<100	<100	**560**	<100	**730**
C29 - C36 Fraction	----	100	mg/kg		<100	<100	**760**	<100	**5870**
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	**1320**	<50	**6600**
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	**950**	<100	**4410**
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	**560**	<100	**2740**
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	**1510**	<50	**7150**
^ >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	%		**130**	----	**110**	----	**104**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**83.0**	----	**105**	----	**125**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**75.4**	----	**89.7**	----	**124**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**116**	**117**	**116**	**106**	**116**
2-Chlorophenol-D4	93951-73-6	0.5	%		**117**	**117**	**115**	**105**	**115**
2.4.6-Tribromophenol	118-79-6	0.5	%		**97.3**	**100**	**105**	**87.3**	**100**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**129**	**124**	**125**	**116**	**126**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH4/0.3	BH5/0.5	BH6/2.0	BH7/1.0	BH7/1.3
				Client sampling date / time	09-Dec-2019 00:00	09-Dec-2019 00:00	09-Dec-2019 00:00	09-Dec-2019 00:00	09-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-029	EW1905555-030	EW1905555-032	EW1905555-033	EW1905555-034
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates - Continued									
Anthracene-d10	1719-06-8	0.5	%		**118**	**118**	**120**	**112**	**119**
4-Terphenyl-d14	1718-51-0	0.5	%		**120**	**119**	**121**	**113**	**120**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**103**	**106**	**105**	**100**	**81.1**
Toluene-D8	2037-26-5	0.2	%		**98.7**	**106**	**94.8**	**98.4**	**80.6**
4-Bromofluorobenzene	460-00-4	0.2	%		**106**	**116**	**93.5**	**104**	**82.0**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH7/1.5	BH7/3.0	BH8/0.5	BH9/1.0	BH10/1.0
			Client sampling date / time	09-Dec-2019 00:00	09-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00
Compound	CAS Number	LOR	Unit	EW1905555-035	EW1905555-036	EW1905555-037	EW1905555-038	EW1905555-040
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	47.2	22.5	24.5	11.6	22.6
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	8	12	7	13	7
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	12	8	8	45	4
Copper	7440-50-8	5	mg/kg	533	119	13	24	14
Lead	7439-92-1	5	mg/kg	30	22	8	24	7
Nickel	7440-02-0	2	mg/kg	10	58	4	6	<2
Zinc	7440-66-6	5	mg/kg	959	268	16	26	8
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
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	----	----	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	----	----	<0.05

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH7/1.5	BH7/3.0	BH8/0.5	BH9/1.0	BH10/1.0
				Client sampling date / time	09-Dec-2019 00:00	09-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-035	EW1905555-036	EW1905555-037	EW1905555-038	EW1905555-040
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	----	----	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	----	----	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	----	----	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	----	----	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	----	----	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	----	----	<0.05
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	----	----	<1
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	<0.5	----	----	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH7/1.5	BH7/3.0	BH8/0.5	BH9/1.0	BH10/1.0
				Client sampling date / time	09-Dec-2019 00:00	09-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-035	EW1905555-036	EW1905555-037	EW1905555-038	EW1905555-040
					Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued									
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	<0.5	----	----	<0.5
Pentachlorophenol	87-86-5	2	mg/kg		<2	<2	----	----	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		**280**	**100**	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		**1570**	**340**	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		**1850**	**440**	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH7/1.5	BH7/3.0	BH8/0.5	BH9/1.0	BH10/1.0
				Client sampling date / time	09-Dec-2019 00:00	09-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-035	EW1905555-036	EW1905555-037	EW1905555-038	EW1905555-040
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ **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		**1260**	**320**	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		**740**	**160**	<100	<100	<100
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		**2000**	**480**	<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	%		**75.1**	**80.9**	----	----	**99.0**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**110**	**115**	----	----	**125**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		**113**	**78.8**	----	----	**72.1**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**114**	**116**	**119**	**112**	**113**
2-Chlorophenol-D4	93951-73-6	0.5	%		**113**	**116**	**119**	**113**	**113**
2.4.6-Tribromophenol	118-79-6	0.5	%		**102**	**102**	**99.6**	**91.5**	**90.3**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**124**	**125**	**127**	**123**	**125**
Anthracene-d10	1719-06-8	0.5	%		**116**	**116**	**120**	**113**	**116**
4-Terphenyl-d14	1718-51-0	0.5	%		**117**	**116**	**122**	**114**	**118**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**91.4**	**90.6**	**107**	**94.4**	**101**
Toluene-D8	2037-26-5	0.2	%		**88.0**	**89.3**	**98.7**	**91.2**	**96.9**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH7/1.5	BH7/3.0	BH8/0.5	BH9/1.0	BH10/1.0
				Client sampling date / time	09-Dec-2019 00:00	09-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-035	EW1905555-036	EW1905555-037	EW1905555-038	EW1905555-040
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	0.2	%		**94.6**	**96.1**	**107**	**98.9**	**103**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH10/2.8	BH11/0.5	BHDUP1/0.5	BH12/0.2	BH13/0.2
			Client sampling date / time	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00
Compound	CAS Number	LOR	Unit	EW1905555-041	EW1905555-042	EW1905555-043	EW1905555-045	EW1905555-046
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	14.9	15.2	12.7	15.9	22.3
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	6	8	9	6	8
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	7	18	17	12	21
Copper	7440-50-8	5	mg/kg	11	20	23	20	29
Lead	7439-92-1	5	mg/kg	14	27	51	35	37
Nickel	7440-02-0	2	mg/kg	12	11	11	9	13
Zinc	7440-66-6	5	mg/kg	40	50	57	47	80
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EG048: Hexavalent Chromium (Alkaline Digest)								
Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	----	----	----	----
EK055: Ammonia as N								
Ammonia as N	7664-41-7	20	mg/kg	<20	----	----	----	----
EP010: Formaldehyde								
Formaldehyde	50-00-0	2	mg/kg	<8	----	----	----	----
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

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH10/2.8	BH11/0.5	BHDUP1/0.5	BH12/0.2	BH13/0.2
				Client sampling date / time	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-041	EW1905555-042	EW1905555-043	EW1905555-045	EW1905555-046
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
Endrin	72-20-8	0.05	mg/kg		----	----	----	----	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		----	----	----	----	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		----	----	----	----	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		----	----	----	----	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		----	----	----	----	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		----	----	----	----	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		----	----	----	----	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		----	----	----	----	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		----	----	----	----	<0.2
^ 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

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH10/2.8	BH11/0.5	BHDUP1/0.5	BH12/0.2	BH13/0.2
				Client sampling date / time	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-041	EW1905555-042	EW1905555-043	EW1905555-045	EW1905555-046
					Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued									
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
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	----	----	----	----	----	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	----	----	----	----	----	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	----	----	----	----	----	<0.5
Pentachlorophenol	87-86-5	2	mg/kg	----	----	----	----	----	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	**0.7**	<0.5	
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	**0.9**	<0.5	
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	**0.9**	<0.5	
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	<0.5	**13.9**	<0.5	
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	**4.7**	<0.5	
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	<0.5	**19.6**	**0.6**	
Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	<0.5	**21.0**	**0.7**	
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	<0.5	**11.3**	<0.5	
Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	<0.5	**11.0**	<0.5	
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	<0.5	**11.4**	**0.5**	
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	<0.5	**4.2**	<0.5	
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	<0.5	**11.1**	**0.5**	
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	<0.5	**3.3**	<0.5	
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	**1.2**	<0.5	
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	<0.5	**3.8**	<0.5	
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	<0.5	**119**	**2.3**	
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	<0.5	**15.5**	**0.6**	
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	**0.6**	**0.6**	**15.5**	**0.9**	
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	**1.2**	**1.2**	**15.5**	**1.2**	
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	<10	<10	
C10 - C14 Fraction	----	50	mg/kg	<50	<50	<50	<50	<50	

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH10/2.8	BH11/0.5	BHDUP1/0.5	BH12/0.2	BH13/0.2
				Client sampling date / time	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-041	EW1905555-042	EW1905555-043	EW1905555-045	EW1905555-046
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	**630**	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	**760**	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	**1390**	<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	**1100**	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	**760**	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	**1860**	<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	%		----	----	----	----	**98.6**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	----	----	**115**
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	----	----	**71.1**
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**125**	**119**	**124**	**106**	**120**
2-Chlorophenol-D4	93951-73-6	0.5	%		**124**	**117**	**125**	**107**	**120**
2.4.6-Tribromophenol	118-79-6	0.5	%		**83.7**	**89.5**	**93.2**	**90.0**	**91.9**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**117**	**122**	**125**	**118**	**125**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH10/2.8	BH11/0.5	BHDUP1/0.5	BH12/0.2	BH13/0.2
				Client sampling date / time	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-041	EW1905555-042	EW1905555-043	EW1905555-045	EW1905555-046
					Result	Result	Result	Result	Result
EP075(SIM)T: PAH Surrogates - Continued									
Anthracene-d10	1719-06-8	0.5	%		**126**	**123**	**126**	**107**	**122**
4-Terphenyl-d14	1718-51-0	0.5	%		**127**	**126**	**125**	**109**	**125**
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**103**	**102**	**104**	**115**	**103**
Toluene-D8	2037-26-5	0.2	%		**95.3**	**102**	**89.4**	**102**	**92.0**
4-Bromofluorobenzene	460-00-4	0.2	%		**105**	**101**	**99.2**	**107**	**98.4**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH29/0.3	BHDUP3/0.3	BH30/0.5	BH31/0.5	BH32/0.3
			Client sampling date / time	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00
Compound	CAS Number	LOR	Unit	EW1905555-047	EW1905555-048	EW1905555-049	EW1905555-050	EW1905555-051
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	12.9	5.5	11.4	8.3	9.4
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	14	13	9	13	12
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	42	28	15	27	28
Copper	7440-50-8	5	mg/kg	9	11	23	10	15
Lead	7439-92-1	5	mg/kg	32	29	32	18	24
Nickel	7440-02-0	2	mg/kg	6	5	14	4	9
Zinc	7440-66-6	5	mg/kg	24	26	87	14	41
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	----	----
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: SOIL (Matrix: SOIL)				Client sample ID	BH29/0.3	BHDUP3/0.3	BH30/0.5	BH31/0.5	BH32/0.3
				Client sampling date / time	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-047	EW1905555-048	EW1905555-049	EW1905555-050	EW1905555-051
					Result	Result	Result	Result	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: SOIL (Matrix: SOIL)				Client sample ID	BH29/0.3	BHDUP3/0.3	BH30/0.5	BH31/0.5	BH32/0.3
				Client sampling date / time	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-047	EW1905555-048	EW1905555-049	EW1905555-050	EW1905555-051
					Result	Result	Result	Result	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	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	**130**	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	**150**	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	**280**	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH29/0.3	BHDUP3/0.3	BH30/0.5	BH31/0.5	BH32/0.3
				Client sampling date / time	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-047	EW1905555-048	EW1905555-049	EW1905555-050	EW1905555-051
					Result	Result	Result	Result	Result
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
^ 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	240	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	240	<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	%		----	----	117	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		----	----	122	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		----	----	80.7	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		105	107	124	97.8	97.5
2-Chlorophenol-D4	93951-73-6	0.5	%		106	106	124	98.9	98.4
2.4.6-Tribromophenol	118-79-6	0.5	%		88.9	89.9	103	80.6	77.1
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		117	118	112	110	109
Anthracene-d10	1719-06-8	0.5	%		107	107	125	102	100
4-Terphenyl-d14	1718-51-0	0.5	%		106	107	123	100.0	100
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		103	96.2	103	99.1	106
Toluene-D8	2037-26-5	0.2	%		109	100	107	103	108

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	BH29/0.3	BHDUP3/0.3	BH30/0.5	BH31/0.5	BH32/0.3
				Client sampling date / time	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		EW1905555-047	EW1905555-048	EW1905555-049	EW1905555-050	EW1905555-051
					Result	Result	Result	Result	Result
EP080S: TPH(V)/BTEX Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	0.2	%		**110**	**102**	**110**	**106**	**112**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	SP1	SP2	SP3	----	----
			Client sampling date / time	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	----	----
Compound	CAS Number	LOR	Unit	EW1905555-052	EW1905555-053	EW1905555-054	--------	--------
				Result	Result	Result	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	6.2	4.6	7.1	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	6	<5	----	----
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	----	----
Chromium	7440-47-3	2	mg/kg	10	13	11	----	----
Copper	7440-50-8	5	mg/kg	14	19	24	----	----
Lead	7439-92-1	5	mg/kg	19	123	108	----	----
Nickel	7440-02-0	2	mg/kg	6	7	6	----	----
Zinc	7440-66-6	5	mg/kg	67	167	231	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.1	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	0.8	1.7	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	1.3	3.3	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	1.3	3.2	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	0.6	1.5	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	0.6	1.5	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	0.6	1.4	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.7	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	0.6	1.4	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.5	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	<0.5	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.6	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	5.8	15.8	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	0.7	1.8	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	1.0	2.1	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	1.3	2.3	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	<10	<10	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SP1	SP2	SP3	----	----
				Client sampling date / time	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	----	----
Compound	CAS Number	LOR	Unit		EW1905555-052	EW1905555-053	EW1905555-054	--------	--------
					Result	Result	Result	----	----
EP080/071: Total Petroleum Hydrocarbons - Continued									
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	<100	**120**	----	----
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		<50	<50	**120**	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	<10	<10	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	**150**	**180**	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	----	----
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	**150**	**180**	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	<50	<50	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
^ **Sum of BTEX**	----	0.2	mg/kg		<0.2	<0.2	<0.2	----	----
^ **Total Xylenes**	----	0.5	mg/kg		<0.5	<0.5	<0.5	----	----
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		**98.1**	**98.1**	**116**	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		**98.5**	**98.5**	**116**	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%		**79.5**	**80.3**	**91.8**	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		**110**	**110**	**126**	----	----
Anthracene-d10	1719-06-8	0.5	%		**100.0**	**101**	**119**	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		**98.4**	**99.3**	**117**	----	----
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		**102**	**109**	**104**	----	----
Toluene-D8	2037-26-5	0.2	%		**106**	**112**	**111**	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	SP1	SP2	SP3	----	----
				Client sampling date / time	11-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00	----	----
Compound	CAS Number	LOR	Unit		EW1905555-052	EW1905555-053	EW1905555-054	--------	--------
					Result	Result	Result	----	----
EP080S: TPH(V)/BTEX Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	0.2	%		**109**	**117**	**112**	**----**	**----**

Surrogate Control Limits

Sub-Matrix: **SOIL**

Compound	CAS Number	Recovery Limits (%) 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

Fadi Soro

Fadi 20/1/20 1:45p

From: Aneta Prosaroski
Sent: Monday, 20 January 2020 1:22 PM
To: Fadi Soro
Cc: Loren Schiavon
Subject: FW: [EXTERNAL] - EW1905555 TCLP Analysis - ENRS0197

Hi Fadi,

Can you please rebatch the below request

Regards,

Aneta Prosaroski

Client Services Officer, Environmental
Wollongong

T +61 2 4225 3125
aneta.prosaroski@alsglobal.com
Unit1, 19-21 Ralph Black Drive
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AUSTRALIA

Environmental Division
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Work Order Reference
ES2001699

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Right Solutions · Right Partner
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S235-237
#36, 45, 1, 53, 54

From: Chris Allen [mailto:chris@enrs.com.au]
Sent: Monday, 20 January 2020 1:17 PM
To: ALS Wollongong <Wollongong@alsglobal.com>
Subject: [EXTERNAL] - EW1905555 TCLP Analysis - ENRS0197

CAUTION: This email originated from outside of ALS. Do not click links or open attachments unless you recognize the sender and are sure content is relevant to you.

Good afternoon guys,

Can I please book in TCLP analysis for the following samples from the above workorder (EW1905555);

1 - BH7/3.0 (Nickel) ✓
2 - BH12/0.2 (Benzo(a)pyrene) ✓
3 - BH14/0.2 (Benzo(a)pyrene) ✓
4 - SP2 (Lead) ✓
5 - SP3 (Benzo(a)pyrene and lead) ✓

With regards,

Christopher Allen
Environmental Scientist & Consultant
Environment & Natural Resource Solutions
ENRS Pty Ltd ABN 68 600 154 596
108 Jerry Bailey Road Shoalhaven Heads NSW 2535
T 02 9037 4708 & 02 4448 5490
M 0478 725 692
www.enrs.com.au

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2001699**	Page	: 1 of 5
Client	: **ENVIRONMENT & NATURAL RESOURCE SOLUTIONS**	Laboratory	: Environmental Division Sydney
Contact	: chris Allen	Contact	: Aneta Prosaroski
Address	: 25 River Rd Shoalhaven Heads 2535	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61 2 4225 3125
Project	: ENRS0197 - 61 Farm Road, Riverstone	Date Samples Received	: 19-Dec-2019 10:38
Order number	: ENRS0197	Date Analysis Commenced	: 22-Jan-2020
C-O-C number	: ----	Issue Date	: 28-Jan-2020 17:07
Sampler	: ----		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 5		
No. of samples analysed	: 5		

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

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

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

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

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

- 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.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	BH7/3.0	BH12/0.2	BH14/0.2	SP2	SP3
			Client sampling date / time	09-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00
Compound	CAS Number	LOR	Unit	ES2001699-001	ES2001699-002	ES2001699-003	ES2001699-004	ES2001699-005
				Result	Result	Result	Result	Result
EN33: TCLP Leach								
Initial pH	----	0.1	pH Unit	**8.6**	**9.1**	**9.2**	**8.5**	**8.6**
After HCl pH	----	0.1	pH Unit	**1.4**	**1.6**	**1.6**	**2.4**	**2.5**
Extraction Fluid Number	----	1	-	**1**	**1**	**1**	**1**	**1**
Final pH	----	0.1	pH Unit	**5.1**	**5.7**	**5.3**	**6.0**	**6.2**

Analytical Results

Sub-Matrix: TCLP LEACHATE (Matrix: WATER)				Client sample ID	BH7/3.0	BH12/0.2	BH14/0.2	SP2	SP3
				Client sampling date / time	09-Dec-2019 00:00	10-Dec-2019 00:00	10-Dec-2019 00:00	11-Dec-2019 00:00	11-Dec-2019 00:00
Compound	CAS Number	LOR	Unit		ES2001699-001	ES2001699-002	ES2001699-003	ES2001699-004	ES2001699-005
					Result	Result	Result	Result	Result
EG005(ED093)C: Leachable Metals by ICPAES									
Lead	7439-92-1	0.1	mg/L		----	----	----	<0.1	<0.1
Nickel	7440-02-0	0.1	mg/L		<0.1	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Benzo(a)pyrene	50-32-8	0.5	µg/L		----	<0.5	<0.5	----	<0.5
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		----	**26.5**	**26.6**	----	**25.6**
2-Chlorophenol-D4	93951-73-6	1.0	%		----	**57.9**	**56.6**	----	**57.4**
2.4.6-Tribromophenol	118-79-6	1.0	%		----	**69.3**	**66.5**	----	**61.2**
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		----	**78.3**	**79.0**	----	**72.7**
Anthracene-d10	1719-06-8	1.0	%		----	**83.1**	**84.8**	----	**81.4**
4-Terphenyl-d14	1718-51-0	1.0	%		----	**84.4**	**85.3**	----	**82.4**

Surrogate Control Limits

Sub-Matrix: **TCLP LEACHATE**

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

Appendix B

Laboratory QA/QC Assessments

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EW1905555**	Page	: 1 of 18
Client	: **ENVIRONMENT & NATURAL RESOURCE SOLUTIONS**	Laboratory	: Environmental Division NSW South Coast
Contact	: chris Allen	Telephone	: +61 2 4225 3125
Project	: ENRS0197 - 61 Farm Road, Riverstone	Date Samples Received	: 19-Dec-2019
Site	: ----	Issue Date	: 02-Jan-2020
Sampler	: chris Allen, Tamika Flanigan	No. of samples received	: 54
Order number	: ENRS0197	No. of samples analysed	: 48

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

Outliers : Analysis Holding Time Compliance

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

Outliers : Frequency of Quality Control Samples

- **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-2777718-002	----	**Pentachlorophenol**	87-86-5	60.4 %	10.0-57.0%	**Recovery greater than upper control limit**
EP075(SIM)A: Phenolic Compounds	QC-2778104-002	----	**Pentachlorophenol**	87-86-5	60.9 %	10.0-57.0%	**Recovery greater than upper control limit**
Matrix Spike (MS) Recoveries							
EG048: Hexavalent Chromium (Alkaline Digest)	ES1942348--001	Anonymous	**Hexavalent Chromium**	18540-29-9	18.6 %	70.0-130%	**Recovery less than lower data quality objective**
EG048: Hexavalent Chromium (Alkaline Digest)	ES1942348--001	Anonymous	**Hexavalent Chromium**	18540-29-9	18.0 %	70.0-130%	**Recovery less than lower data quality objective**

Regular Sample Surrogates

Sub-Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted							
EP075(SIM)S: Phenolic Compound Surrogates	EW1905555-041	BH10/2.8	**Phenol-d6**	13127-88-3	125 %	63.0-123 %	**Recovery greater than upper data quality objective**
EP075(SIM)S: Phenolic Compound Surrogates	EW1905555-043	BHDUP1/0.5	**Phenol-d6**	13127-88-3	124 %	63.0-123 %	**Recovery greater than upper data quality objective**
EP075(SIM)S: Phenolic Compound Surrogates	EW1905555-049	BH30/0.5	**Phenol-d6**	13127-88-3	124 %	63.0-123 %	**Recovery greater than upper data quality objective**
EP075(SIM)S: Phenolic Compound Surrogates	EW1905555-041	BH10/2.8	**2-Chlorophenol-D4**	93951-73-6	124 %	66.0-122 %	**Recovery greater than upper data quality objective**
EP075(SIM)S: Phenolic Compound Surrogates	EW1905555-043	BHDUP1/0.5	**2-Chlorophenol-D4**	93951-73-6	125 %	66.0-122 %	**Recovery greater than upper data quality objective**
EP075(SIM)S: Phenolic Compound Surrogates	EW1905555-049	BH30/0.5	**2-Chlorophenol-D4**	93951-73-6	124 %	66.0-122 %	**Recovery greater than upper data quality objective**
EP075(SIM)T: PAH Surrogates	EW1905555-001	BH14/0.2	**2-Fluorobiphenyl**	321-60-8	124 %	70.0-122 %	**Recovery greater than upper data quality objective**
EP075(SIM)T: PAH Surrogates	EW1905555-025	BH1/0.5	**2-Fluorobiphenyl**	321-60-8	124 %	70.0-122 %	**Recovery greater than upper data quality objective**
EP075(SIM)T: PAH Surrogates	EW1905555-027	BH2/0.5	**2-Fluorobiphenyl**	321-60-8	126 %	70.0-122 %	**Recovery greater than upper data quality objective**
EP075(SIM)T: PAH Surrogates	EW1905555-028	BH3/0.8	**2-Fluorobiphenyl**	321-60-8	123 %	70.0-122 %	**Recovery greater than upper data quality objective**
EP075(SIM)T: PAH Surrogates	EW1905555-029	BH4/0.3	**2-Fluorobiphenyl**	321-60-8	129 %	70.0-122 %	**Recovery greater than upper data quality objective**
EP075(SIM)T: PAH Surrogates	EW1905555-030	BH5/0.5	**2-Fluorobiphenyl**	321-60-8	124 %	70.0-122 %	**Recovery greater than upper data quality objective**
EP075(SIM)T: PAH Surrogates	EW1905555-032	BH6/2.0	**2-Fluorobiphenyl**	321-60-8	125 %	70.0-122 %	**Recovery greater than upper data quality objective**

Sub-Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Samples Submitted - Continued							
EP075(SIM)T: PAH Surrogates	EW1905555-034	BH7/1.3	**2-Fluorobiphenyl**	321-60-8	126 %	70.0-122 %	**Recovery greater than upper data quality objective**
EP075(SIM)T: PAH Surrogates	EW1905555-035	BH7/1.5	**2-Fluorobiphenyl**	321-60-8	124 %	70.0-122 %	**Recovery greater than upper data quality objective**
EP075(SIM)T: PAH Surrogates	EW1905555-036	BH7/3.0	**2-Fluorobiphenyl**	321-60-8	125 %	70.0-122 %	**Recovery greater than upper data quality objective**
EP075(SIM)T: PAH Surrogates	EW1905555-037	BH8/0.5	**2-Fluorobiphenyl**	321-60-8	127 %	70.0-122 %	**Recovery greater than upper data quality objective**
EP075(SIM)T: PAH Surrogates	EW1905555-038	BH9/1.0	**2-Fluorobiphenyl**	321-60-8	123 %	70.0-122 %	**Recovery greater than upper data quality objective**
EP075(SIM)T: PAH Surrogates	EW1905555-040	BH10/1.0	**2-Fluorobiphenyl**	321-60-8	125 %	70.0-122 %	**Recovery greater than upper data quality objective**
EP075(SIM)T: PAH Surrogates	EW1905555-054	SP3	**2-Fluorobiphenyl**	321-60-8	126 %	70.0-122 %	**Recovery greater than upper data quality objective**
EP075(SIM)T: PAH Surrogates	EW1905555-043	BHDUP1/0.5	**2-Fluorobiphenyl**	321-60-8	125 %	70.0-122 %	**Recovery greater than upper data quality objective**
EP075(SIM)T: PAH Surrogates	EW1905555-046	BH13/0.2	**2-Fluorobiphenyl**	321-60-8	125 %	70.0-122 %	**Recovery greater than upper data quality objective**
EP080S: TPH(V)/BTEX Surrogates	EW1905555-014	BH22/1.5	**1.2-Dichloroethane-D4**	17060-07-0	68.8 %	72.8-133 %	**Recovery less than lower data quality objective**
EP080S: TPH(V)/BTEX Surrogates	EW1905555-014	BH22/1.5	**Toluene-D8**	2037-26-5	71.8 %	73.9-132 %	**Recovery less than lower data quality objective**

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*

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)								
BH1/0.5,	BH2/0.5,	**09-Dec-2019**	**----**	----	----	**20-Dec-2019**	23-Dec-2019	✓
BH3/0.8,	BH4/0.3,							
BH5/0.5,	BH6/2.0,							
BH7/1.0,	BH7/1.3,							
BH7/1.5,	BH7/3.0							
Soil Glass Jar - Unpreserved (EA055)								
BH14/0.2,	BH15/0.5,	**10-Dec-2019**	**----**	----	----	**20-Dec-2019**	24-Dec-2019	✓
BH16/1.0,	BH17/0.5,							
BH18/1.0,	BH19/1.0,							
BH19/2.0,	BH20/0.5,							
BH21/0.5,	BHDUP2/0.5,							
BH21/1.0,	BH21/2.5,							
BH8/0.5,	BH9/1.0,							
BH10/1.0,	BH10/2.8,							
BH11/0.5,	BHDUP1/0.5,							
BH12/0.2,	BH13/0.2							
Soil Glass Jar - Unpreserved (EA055)								
BH22/0.5,	BH22/1.5,	**11-Dec-2019**	**----**	----	----	**20-Dec-2019**	25-Dec-2019	✓
BH23/0.5,	BH23/1.5,							
BH24/0.5,	BH24/1.5,							
BH25/2.5,	BH26/0.5,							
BH27/0.5,	BH28/0.5							
Soil Glass Jar - Unpreserved (EA055)								
BH29/0.3,	BHDUP3/0.3,	**11-Dec-2019**	**----**	----	----	**23-Dec-2019**	25-Dec-2019	✓
BH30/0.5,	BH31/0.5,							
BH32/0.3,	SP1,							
SP2,	SP3							

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
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
BH1/0.5, BH2/0.5, BH3/0.8, BH4/0.3, BH5/0.5, BH6/2.0, BH7/1.0, BH7/1.3, BH7/1.5, BH7/3.0	**09-Dec-2019**	**20-Dec-2019**	06-Jun-2020	✓	**23-Dec-2019**	06-Jun-2020	✓
Soil Glass Jar - Unpreserved (EG005T)							
BH14/0.2, BH15/0.5, BH16/1.0, BH17/0.5, BH18/1.0, BH19/1.0, BH19/2.0, BH20/0.5, BH21/0.5, BHDUP2/0.5, BH21/1.0, BH21/2.5, BH8/0.5, BH9/1.0, BH10/1.0, BH10/2.8, BH11/0.5, BHDUP1/0.5, BH12/0.2, BH13/0.2	**10-Dec-2019**	**20-Dec-2019**	07-Jun-2020	✓	**23-Dec-2019**	07-Jun-2020	✓
Soil Glass Jar - Unpreserved (EG005T)							
BH22/0.5, BH22/1.5, BH23/0.5, BH23/1.5, BH24/0.5, BH24/1.5, BH25/2.5, BH26/0.5, BH27/0.5, BH28/0.5	**11-Dec-2019**	**20-Dec-2019**	08-Jun-2020	✓	**23-Dec-2019**	08-Jun-2020	✓
Soil Glass Jar - Unpreserved (EG005T)							
BH29/0.3, BHDUP3/0.3, BH30/0.5, BH31/0.5, BH32/0.3, SP1, SP2, SP3	**11-Dec-2019**	**23-Dec-2019**	08-Jun-2020	✓	**23-Dec-2019**	08-Jun-2020	✓

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)								
BH1/0.5,	BH2/0.5,	**09-Dec-2019**	**20-Dec-2019**	06-Jan-2020	✓	**24-Dec-2019**	06-Jan-2020	✓
BH3/0.8,	BH4/0.3,							
BH5/0.5,	BH6/2.0,							
BH7/1.0,	BH7/1.3,							
BH7/1.5,	BH7/3.0							
Soil Glass Jar - Unpreserved (EG035T)								
BH14/0.2,	BH15/0.5,	**10-Dec-2019**	**20-Dec-2019**	07-Jan-2020	✓	**24-Dec-2019**	07-Jan-2020	✓
BH16/1.0,	BH17/0.5,							
BH18/1.0,	BH19/1.0,							
BH19/2.0,	BH20/0.5,							
BH21/0.5,	BHDUP2/0.5,							
BH21/1.0,	BH21/2.5,							
BH8/0.5,	BH9/1.0,							
BH10/1.0,	BH10/2.8,							
BH11/0.5,	BHDUP1/0.5,							
BH12/0.2,	BH13/0.2							
Soil Glass Jar - Unpreserved (EG035T)								
BH22/0.5,	BH22/1.5,	**11-Dec-2019**	**20-Dec-2019**	08-Jan-2020	✓	**24-Dec-2019**	08-Jan-2020	✓
BH23/0.5,	BH23/1.5,							
BH24/0.5,	BH24/1.5,							
BH25/2.5,	BH26/0.5,							
BH27/0.5,	BH28/0.5							
Soil Glass Jar - Unpreserved (EG035T)								
BH29/0.3,	BHDUP3/0.3,	**11-Dec-2019**	**23-Dec-2019**	08-Jan-2020	✓	**24-Dec-2019**	08-Jan-2020	✓
BH30/0.5,	BH31/0.5,							
BH32/0.3,	SP1,							
SP2,	SP3							
EG048: Hexavalent Chromium (Alkaline Digest)								
Soil Glass Jar - Unpreserved (EG048G)								
BH1/0.5,	BH6/2.0	**09-Dec-2019**	**27-Dec-2019**	06-Jan-2020	✓	**28-Dec-2019**	03-Jan-2020	✓
Soil Glass Jar - Unpreserved (EG048G)								
BH17/0.5,	BH19/1.0,	**10-Dec-2019**	**27-Dec-2019**	07-Jan-2020	✓	**28-Dec-2019**	03-Jan-2020	✓
BH19/2.0,	BH21/0.5,							
BH21/2.5,	BH10/2.8							
Soil Glass Jar - Unpreserved (EG048G)								
BH22/0.5,	BH22/1.5,	**11-Dec-2019**	**27-Dec-2019**	08-Jan-2020	✓	**28-Dec-2019**	03-Jan-2020	✓
BH23/0.5,	BH23/1.5,							
BH24/0.5,	BH24/1.5,							
BH26/0.5								

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK055: Ammonia as N							
Soil Glass Jar - Unpreserved (EK055)							
BH1/0.5, BH6/2.0	**09-Dec-2019**	**----**	----	----	**31-Dec-2019**	06-Jun-2020	✓
Soil Glass Jar - Unpreserved (EK055)							
BH17/0.5, BH19/1.0, BH19/2.0, BH21/0.5, BH21/2.5, BH10/2.8	**10-Dec-2019**	**----**	----	----	**31-Dec-2019**	07-Jun-2020	✓
Soil Glass Jar - Unpreserved (EK055)							
BH22/0.5, BH22/1.5, BH23/0.5, BH23/1.5, BH24/0.5, BH24/1.5, BH26/0.5	**11-Dec-2019**	**----**	----	----	**31-Dec-2019**	08-Jun-2020	✓
EP010: Formaldehyde							
Soil Glass Jar - Unpreserved (EP010)							
BH1/0.5	**09-Dec-2019**	**20-Dec-2019**	06-Jun-2020	✓	**23-Dec-2019**	06-Jun-2020	✓
Soil Glass Jar - Unpreserved (EP010)							
BH6/2.0	**09-Dec-2019**	**23-Dec-2019**	06-Jun-2020	✓	**23-Dec-2019**	06-Jun-2020	✓
Soil Glass Jar - Unpreserved (EP010)							
BH17/0.5, BH19/1.0, BH19/2.0, BH21/0.5, BH21/2.5, BH10/2.8	**10-Dec-2019**	**23-Dec-2019**	07-Jun-2020	✓	**23-Dec-2019**	07-Jun-2020	✓
Soil Glass Jar - Unpreserved (EP010)							
BH22/0.5, BH22/1.5, BH23/0.5, BH23/1.5, BH24/0.5, BH24/1.5, BH26/0.5	**11-Dec-2019**	**23-Dec-2019**	08-Jun-2020	✓	**23-Dec-2019**	08-Jun-2020	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066)							
BH2/0.5, BH4/0.3, BH6/2.0, BH7/1.3, BH7/1.5, BH7/3.0	**09-Dec-2019**	**20-Dec-2019**	23-Dec-2019	✓	**23-Dec-2019**	29-Jan-2020	✓
Soil Glass Jar - Unpreserved (EP066)							
BH15/0.5, BH19/1.0, BH21/0.5, BH21/1.0, BH10/1.0, BH13/0.2	**10-Dec-2019**	**20-Dec-2019**	24-Dec-2019	✓	**23-Dec-2019**	29-Jan-2020	✓
Soil Glass Jar - Unpreserved (EP066)							
BH22/0.5, BH23/1.5, BH24/0.5, BH25/2.5, BH28/0.5, BH30/0.5	**11-Dec-2019**	**20-Dec-2019**	25-Dec-2019	✓	**23-Dec-2019**	29-Jan-2020	✓

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) BH2/0.5, BH4/0.3, BH6/2.0, BH7/1.3, BH7/1.5, BH7/3.0	**09-Dec-2019**	**20-Dec-2019**	23-Dec-2019	✓	**23-Dec-2019**	29-Jan-2020	✓
Soil Glass Jar - Unpreserved (EP068) BH15/0.5, BH19/1.0, BH21/0.5, BH21/1.0, BH10/1.0, BH13/0.2	**10-Dec-2019**	**20-Dec-2019**	24-Dec-2019	✓	**23-Dec-2019**	29-Jan-2020	✓
Soil Glass Jar - Unpreserved (EP068) BH22/0.5, BH23/1.5, BH24/0.5, BH25/2.5, BH28/0.5, BH30/0.5	**11-Dec-2019**	**20-Dec-2019**	25-Dec-2019	✓	**23-Dec-2019**	29-Jan-2020	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068) BH2/0.5, BH4/0.3, BH6/2.0, BH7/1.3, BH7/1.5, BH7/3.0	**09-Dec-2019**	**20-Dec-2019**	23-Dec-2019	✓	**23-Dec-2019**	29-Jan-2020	✓
Soil Glass Jar - Unpreserved (EP068) BH15/0.5, BH19/1.0, BH21/0.5, BH21/1.0, BH10/1.0, BH13/0.2	**10-Dec-2019**	**20-Dec-2019**	24-Dec-2019	✓	**23-Dec-2019**	29-Jan-2020	✓
Soil Glass Jar - Unpreserved (EP068) BH22/0.5, BH23/1.5, BH24/0.5, BH25/2.5, BH28/0.5, BH30/0.5	**11-Dec-2019**	**20-Dec-2019**	25-Dec-2019	✓	**23-Dec-2019**	29-Jan-2020	✓
EP075(SIM)A: Phenolic Compounds							
Soil Glass Jar - Unpreserved (EP075(SIM)) BH2/0.5, BH4/0.3, BH6/2.0, BH7/1.3, BH7/1.5, BH7/3.0	**09-Dec-2019**	**20-Dec-2019**	23-Dec-2019	✓	**22-Dec-2019**	29-Jan-2020	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) BH15/0.5, BH19/1.0, BH21/0.5, BH21/1.0, BH10/1.0, BH13/0.2	**10-Dec-2019**	**20-Dec-2019**	24-Dec-2019	✓	**22-Dec-2019**	29-Jan-2020	✓
Soil Glass Jar - Unpreserved (EP075(SIM)) BH22/0.5, BH23/1.5, BH24/0.5, BH25/2.5, BH28/0.5, BH30/0.5	**11-Dec-2019**	**20-Dec-2019**	25-Dec-2019	✓	**22-Dec-2019**	29-Jan-2020	✓

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
BH1/0.5, BH2/0.5, BH3/0.8, BH4/0.3, BH5/0.5, BH6/2.0, BH7/1.0, BH7/1.3, BH7/1.5, BH7/3.0	**09-Dec-2019**	**20-Dec-2019**	23-Dec-2019	✓	**22-Dec-2019**	29-Jan-2020	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
BH14/0.2, BH15/0.5, BH16/1.0, BH17/0.5, BH18/1.0, BH19/1.0, BH19/2.0, BH20/0.5, BH21/0.5, BHDUP2/0.5, BH21/1.0, BH21/2.5, BH8/0.5, BH9/1.0, BH10/1.0, BH10/2.8, BH11/0.5, BHDUP1/0.5, BH13/0.2	**10-Dec-2019**	**20-Dec-2019**	24-Dec-2019	✓	**22-Dec-2019**	29-Jan-2020	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
BH12/0.2	**10-Dec-2019**	**20-Dec-2019**	24-Dec-2019	✓	**23-Dec-2019**	29-Jan-2020	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
BH22/0.5, BH22/1.5, BH23/0.5, BH23/1.5, BH24/0.5, BH24/1.5, BH25/2.5, BH26/0.5, BH27/0.5, BH28/0.5, BH30/0.5	**11-Dec-2019**	**20-Dec-2019**	25-Dec-2019	✓	**22-Dec-2019**	29-Jan-2020	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
BH29/0.3, BHDUP3/0.3, BH31/0.5, BH32/0.3, SP1, SP2, SP3	**11-Dec-2019**	**20-Dec-2019**	25-Dec-2019	✓	**23-Dec-2019**	29-Jan-2020	✓

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)							
BH1/0.5, BH2/0.5, BH3/0.8, BH4/0.3, BH5/0.5, BH6/2.0, BH7/1.0, BH7/1.3, BH7/1.5, BH7/3.0	**09-Dec-2019**	**20-Dec-2019**	23-Dec-2019	✓	**22-Dec-2019**	29-Jan-2020	✓
Soil Glass Jar - Unpreserved (EP080)							
BH1/0.5, BH2/0.5, BH3/0.8, BH4/0.3, BH5/0.5, BH6/2.0, BH7/1.0, BH7/1.3, BH7/1.5, BH7/3.0	**09-Dec-2019**	**20-Dec-2019**	23-Dec-2019	✓	**23-Dec-2019**	23-Dec-2019	✓
Soil Glass Jar - Unpreserved (EP071)							
BH14/0.2, BH15/0.5, BH16/1.0, BH17/0.5, BH18/1.0, BH19/1.0, BH19/2.0, BH20/0.5, BH21/0.5, BHDUP2/0.5, BH21/1.0, BH21/2.5, BH8/0.5, BH9/1.0, BH10/1.0, BH10/2.8, BH11/0.5, BHDUP1/0.5, BH12/0.2, BH13/0.2	**10-Dec-2019**	**20-Dec-2019**	24-Dec-2019	✓	**22-Dec-2019**	29-Jan-2020	✓
Soil Glass Jar - Unpreserved (EP080)							
BH14/0.2, BH15/0.5, BH16/1.0, BH17/0.5, BH18/1.0, BH19/1.0, BH19/2.0, BH20/0.5, BH21/0.5, BHDUP2/0.5, BH21/1.0, BH21/2.5, BH8/0.5, BH9/1.0, BH10/1.0, BH10/2.8, BH11/0.5, BHDUP1/0.5, BH12/0.2, BH13/0.2	**10-Dec-2019**	**20-Dec-2019**	24-Dec-2019	✓	**23-Dec-2019**	24-Dec-2019	✓
Soil Glass Jar - Unpreserved (EP071)							

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)		Sample Date	Extraction / Preparation			Analysis		
			Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Petroleum Hydrocarbons - Continued								
BH22/0.5,	BH22/1.5,	**11-Dec-2019**	**20-Dec-2019**	25-Dec-2019	✓	**22-Dec-2019**	29-Jan-2020	✓
BH23/0.5,	BH23/1.5,							
BH24/0.5,	BH24/1.5,							
BH25/2.5,	BH26/0.5,							
BH27/0.5,	BH28/0.5,							
BH29/0.3,	BHDUP3/0.3,							
BH30/0.5,	BH31/0.5,							
BH32/0.3,	SP1,							
SP2,	SP3							
Soil Glass Jar - Unpreserved (EP080)								
BH22/0.5,	BH22/1.5,	**11-Dec-2019**	**20-Dec-2019**	25-Dec-2019	✓	**23-Dec-2019**	25-Dec-2019	✓
BH23/0.5,	BH23/1.5,							
BH24/0.5,	BH24/1.5,							
BH25/2.5,	BH26/0.5,							
BH27/0.5,	BH28/0.5							
Soil Glass Jar - Unpreserved (EP080)								
BH29/0.3,	BHDUP3/0.3,	**11-Dec-2019**	**20-Dec-2019**	25-Dec-2019	✓	**24-Dec-2019**	25-Dec-2019	✓
BH30/0.5,	BH31/0.5,							
BH32/0.3,	SP1,							
SP2,	SP3							

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)							
BH1/0.5, BH2/0.5, BH3/0.8, BH4/0.3, BH5/0.5, BH6/2.0, BH7/1.0, BH7/1.3, BH7/1.5, BH7/3.0	**09-Dec-2019**	**20-Dec-2019**	23-Dec-2019	✓	**22-Dec-2019**	29-Jan-2020	✓
Soil Glass Jar - Unpreserved (EP080)							
BH1/0.5, BH2/0.5, BH3/0.8, BH4/0.3, BH5/0.5, BH6/2.0, BH7/1.0, BH7/1.3, BH7/1.5, BH7/3.0	**09-Dec-2019**	**20-Dec-2019**	23-Dec-2019	✓	**23-Dec-2019**	23-Dec-2019	✓
Soil Glass Jar - Unpreserved (EP071)							
BH14/0.2, BH15/0.5, BH16/1.0, BH17/0.5, BH18/1.0, BH19/1.0, BH19/2.0, BH20/0.5, BH21/0.5, BHDUP2/0.5, BH21/1.0, BH21/2.5, BH8/0.5, BH9/1.0, BH10/1.0, BH10/2.8, BH11/0.5, BHDUP1/0.5, BH12/0.2, BH13/0.2	**10-Dec-2019**	**20-Dec-2019**	24-Dec-2019	✓	**22-Dec-2019**	29-Jan-2020	✓
Soil Glass Jar - Unpreserved (EP080)							
BH14/0.2, BH15/0.5, BH16/1.0, BH17/0.5, BH18/1.0, BH19/1.0, BH19/2.0, BH20/0.5, BH21/0.5, BHDUP2/0.5, BH21/1.0, BH21/2.5, BH8/0.5, BH9/1.0, BH10/1.0, BH10/2.8, BH11/0.5, BHDUP1/0.5, BH12/0.2, BH13/0.2	**10-Dec-2019**	**20-Dec-2019**	24-Dec-2019	✓	**23-Dec-2019**	24-Dec-2019	✓
Soil Glass Jar - Unpreserved (EP071)							

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued							
BH22/0.5, BH22/1.5, BH23/0.5, BH23/1.5, BH24/0.5, BH24/1.5, BH25/2.5, BH26/0.5, BH27/0.5, BH28/0.5, BH29/0.3, BHDUP3/0.3, BH30/0.5, BH31/0.5, BH32/0.3, SP1, SP2, SP3	**11-Dec-2019**	**20-Dec-2019**	25-Dec-2019	✓	**22-Dec-2019**	29-Jan-2020	✓
Soil Glass Jar - Unpreserved (EP080)							
BH22/0.5, BH22/1.5, BH23/0.5, BH23/1.5, BH24/0.5, BH24/1.5, BH25/2.5, BH26/0.5, BH27/0.5, BH28/0.5	**11-Dec-2019**	**20-Dec-2019**	25-Dec-2019	✓	**23-Dec-2019**	25-Dec-2019	✓
Soil Glass Jar - Unpreserved (EP080)							
BH29/0.3, BHDUP3/0.3, BH30/0.5, BH31/0.5, BH32/0.3, SP1, SP2, SP3	**11-Dec-2019**	**20-Dec-2019**	25-Dec-2019	✓	**24-Dec-2019**	25-Dec-2019	✓

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)								
BH1/0.5,	BH2/0.5,	**09-Dec-2019**	**20-Dec-2019**	23-Dec-2019	✓	**23-Dec-2019**	23-Dec-2019	✓
BH3/0.8,	BH4/0.3,							
BH5/0.5,	BH6/2.0,							
BH7/1.0,	BH7/1.3,							
BH7/1.5,	BH7/3.0							
Soil Glass Jar - Unpreserved (EP080)								
BH14/0.2,	BH15/0.5,	**10-Dec-2019**	**20-Dec-2019**	24-Dec-2019	✓	**23-Dec-2019**	24-Dec-2019	✓
BH16/1.0,	BH17/0.5,							
BH18/1.0,	BH19/1.0,							
BH19/2.0,	BH20/0.5,							
BH21/0.5,	BHDUP2/0.5,							
BH21/1.0,	BH21/2.5,							
BH8/0.5,	BH9/1.0,							
BH10/1.0,	BH10/2.8,							
BH11/0.5,	BHDUP1/0.5,							
BH12/0.2,	BH13/0.2							
Soil Glass Jar - Unpreserved (EP080)								
BH22/0.5,	BH22/1.5,	**11-Dec-2019**	**20-Dec-2019**	25-Dec-2019	✓	**23-Dec-2019**	25-Dec-2019	✓
BH23/0.5,	BH23/1.5,							
BH24/0.5,	BH24/1.5,							
BH25/2.5,	BH26/0.5,							
BH27/0.5,	BH28/0.5							
Soil Glass Jar - Unpreserved (EP080)								
BH29/0.3,	BHDUP3/0.3,	**11-Dec-2019**	**20-Dec-2019**	25-Dec-2019	✓	**24-Dec-2019**	25-Dec-2019	✓
BH30/0.5,	BH31/0.5,							
BH32/0.3,	SP1,							
SP2,	SP3							

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)							
Buchi Ammonia	EK055	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Formaldehyde	EP010	3	15	**20.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Moisture Content	EA055	6	54	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	6	56	**10.71**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	18	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	5	49	**10.20**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	5	49	**10.20**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	6	56	**10.71**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	6	60	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Buchi Ammonia	EK055	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Formaldehyde	EP010	2	15	**13.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	3	56	**5.36**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	49	**6.12**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	49	**6.12**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	56	**5.36**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	60	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Buchi Ammonia	EK055	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Formaldehyde	EP010	2	15	**13.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	3	56	**5.36**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	49	**6.12**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	49	**6.12**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	56	**5.36**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	60	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Buchi Ammonia	EK055	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Formaldehyde	EP010	2	15	**13.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Matrix Spikes (MS) - Continued							
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	3	56	**5.36**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	18	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	3	49	**6.12**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	49	**6.12**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	3	56	**5.36**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	3	60	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 6.1 and Table 1 (14 day holding time).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Hexavalent Chromium by Alkaline Digestion and DA Finish	EG048G	SOIL	In house: Referenced to USEPA SW846, Method 3060A. Hexavalent chromium is extracted by alkaline digestion. The digest is determined by photometrically by automatic discrete analyser, following pH adjustment. The instrument uses colour development using dephenylcarbazide. Each run of samples is measured against a five-point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Buchi Ammonia	EK055	SOIL	In house: Referenced to APHA 4500-NH3 B&G, H Samples are steam distilled (Buchi) prior to analysis and quantified using titration, FIA or Discrete Analyser.
Formaldehyde	EP010	SOIL	In house: Referenced to ASTM D 6303-98. Determined on 1:5 soil / water extracts by colourimetry using NASH reagent. The Hantszch reaction method is based on the reaction of acetylacetone with formaldehyde in the presence of excess ammonium acetate to form a coloured compound.
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270D 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 (2013) Schedule B(3) (Method 504)
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270D 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 (2013) Schedule B(3) (Method 504,505)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM amended 2013.
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270D. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 502 and 507)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260B. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM amended 2013.

Preparation Methods	Method	Matrix	Method Descriptions

Preparation Methods	Method	Matrix	Method Descriptions
Alkaline digestion for Hexavalent Chromium	EG048PR	SOIL	In house: Referenced to USEPA SW846, Method 3060A.
1:5 solid / water leach for soluble analytes	EN34	SOIL	10 g of soil is mixed with 50 mL of reagent grade water and tumbled end over end for 1 hour. Water soluble salts are leached from the soil by the continuous suspension. Samples are settled and the water filtered off for analysis.
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202)
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EW1905555**	Page	: 1 of 25
Client	: **ENVIRONMENT & NATURAL RESOURCE SOLUTIONS**	Laboratory	: Environmental Division NSW South Coast
Contact	: chris Allen	Contact	: Aneta Prosaroski
Address	: 25 River Rd Shoalhaven Heads 2535	Address	: 1/19 Ralph Black Dr, North Wollongong 2500 4/13 Geary Pl, North Nowra 2541 Australia NSW Australia
Telephone	: ----	Telephone	: +61 2 4225 3125
Project	: ENRS0197 - 61 Farm Road, Riverstone	Date Samples Received	: 19-Dec-2019
Order number	: ENRS0197	Date Analysis Commenced	: 20-Dec-2019
C-O-C number	: ----	Issue Date	: 02-Jan-2020
Sampler	: chris Allen, Tamika Flanigan		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 54		
No. of samples analysed	: 48		

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

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 2779564)									
EW1905555-001	BH14/0.2	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	16	12	31.6	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	22	20	13.4	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	7	<5	38.2	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	36	41	13.2	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	55	55	0.00	0% - 50%
		EG005T: Zinc	7440-66-6	5	mg/kg	68	75	9.78	0% - 50%
EW1905555-011	BH21/1.0	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	34	33	0.00	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	5	3	62.1	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	11	12	8.74	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	16	13	20.6	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	35	22	45.8	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	18	18	0.00	No Limit
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 2779566)									
EW1905555-022	BH27/0.5	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	12	7	59.1	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	<2	<2	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	6	18.8	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	17	17	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	10	8	24.7	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	11	8	23.4	No Limit
EW1905555-035	BH7/1.5	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	12	13	8.28	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	10	9	12.4	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 2779566) - continued									
EW1905555-035	BH7/1.5	EG005T: Arsenic	7440-38-2	5	mg/kg	8	8	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	533	451	16.7	0% - 20%
		EG005T: Lead	7439-92-1	5	mg/kg	30	30	0.00	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	959	914	4.81	0% - 20%
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 2781446)									
ES1942012-030	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	31	19	46.2	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	2	3	0.00	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	9	8	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	13	15	15.2	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	<5	<5	0.00	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2779568)									
EW1905555-002	BH15/0.5	EA055: Moisture Content	----	0.1	%	12.7	12.6	0.00	0% - 50%
EW1905555-014	BH22/1.5	EA055: Moisture Content	----	0.1	%	25.5	23.2	9.74	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2779569)									
EW1905555-025	BH1/0.5	EA055: Moisture Content	----	0.1	%	11.9	11.5	3.61	0% - 50%
EW1905555-038	BH9/1.0	EA055: Moisture Content	----	0.1	%	11.6	11.9	2.27	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2781450)									
ES1942258-009	Anonymous	EA055: Moisture Content	----	0.1	%	48.3	47.9	0.888	0% - 20%
EW1905555-054	SP3	EA055: Moisture Content	----	0.1	%	7.1	7.9	10.3	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2779565)									
EW1905555-001	BH14/0.2	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.2	0.1	0.00	No Limit
EW1905555-011	BH21/1.0	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2779567)									
EW1905555-022	BH27/0.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EW1905555-035	BH7/1.5	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2781445)									
ES1942012-030	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EG048: Hexavalent Chromium (Alkaline Digest) (QC Lot: 2786902)									
ES1942116-002	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	0.6	27.2	No Limit
EW1905555-013	BH22/0.5	EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EK055: Ammonia as N (QC Lot: 2790012)									
EW1905555-004	BH17/0.5	EK055: Ammonia as N	7664-41-7	20	mg/kg	<20	<20	0.00	No Limit
EW1905555-019	BH24/1.5	EK055: Ammonia as N	7664-41-7	20	mg/kg	60	60	0.00	No Limit
EP010: Formaldehyde (QC Lot: 2778040)									
EW1905555-025	BH1/0.5	EP010: Formaldehyde	50-00-0	2	mg/kg	<4	<4	0.00	No Limit
EP010: Formaldehyde (QC Lot: 2780892)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP010: Formaldehyde (QC Lot: 2780892) - continued									
EW1905555-004	BH17/0.5	EP010: Formaldehyde	50-00-0	2	mg/kg	<2	<2	0.00	No Limit
EW1905555-018	BH24/0.5	EP010: Formaldehyde	50-00-0	2	mg/kg	2	3	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2777721)									
EW1905555-002	BH15/0.5	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2778107)									
EW1905555-023	BH28/0.5	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2777720)									
EW1905555-002	BH15/0.5	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2778106)									
EW1905555-023	BH28/0.5	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2778106) - continued									
EW1905555-023	BH28/0.5	EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2777720)									
EW1905555-002	BH15/0.5	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2778106)									
EW1905555-023	BH28/0.5	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2778106) - continued									
EW1905555-023	BH28/0.5	EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 2777718)									
EW1905555-011	BH21/1.0	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.00	No Limit
EW1905555-002	BH15/0.5	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.00	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 2778104)									
EW1905555-035	BH7/1.5	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)A: Phenolic Compounds (QC Lot: 2778104) - continued									
EW1905555-035	BH7/1.5	EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	2	78.3	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.00	No Limit
EW1905555-023	BH28/0.5	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.00	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 2778195)									
ES1942012-001	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.00	No Limit
ES1942012-025	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)A: Phenolic Compounds (QC Lot: 2778195) - continued									
ES1942012-025	Anonymous	EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.00	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2777718)									
EW1905555-011	BH21/1.0	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EW1905555-002	BH15/0.5	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2777718) - continued									
EW1905555-002	BH15/0.5	EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2778104)									
EW1905555-035	BH7/1.5	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EW1905555-023	BH28/0.5	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2778104) - continued									
EW1905555-023	BH28/0.5	EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2778195)									
ES1942012-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1942012-025	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2778195) - continued									
ES1942012-025	Anonymous	EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2777719)									
EW1905555-011	BH21/1.0	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EW1905555-002	BH15/0.5	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2777723)									
EW1905555-001	BH14/0.2	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EW1905555-011	BH21/1.0	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2777730)									
EW1905555-022	BH27/0.5	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EW1905555-035	BH7/1.5	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2778105)									
EW1905555-035	BH7/1.5	EP071: C15 - C28 Fraction	----	100	mg/kg	280	400	35.2	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	1570	1920	19.5	0% - 50%
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EW1905555-023	BH28/0.5	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2778179)									
ES1942309-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES1942309-011	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	76	78	2.06	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2778194)									
ES1942012-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES1942012-025	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2778194) - continued									
ES1942012-025	Anonymous	EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2777719)									
EW1905555-011	BH21/1.0	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EW1905555-002	BH15/0.5	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2777723)									
EW1905555-001	BH14/0.2	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EW1905555-011	BH21/1.0	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2777730)									
EW1905555-022	BH27/0.5	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EW1905555-035	BH7/1.5	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2778105)									
EW1905555-035	BH7/1.5	EP071: >C16 - C34 Fraction	----	100	mg/kg	1260	1610	24.5	0% - 50%
		EP071: >C34 - C40 Fraction	----	100	mg/kg	740	890	18.3	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EW1905555-023	BH28/0.5	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2778179)									
ES1942309-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES1942309-011	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	76	81	7.04	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2778194)									
ES1942012-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
ES1942012-025	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP080: BTEXN (QC Lot: 2777723)									
EW1905555-001	BH14/0.2	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EP080: BTEXN (QC Lot: 2777723) - continued									
EW1905555-011	BH21/1.0	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP080: BTEXN (QC Lot: 2777730)									
EW1905555-022	BH27/0.5	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EW1905555-035	BH7/1.5	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
EP080: BTEXN (QC Lot: 2778179)									
ES1942309-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	1	1	0.00	No Limit
ES1942309-011	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	0.9	1.1	15.4	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2779564)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	108	86.0	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	103	83.0	113
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	97.7	76.0	128
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	102	86.0	120
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	102	80.0	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	107	87.0	123
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	107	80.0	122
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2779566)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	106	86.0	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	103	83.0	113
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	102	76.0	128
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	105	86.0	120
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	107	80.0	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	109	87.0	123
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	106	80.0	122
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2781446)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	110	86.0	126
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	107	83.0	113
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	108	76.0	128
EG005T: Copper	7440-50-8	5	mg/kg	<5	32 mg/kg	108	86.0	120
EG005T: Lead	7439-92-1	5	mg/kg	<5	40 mg/kg	113	80.0	114
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55 mg/kg	112	87.0	123
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	115	80.0	122
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2779565)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	98.3	70.0	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2779567)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	94.4	70.0	105
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2781445)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	98.6	70.0	105
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2786902)								
EG048G: Hexavalent Chromium	18540-29-9	0.5	mg/kg	<0.5	40 mg/kg	98.7	68.0	114
EK055: Ammonia as N (QCLot: 2790012)								
EK055: Ammonia as N	7664-41-7	20	mg/kg	<20	100 mg/kg	102	84.0	104

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP010: Formaldehyde (QCLot: 2778040)								
EP010: Formaldehyde	50-00-0	2	mg/kg	<2	10 mg/kg	101	74.0	116
EP010: Formaldehyde (QCLot: 2780892)								
EP010: Formaldehyde	50-00-0	2	mg/kg	<2	10 mg/kg	101	74.0	116
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2777721)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	107	62.0	126
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2778107)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	88.0	62.0	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 2777720)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	85.8	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	87.3	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	92.7	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	89.4	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	85.9	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	96.9	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	88.1	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	83.0	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	82.5	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	93.6	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	81.9	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	85.7	66.0	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	86.0	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	101	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	93.6	69.0	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	84.8	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	75.6	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	83.4	62.0	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	112	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	87.2	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	110	54.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 2778106)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	89.1	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	90.1	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	97.3	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	94.4	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	89.8	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	100	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	91.2	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	86.9	62.0	118

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 2778106) - continued								
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	86.4	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	97.1	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	86.5	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	89.5	66.0	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	91.7	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	106	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	98.2	69.0	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	91.5	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	85.3	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	88.6	62.0	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	109	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	93.6	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	106	54.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2777720)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	73.3	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	80.0	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	66.9	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	89.8	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	84.7	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	83.5	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	81.7	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	82.3	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	84.5	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	86.6	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	81.5	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	86.1	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	79.1	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	80.6	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	81.3	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	80.7	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	80.8	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	93.2	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	84.3	41.0	123
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2778106)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	84.6	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	87.8	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	95.2	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	91.4	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	87.8	70.0	120

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2778106) - continued								
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	87.4	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	85.3	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	83.6	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	88.8	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	90.3	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	80.6	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	83.0	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	81.3	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	84.9	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	86.5	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	85.3	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	84.5	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	98.5	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	82.5	41.0	123
EP075(SIM)A: Phenolic Compounds (QCLot: 2777718)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	6 mg/kg	122	71.0	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	6 mg/kg	110	72.0	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	6 mg/kg	116	71.0	123
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	12 mg/kg	124	67.0	127
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	6 mg/kg	80.3	54.0	114
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	6 mg/kg	83.7	68.0	126
EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	6 mg/kg	89.3	66.0	120
EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	6 mg/kg	91.7	70.0	120
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	6 mg/kg	92.5	70.0	116
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	6 mg/kg	87.2	54.0	114
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	6 mg/kg	92.9	60.0	114
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	12 mg/kg	# 60.4	10.0	57.0
EP075(SIM)A: Phenolic Compounds (QCLot: 2778104)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	6 mg/kg	122	71.0	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	6 mg/kg	111	72.0	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	6 mg/kg	116	71.0	123
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	12 mg/kg	123	67.0	127
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	6 mg/kg	84.3	54.0	114
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	6 mg/kg	84.0	68.0	126
EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	6 mg/kg	89.6	66.0	120
EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	6 mg/kg	91.0	70.0	120
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	6 mg/kg	92.2	70.0	116
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	6 mg/kg	87.5	54.0	114
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	6 mg/kg	92.8	60.0	114

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)A: Phenolic Compounds (QCLot: 2778104) - continued								
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	12 mg/kg	# 60.9	10.0	57.0
EP075(SIM)A: Phenolic Compounds (QCLot: 2778195)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	6 mg/kg	119	71.0	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	6 mg/kg	105	72.0	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	6 mg/kg	112	71.0	123
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	12 mg/kg	119	67.0	127
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	6 mg/kg	65.5	54.0	114
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	6 mg/kg	80.0	68.0	126
EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	6 mg/kg	82.8	66.0	120
EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	6 mg/kg	84.5	70.0	120
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	6 mg/kg	87.7	70.0	116
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	6 mg/kg	77.6	54.0	114
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	6 mg/kg	85.5	60.0	114
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	12 mg/kg	48.4	10.0	57.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2777718)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	108	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	110	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	105	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	110	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	113	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	106	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	115	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	117	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	95.6	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	104	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	85.8	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	113	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	99.0	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	97.4	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	102	63.0	121
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2778104)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	108	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	110	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	105	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	110	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	112	75.0	127

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2778104) - continued								
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	105	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	115	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	117	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	95.6	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	104	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	85.4	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	114	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	98.7	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	98.9	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	97.4	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	102	63.0	121
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2778195)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	107	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	109	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	104	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	109	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	111	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	104	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	114	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	115	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	92.8	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	102	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	83.3	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	112	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	95.0	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	96.6	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	95.3	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	100	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2777719)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	104	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	114	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	112	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2777723)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	84.8	68.4	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2777730)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	89.6	68.4	128

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
				Result	Concentration	LCS	Low	High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2778105)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	96.3	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	106	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	95.0	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2778179)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	90.0	68.4	128
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2778194)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	114	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	118	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	111	71.0	129
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2777719)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	109	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	113	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	91.6	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2777723)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	83.8	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2777730)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	89.2	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2778105)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	104	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	101	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	79.2	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2778179)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	91.7	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2778194)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	116	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	115	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	96.3	63.0	131
EP080: BTEXN (QCLot: 2777723)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	90.0	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	92.3	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	93.2	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	95.4	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	100	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	110	63.0	119
EP080: BTEXN (QCLot: 2777730)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	86.6	62.0	116

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Recovery Limits (%): Low	Recovery Limits (%): High
EP080: BTEXN (QCLot: 2777730) - continued								
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	96.2	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	97.6	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	97.3	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	99.6	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	113	63.0	119
EP080: BTEXN (QCLot: 2778179)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	93.9	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	91.8	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	92.8	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	92.4	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	96.6	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	96.8	63.0	119

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Recovery Limits (%): Low	Recovery Limits (%): High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2779564)							
EW1905555-001	BH14/0.2	EG005T: Arsenic	7440-38-2	50 mg/kg	93.7	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	95.9	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	84.0	70.0	130
		EG005T: Copper	7440-50-8	250 mg/kg	102	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	93.8	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	92.8	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	94.4	70.0	130
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2779566)							
EW1905555-022	BH27/0.5	EG005T: Arsenic	7440-38-2	50 mg/kg	92.9	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.8	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	85.0	70.0	130
		EG005T: Copper	7440-50-8	250 mg/kg	97.9	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	97.2	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	97.0	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	98.0	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 2781446)							
ES1942012-030	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	102	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.2	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	107	70.0	130
		EG005T: Copper	7440-50-8	250 mg/kg	93.5	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	99.0	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	97.0	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	106	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2779565)							
EW1905555-001	BH14/0.2	EG035T: Mercury	7439-97-6	5 mg/kg	99.8	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2779567)							
EW1905555-022	BH27/0.5	EG035T: Mercury	7439-97-6	5 mg/kg	96.6	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2781445)							
ES1942012-030	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	108	70.0	130
EG048: Hexavalent Chromium (Alkaline Digest) (QCLot: 2786902)							
ES1942348-001	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	40 mg/kg	# 18.6	70.0	130
ES1942348-001	Anonymous	EG048G: Hexavalent Chromium	18540-29-9	40 mg/kg	# 18.0	70.0	130
EK055: Ammonia as N (QCLot: 2790012)							
EW1905555-004	BH17/0.5	EK055: Ammonia as N	7664-41-7	50 mg/kg	100	70.0	130
EP010: Formaldehyde (QCLot: 2778040)							
EW1905555-025	BH1/0.5	EP010: Formaldehyde	50-00-0	12.5 mg/kg	80.8	70.0	130
EP010: Formaldehyde (QCLot: 2780892)							
EW1905555-004	BH17/0.5	EP010: Formaldehyde	50-00-0	12.5 mg/kg	96.0	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2777721)							
EW1905555-002	BH15/0.5	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	100.0	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2778107)							
EW1905555-023	BH28/0.5	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	107	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 2777720)							
EW1905555-002	BH15/0.5	EP068: gamma-BHC	58-89-9	0.5 mg/kg	113	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	94.9	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	114	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	103	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	102	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	79.5	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 2778106)							
EW1905555-023	BH28/0.5	EP068: gamma-BHC	58-89-9	0.5 mg/kg	101	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 2778106) - continued							
EW1905555-023	BH28/0.5	EP068: Heptachlor	76-44-8	0.5 mg/kg	98.1	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	117	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	97.9	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	83.0	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	70.2	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2777720)							
EW1905555-002	BH15/0.5	EP068: Diazinon	333-41-5	0.5 mg/kg	84.9	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	86.0	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	90.4	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	91.2	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	87.6	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2778106)							
EW1905555-023	BH28/0.5	EP068: Diazinon	333-41-5	0.5 mg/kg	85.7	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	86.0	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	70.1	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	90.2	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	94.4	70.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 2777718)							
EW1905555-002	BH15/0.5	EP075(SIM): Phenol	108-95-2	10 mg/kg	90.8	70.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	107	70.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	73.1	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	112	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	67.0	20.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 2778104)							
EW1905555-023	BH28/0.5	EP075(SIM): Phenol	108-95-2	10 mg/kg	106	70.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	121	70.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	114	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	127	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	116	20.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 2778195)							
ES1942012-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	120	70.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	124	70.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	111	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	118	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	90.9	20.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2777718)							
EW1905555-002	BH15/0.5	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	110	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2777718) - continued							
EW1905555-002	BH15/0.5	EP075(SIM): Pyrene	129-00-0	10 mg/kg	113	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2778104)							
EW1905555-023	BH28/0.5	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	123	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	125	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2778195)							
ES1942012-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	130	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	121	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2777719)							
EW1905555-002	BH15/0.5	EP071: C10 - C14 Fraction	----	523 mg/kg	93.2	73.0	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	100	53.0	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	113	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2777723)							
EW1905555-001	BH14/0.2	EP080: C6 - C9 Fraction	----	32.5 mg/kg	82.0	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2777730)							
EW1905555-022	BH27/0.5	EP080: C6 - C9 Fraction	----	32.5 mg/kg	82.7	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2778105)							
EW1905555-023	BH28/0.5	EP071: C10 - C14 Fraction	----	523 mg/kg	83.7	73.0	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	102	53.0	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	113	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2778179)							
ES1942309-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	119	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2778194)							
ES1942012-001	Anonymous	EP071: C10 - C14 Fraction	----	523 mg/kg	96.4	73.0	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	113	53.0	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	116	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2777719)							
EW1905555-002	BH15/0.5	EP071: >C10 - C16 Fraction	----	860 mg/kg	92.9	73.0	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	113	53.0	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	103	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2777723)							
EW1905555-001	BH14/0.2	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	81.7	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2777730)							
EW1905555-022	BH27/0.5	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	82.5	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2778105)							
EW1905555-023	BH28/0.5	EP071: >C10 - C16 Fraction	----	860 mg/kg	99.2	73.0	137

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2778105) - continued							
EW1905555-023	BH28/0.5	EP071: >C16 - C34 Fraction	----	3223 mg/kg	108	53.0	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	112	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2778179)							
ES1942309-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	110	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2778194)							
ES1942012-001	Anonymous	EP071: >C10 - C16 Fraction	----	860 mg/kg	96.6	73.0	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	112	53.0	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	111	52.0	132
EP080: BTEXN (QCLot: 2777723)							
EW1905555-001	BH14/0.2	EP080: Benzene	71-43-2	2.5 mg/kg	88.5	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	88.5	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	91.6	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	93.5	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	97.1	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	113	70.0	130
EP080: BTEXN (QCLot: 2777730)							
EW1905555-022	BH27/0.5	EP080: Benzene	71-43-2	2.5 mg/kg	85.3	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	89.9	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	91.1	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	91.6	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	94.6	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	106	70.0	130
EP080: BTEXN (QCLot: 2778179)							
ES1942309-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	114	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	109	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	113	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	111	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	111	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	100	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2001699**	Page	: 1 of 5
Client	: **ENVIRONMENT & NATURAL RESOURCE SOLUTIONS**	Laboratory	: Environmental Division Sydney
Contact	: chris Allen	Telephone	: +61 2 4225 3125
Project	: ENRS0197 - 61 Farm Road, Riverstone	Date Samples Received	: 19-Dec-2019
Site	: ----	Issue Date	: 28-Jan-2020
Sampler	: ----	No. of samples received	: 5
Order number	: ENRS0197	No. of samples analysed	: 5

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

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

Summary of Outliers

Outliers : Quality Control Samples

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

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

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

Outliers : Frequency of Quality Control Samples

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

Outliers : Analysis Holding Time Compliance

Matrix: **SOIL**

Method / Container / Client Sample ID(s)	Extraction / Preparation			Analysis		
	Date extracted	Due for extraction	Days overdue	Date analysed	Due for analysis	Days overdue
EN33: TCLP Leach						
Non-Volatile Leach: 14 day HT(e.g. SV organics)						
BH12/0.2, BH14/0.2	22-Jan-2020	24-Dec-2019	**29**	----	----	----
Non-Volatile Leach: 14 day HT(e.g. SV organics)						
SP3	22-Jan-2020	25-Dec-2019	**28**	----	----	----

Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type / Method	Count		Rate (%)		Quality Control Specification
	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

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

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

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

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

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EN33: TCLP Leach							
Non-Volatile Leach: 14 day HT(e.g. SV organics) (EN33a)							
BH12/0.2, BH14/0.2	**10-Dec-2019**	**22-Jan-2020**	24-Dec-2019	×	**----**	----	----
Non-Volatile Leach: 14 day HT(e.g. SV organics) (EN33a)							
SP3	**11-Dec-2019**	**22-Jan-2020**	25-Dec-2019	×	**----**	----	----
Non-Volatile Leach: 180 day HT (e.g. PFAS, metals ex.Hg) (EN33a)							
BH7/3.0	**09-Dec-2019**	**22-Jan-2020**	06-Jun-2020	✓	**----**	----	----
Non-Volatile Leach: 180 day HT (e.g. PFAS, metals ex.Hg) (EN33a)							
SP2	**11-Dec-2019**	**22-Jan-2020**	08-Jun-2020	✓	**----**	----	----

Matrix: **WATER**

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

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

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG005(ED093)C: Leachable Metals by ICPAES							
Clear Plastic Bottle - Nitric Acid; Unfiltered (EG005C)							
BH7/3.0, SP2, SP3	**22-Jan-2020**	**24-Jan-2020**	20-Jul-2020	✓	**24-Jan-2020**	20-Jul-2020	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM))							
BH12/0.2, BH14/0.2, SP3	**22-Jan-2020**	**24-Jan-2020**	29-Jan-2020	✓	**24-Jan-2020**	04-Mar-2020	✓

Quality Control Parameter Frequency Compliance

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

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Method Blanks (MB)							
TCLP for Non & Semivolatile Analytes	EN33a	1	9	**11.11**	**9.09**	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Leachable Metals by ICPAES	EG005C	1	3	**33.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	3	**0.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Leachable Metals by ICPAES	EG005C	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Leachable Metals by ICPAES	EG005C	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Leachable Metals by ICPAES	EG005C	1	3	**33.33**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	3	**0.00**	**5.00**	×	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Leachable Metals by ICPAES	EG005C	SOIL	In house: referenced to APHA 3120; USEPA SW 846 - 6010: The ICPAES technique ionises leachate sample atoms emitting a characteristic spectrum. This spectrum is then compared against matrix matched standards for quantification. This method is compliant with NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)

Preparation Methods	Method	Matrix	Method Descriptions
Digestion for Total Recoverable Metals in TCLP Leachate	EN25C	SOIL	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM (2013) Schedule B(3)
TCLP for Non & Semivolatile Analytes	EN33a	SOIL	In house QWI-EN/33 referenced to USEPA SW846-1311: The TCLP procedure is designed to determine the mobility of both organic and inorganic analytes present in wastes. The standard TCLP leach is for non-volatile and Semivolatile test parameters.
Separatory Funnel Extraction of Liquids	ORG14	SOIL	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES2001699**	Page	: 1 of 3
Client	: **ENVIRONMENT & NATURAL RESOURCE SOLUTIONS**	Laboratory	: Environmental Division Sydney
Contact	: chris Allen	Contact	: Aneta Prosaroski
Address	: 25 River Rd Shoalhaven Heads 2535	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61 2 4225 3125
Project	: ENRS0197 - 61 Farm Road, Riverstone	Date Samples Received	: 19-Dec-2019
Order number	: ENRS0197	Date Analysis Commenced	: 22-Jan-2020
C-O-C number	: ----	Issue Date	: 28-Jan-2020
Sampler	: ----		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 5		
No. of samples analysed	: 5		

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This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

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

Signatories	*Position*	*Accreditation Category*
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW

General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Client sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Recovery Limits (%)*
EG005(ED093)C: Leachable Metals by ICPAES (QC Lot: 2825708)									
ES2001699-001	BH7/3.0	EG005C: Lead	7439-92-1	0.1	mg/L	<0.1	<0.1	0.00	No Limit
		EG005C: Nickel	7440-02-0	0.1	mg/L	<0.1	<0.1	0.00	No Limit

Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Spike (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EN33: TCLP Leach (QCLot: 2821395)								
EN33a: Initial pH	----	0.1	pH Unit	1.0	----	----	----	----
EN33a: After HCl pH	----	0.1	pH Unit	1.0	----	----	----	----
EN33a: Final pH	----	0.1	pH Unit	1.0	----	----	----	----

Sub-Matrix: **WATER**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)C: Leachable Metals by ICPAES (QCLot: 2825708)								
EG005C: Lead	7439-92-1	0.1	mg/L	<0.1	0.1 mg/L	104	80.0	118
EG005C: Nickel	7440-02-0	0.1	mg/L	<0.1	0.1 mg/L	104	83.0	115
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2825797)								
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	76.5	63.3	117

Matrix Spike (MS) Report

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

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)C: Leachable Metals by ICPAES (QCLot: 2825708)							
ES2001699-004	SP2	EG005C: Lead	7439-92-1	1 mg/L	100	70.0	130
		EG005C: Nickel	7440-02-0	1 mg/L	99.4	70.0	130

ENRS

Environment & Natural Resource Solutions

CHAIN OF CUSTODY - ENRS

ENVIROLAB SERVICES

Consultant:	**ENRS**
Project Mgr:	**Rohan Last**
Sampler:	**CA TF**
Address:	**108 Jerry Bailey Rd, Shoalhaven Heads, NSW, 2535**
Delivery:	
Email:	lab@enrs.com.au
Phone:	**02 4448 5490** **MOB:** **0401 518 443**

ENRS Project Name and Number:	**ENRS0197**
	61 Farm Road, Riverstone
PO No.:	**ENRS0197**
Envirolab Services Quote No. :	**-**
Date results required:	
Or choose:	**standard / 1 day / 2 day / 3 day**

Note: Inform lab in advance if urgent turnaround is required - surcharge applies

Envirolab Services
12 Ashley St, Chatswood, NSW, 2067

Phone: 02 9910 6200

Fax: 02 9910 6201

E-mail: ahie@envirolabservices.com.au

Contact: Aileen Hie

Sample information | **Tests Required** | **Comments**

Envirolab Sample ID	ENRS Sample ID	Date sampled	Type of sample	HOLD	Test	Combo #3 (TRH, BTEX, 8HM, PAHs)													Comments
1	BH21/0.5	10/12/19	Soil			1													
2	BH29/0.3	11/12/19	Soil			1													
			Total	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200

lab No: 233198

Date Received: 16/12/19

Time Received: 1000

Received by: SD

Temp: Cool/Ambient

Cooling: Ice/Icepack

Security: Intact/Broken/None

Relinquished by (company):	**ENRS**	**Received by (company):**	ECS SM
Print Name:	**Rohan Last**	**Print Name:**	Sagan Day
Date & Time:	**12/12/2019**	**Date & Time:**	16/12/19 1000
Signature:		**Signature:**	

Samples Received: Cool or Ambient (circle one)

Temperature Recieved at: 22.5 **(if applicable)**

Transported by: Hand delivered / courier

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
customerservice@envirolab.com.au
www.envirolab.com.au

CERTIFICATE OF ANALYSIS 233198

Client Details

Client	ENRS
Attention	Lab Results
Address	25 River Rd, Shoalhaven Heads, NSW, 2535

Sample Details

Your Reference	**ENRS0197 61 Farm Road, Riverstone**
Number of Samples	2 SOIL
Date samples received	16/12/2019
Date completed instructions received	16/12/2019

Analysis Details

Please refer to the following pages for results, methodology summary and quality control data.

Samples were analysed as received from the client. Results relate specifically to the samples as received.

Results are reported on a dry weight basis for solids and on an as received basis for other matrices.

Report Details

Date results requested by	23/12/2019
Date of Issue	20/12/2019

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Results Approved By
Loren Bardwell, Senior Chemist
Steven Luong, Organics Supervisor

Authorised By

Nancy Zhang, Laboratory Manager

vTRH(C6-C10)/BTEXN in Soil			
Our Reference		233198-1	233198-2
Your Reference	UNITS	BH21	BH29
Depth		0.5	0.3
Date Sampled		10/12/2019	11/12/2019
Type of sample		SOIL	SOIL
Date extracted	-	17/12/2019	17/12/2019
Date analysed	-	19/12/2019	19/12/2019
TRH C_6 - C_9	mg/kg	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
naphthalene	mg/kg	<1	<1
Total +ve Xylenes	mg/kg	<3	<3
Surrogate aaa-Trifluorotoluene	%	103	107

svTRH (C10-C40) in Soil			
Our Reference		233198-1	233198-2
Your Reference	UNITS	BH21	BH29
Depth		0.5	0.3
Date Sampled		10/12/2019	11/12/2019
Type of sample		SOIL	SOIL
Date extracted	-	17/12/2019	17/12/2019
Date analysed	-	18/12/2019	18/12/2019
TRH C_{10} - C_{14}	mg/kg	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100
TRH >C_{10} -C_{16}	mg/kg	<50	<50
TRH >C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50
TRH >C_{16} -C_{34}	mg/kg	<100	<100
TRH >C_{34} -C_{40}	mg/kg	<100	<100
Total +ve TRH (>C10-C40)	mg/kg	<50	<50
Surrogate o-Terphenyl	%	85	83

PAHs in Soil			
Our Reference		233198-1	233198-2
Your Reference	UNITS	BH21	BH29
Depth		0.5	0.3
Date Sampled		10/12/2019	11/12/2019
Type of sample		SOIL	SOIL
Date extracted	-	17/12/2019	17/12/2019
Date analysed	-	18/12/2019	18/12/2019
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1
Total +ve PAH's	mg/kg	<0.05	<0.05
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	97	111

Acid Extractable metals in soil			
Our Reference		233198-1	233198-2
Your Reference	UNITS	BH21	BH29
Depth		0.5	0.3
Date Sampled		10/12/2019	11/12/2019
Type of sample		SOIL	SOIL
Date prepared	-	17/12/2019	17/12/2019
Date analysed	-	17/12/2019	17/12/2019
Arsenic	mg/kg	9	9
Cadmium	mg/kg	<0.4	<0.4
Chromium	mg/kg	26	21
Copper	mg/kg	5	7
Lead	mg/kg	17	21
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	3	5
Zinc	mg/kg	16	22

Moisture			
Our Reference		233198-1	233198-2
Your Reference	UNITS	BH21	BH29
Depth		0.5	0.3
Date Sampled		10/12/2019	11/12/2019
Type of sample		SOIL	SOIL
Date prepared	-	17/12/2019	17/12/2019
Date analysed	-	18/12/2019	18/12/2019
Moisture	%	13	10

Method ID	Methodology Summary
Inorg-008	Moisture content determined by heating at 105+/-5 °C for a minimum of 12 hours.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis. Note, the Total +ve TRH PQL is reflective of the lowest individual PQL and is therefore "Total +ve TRH" is simply a sum of the positive individual TRH fractions (>C10-C40).
Org-012/017	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS and/or GC-MS/MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'EQ PQL'values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'EQ zero'values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'EQ half PQL'values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater. Note, the Total +ve Xylene PQL is reflective of the lowest individual PQL and is therefore "Total +ve Xylenes" is simply a sum of the positive individual Xylenes.

QUALITY CONTROL: vTRH(C6-C10)/BTEXN in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			17/12/2019	[NT]	[NT]	[NT]	[NT]	17/12/2019	[NT]
Date analysed	-			19/12/2019	[NT]	[NT]	[NT]	[NT]	19/12/2019	[NT]
TRH C_6 - C_9	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	114	[NT]
TRH C_6 - C_{10}	mg/kg	25	Org-016	<25	[NT]	[NT]	[NT]	[NT]	114	[NT]
Benzene	mg/kg	0.2	Org-016	<0.2	[NT]	[NT]	[NT]	[NT]	122	[NT]
Toluene	mg/kg	0.5	Org-016	<0.5	[NT]	[NT]	[NT]	[NT]	130	[NT]
Ethylbenzene	mg/kg	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	100	[NT]
m+p-xylene	mg/kg	2	Org-016	<2	[NT]	[NT]	[NT]	[NT]	109	[NT]
o-Xylene	mg/kg	1	Org-016	<1	[NT]	[NT]	[NT]	[NT]	106	[NT]
naphthalene	mg/kg	1	Org-014	<1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate aaa-Trifluorotoluene	%		Org-016	108	[NT]	[NT]	[NT]	[NT]	110	[NT]

QUALITY CONTROL: svTRH (C10-C40) in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-2	[NT]
Date extracted	-			17/12/2019	[NT]	[NT]	[NT]	[NT]	17/12/2019	[NT]
Date analysed	-			17/12/2019	[NT]	[NT]	[NT]	[NT]	17/12/2019	[NT]
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	116	[NT]
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	108	[NT]
TRH >C_{10} -C_{16}	mg/kg	50	Org-003	<50	[NT]	[NT]	[NT]	[NT]	116	[NT]
TRH >C_{16} -C_{34}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	100	[NT]
TRH >C_{34} -C_{40}	mg/kg	100	Org-003	<100	[NT]	[NT]	[NT]	[NT]	108	[NT]
Surrogate o-Terphenyl	%		Org-003	74	[NT]	[NT]	[NT]	[NT]	97	[NT]

QUALITY CONTROL: PAHs in Soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	[NT]
Date extracted	-			17/12/2019	[NT]	[NT]	[NT]	[NT]	17/12/2019	[NT]
Date analysed	-			18/12/2019	[NT]	[NT]	[NT]	[NT]	18/12/2019	[NT]
Naphthalene	mg/kg	0.1	Org-012/017	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Acenaphthylene	mg/kg	0.1	Org-012/017	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Acenaphthene	mg/kg	0.1	Org-012/017	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluorene	mg/kg	0.1	Org-012/017	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Phenanthrene	mg/kg	0.1	Org-012/017	<0.1	[NT]	[NT]	[NT]	[NT]	98	[NT]
Anthracene	mg/kg	0.1	Org-012/017	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Fluoranthene	mg/kg	0.1	Org-012/017	<0.1	[NT]	[NT]	[NT]	[NT]	102	[NT]
Pyrene	mg/kg	0.1	Org-012/017	<0.1	[NT]	[NT]	[NT]	[NT]	106	[NT]
Benzo(a)anthracene	mg/kg	0.1	Org-012/017	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Chrysene	mg/kg	0.1	Org-012/017	<0.1	[NT]	[NT]	[NT]	[NT]	94	[NT]
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012/017	<0.2	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(a)pyrene	mg/kg	0.05	Org-012/017	<0.05	[NT]	[NT]	[NT]	[NT]	136	[NT]
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012/017	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012/017	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012/017	<0.1	[NT]	[NT]	[NT]	[NT]	[NT]	[NT]
Surrogate p-Terphenyl-d14	%		Org-012/017	108	[NT]	[NT]	[NT]	[NT]	108	[NT]

QUALITY CONTROL: Acid Extractable metals in soil						Duplicate			Spike Recovery %	
Test Description	Units	PQL	Method	Blank	#	Base	Dup.	RPD	LCS-3	[NT]
Date prepared	-			17/12/2019	[NT]	[NT]	[NT]	[NT]	17/12/2019	[NT]
Date analysed	-			17/12/2019	[NT]	[NT]	[NT]	[NT]	17/12/2019	[NT]
Arsenic	mg/kg	4	Metals-020	<4	[NT]	[NT]	[NT]	[NT]	108	[NT]
Cadmium	mg/kg	0.4	Metals-020	<0.4	[NT]	[NT]	[NT]	[NT]	100	[NT]
Chromium	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Copper	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]
Lead	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	109	[NT]
Mercury	mg/kg	0.1	Metals-021	<0.1	[NT]	[NT]	[NT]	[NT]	105	[NT]
Nickel	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	101	[NT]
Zinc	mg/kg	1	Metals-020	<1	[NT]	[NT]	[NT]	[NT]	103	[NT]

Result Definitions

NT	Not tested
NA	Test not required
INS	Insufficient sample for this test
PQL	Practical Quantitation Limit
<	Less than
>	Greater than
RPD	Relative Percent Difference
LCS	Laboratory Control Sample
NS	Not specified
NEPM	National Environmental Protection Measure
NR	Not Reported

Quality Control Definitions

Blank	This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate	This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike	A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample)	This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike	Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Australian Drinking Water Guidelines recommend that Thermotolerant Coliform, Faecal Enterococci, & E.Coli levels are less than 1cfu/100mL. The recommended maximums are taken from "Australian Drinking Water Guidelines", published by NHMRC & ARMC 2011.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: >10xPQL - RPD acceptance criteria will vary depending on the analytes and the analytical techniques but is typically in the range 20%-50% – see ELN-P05 QA/QC tables for details; <10xPQL - RPD are higher as the results approach PQL and the estimated measurement uncertainty will statistically increase.

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals (not SPOCAS); 60-140% for organics/SPOCAS (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.

Analysis of aqueous samples typically involves the extraction/digestion and/or analysis of the liquid phase only (i.e. NOT any settled sediment phase but inclusive of suspended particles if present), unless stipulated on the Envirolab COC and/or by correspondence. Notable exceptions include certain Physical Tests (pH/EC/BOD/COD/Apparent Colour etc.), Solids testing, total recoverable metals and PFAS where solids are included by default.

Samples for Microbiological analysis (not Amoeba forms) received outside of the 2-8°C temperature range do not meet the ideal cooling conditions as stated in AS2031-2012.

Appendix C

Bore Logs

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH1

PROJECT No:	ENRS0197	**DATE DRILLED:**	09/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	1.2m

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0		No Well Constructed						0-0.6 Silty SAND with gravel, dry, brown
0.2								
0.4								
0.6			BH1/0.5					0.6-1.2 Hard CLAY with gravel, subrounded to angluar fragments, moist to dry, red/ brown
0.8								
1.0			BH1/1.0					
1.2								1.2 Target Depth Reached (TDR) Augar Refusal
1.4								
1.6								
1.8								
2.0								
2.2								
2.4								
2.6								
2.8								
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH2

PROJECT No:	ENRS0197	**DATE DRILLED:**	09/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	0.5m

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0								0-0.5 Silty SAND with very stiff clay gravel, dry, brown
0.2		No Well Constructed						
0.4			BH2/0.5					0.5 TDR
0.6								
0.8								
1.0								
1.2								
1.4								
1.6								
1.8								
2.0								
2.2								
2.4								
2.6								
2.8								
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH3

PROJECT No:	ENRS0197	**DATE DRILLED:**	09/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	0.8m

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0		No Well Constructed						0-0.6 Silty SAND with very stiff clay, gravel.,dry, brown
0.2								
0.4								
0.6								0.6-0.8 Hard CLAY with gravel subrounded to angluar fragments, moist to dry, red/ brown.
0.8			BH3/0.8					0.8 TDR
1.0								
1.2								
1.4								
1.6								
1.8								
2.0								
2.2								
2.4								
2.6								
2.8								
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH4

PROJECT No:	ENRS0197	**DATE DRILLED:**	09/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	0.3m

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0								0-0.3 Silty SAND with trace of gravel dry, brown
0.2		No Well Constructed	BH4/0.3					0.3 TDR
0.4								
0.6								
0.8								
1.0								
1.2								
1.4								
1.6								
1.8								
2.0								
2.2								
2.4								
2.6								
2.8								
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH5

PROJECT No:	ENRS0197	**DATE DRILLED:**	10/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	0.5m

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
0.0								**Ground Surface**
0.2		No Well Constructed	BH5/0.5					0-0.2 Silty SAND, gravel, dry, brown 0.2-0.3 Silty SAND, subrouded and sub angular colbbles and boulders, dry, brown Firm CLAY, red mottled with white 0.5 TDR
0.4								
0.6								
0.8								
1.0								
1.2								
1.4								
1.6								
1.8								
2.0								
2.2								
2.4								
2.6								
2.8								
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH6

PROJECT No:	ENRS0197	**DATE DRILLED:**	10/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	3.0m

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0		No Well Constructed						0-0.2 FILL, Silty SAND with some cobbles, and boulders, debris of foreign material, dry, brown
0.2								0.2-1.5 Stiff Clay SAND, dry, brown, with cobbles
0.4								
0.6								
0.8								
1.0			BH6/1.0					
1.2								
1.4								
1.6								1.5-2.0 FILL - firm CLAY with Sand and gravel, light brown
1.8								
2.0			BH6/2.0					2.0-2.5 FILL Sticky very soft CLAY. Visual and olfactory indications of hydrocarbon contamiantion, black, wet.
2.2								
2.4								
2.6								2.5-3.0 FILL Sticky very soft CLAY. Visual and olfactory indications of hydrocarbon contamiantion, black mottled with grey moist.
2.8								
3.0			BH6/3.0					3-3.3 Siltstone, weathered yellow-white no visual or olfactory indication of contamination
3.2								3.3 TDR Augar Refusal
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH7

PROJECT No:	ENRS0197	**DATE DRILLED:**	09/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	3.3.m

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0		No Well Constructed						0-0.5 FILL, Silty SAND with some cobbles, and boulders, debris of foreign material, dry, brown
0.2								
0.4								
0.6								0.6-1.4 Stiff CLAY, sand with cobbles, dry, brown.
0.8								
1.0			BH7/1.0					
1.2								
1.4			BH7/1.3					1.4-1.5 Firm CLAY, sand with cobbles, dry, brown.
1.6			BH7/1.5					1.5-3.0 FILL Sticky very soft CLAY. Visual and olfactory indications of hydrocarbon contamiantion, black, wet.
1.8								
2.0								
2.2								
2.4								
2.6								
2.8								
3.0			BH7/3.0					3-3.3 Siltstone, weathered yellow-white no visual or olfactory indication of contamination
3.2								3.3 TDR Augar Refusal
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH8

PROJECT No:	ENRS0197	**DATE DRILLED:**	10/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	1.3m

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0		No Well Constructed	BH8/0.5					0-0.2 Silty SAND, gravel, dry, brown
0.2								0.2- 1.3 Firm CLAY, red mottled with white
0.4								
0.6								
0.8								
1.0								
1.2								
1.4								1.3 TDR Augar refusal
1.6								
1.8								
2.0								
2.2								
2.4								
2.6								
2.8								
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH9

PROJECT No:	ENRS0197	**DATE DRILLED:**	10/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	3.0.m

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0		No Well Constructed						0-0.5 Silty SAND with some cobbles, and boulders, dry, brown
0.2								
0.4								0.5-1.5 Stiff CLAY, sand with cobbles, dry, brown.
0.6								
0.8								
1.0			BH9/1.0					
1.2								
1.4								1.5-2.5 Stiff CLAY, red mottled with white.
1.6								
1.8								
2.0								
2.2								
2.4								2.5-3.0 Firm CLAY, grey mottled with white and yellow
2.6								
2.8								
3.0			BH9/3.0					3.0 TDR
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH10

PROJECT No:	ENRS0197	**DATE DRILLED:**	10/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	2.8m

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0		No Well Constructed						0-0.2 Silty SAND with some cobbles, and boulders, dry, brown
0.2								0.2-1.0 Stiff CLAY, sand with cobbles, dry, red/ brown.
0.4								
0.6								
0.8								
1.0			BH10/1.0					1.0-2.8 Very Stiff CLAY, red mottled with white, moist.
1.2								
1.4								
1.6								
1.8								
2.0								
2.2								
2.4								
2.6								
2.8			BH10/2.8					2.8 TDR Augar refusal
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH11 (MW01)

PROJECT No:	ENRS0197	**DATE DRILLED:**	10/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	3.0.m

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
		0.5m Stick up						**Ground Surface**
0.0		Steel Monument						0-0.5 FILL,Firm CLAY, sand, dry, brown.
0.2		0-0.1m Cement						
0.4		0.1-0.6m Bentonite sanitary seal						
0.6		0.6-3.0 Graded Gravel Pack	BH11 /0.5					0.5-1.0 Firm CLAY, sand, red and brown mottling
0.8		0.0-1.0m 50mm PVC Casing	BH Dup 1 /0.5					
1.0		1.0-3.0m Slotted 50mm PVC Screen						1.0-2.0 Firm CLAY red mottled with white
1.2								
1.4								
1.6								
1.8								
2.0			BH11/2.0					2.0-3.0 Firm sandy CLAY, white and grey mottled with yellow.
2.2								
2.4								
2.6								
2.8								
3.0		3.0m Push on end cap						3.0 TDR Augar Refusal
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH12

PROJECT No:	ENRS0197	**DATE DRILLED:**	10/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	0.2m

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0								0-0.2 FILL Silty SAND, with foreign material (plastic, glass, concrete), blue metal gravel, dry, brown
0.2		No Well Constructed	BH12/0.2					0.2 TDR
0.4								
0.6								
0.8								
1.0								
1.2								
1.4								
1.6								
1.8								
2.0								
2.2								
2.4								
2.6								
2.8								
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH13

PROJECT No:	ENRS0197	**DATE DRILLED:**	10/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	0.2m

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0								0-0.2 FILL Silty SAND, with foreign material (plastic, glass, concrete cobbles), blue metal gravel, dry, brown
0.2		No Well Constructed	BH13/0.2					0.2 TDR
0.4								
0.6								
0.8								
1.0								
1.2								
1.4								
1.6								
1.8								
2.0								
2.2								
2.4								
2.6								
2.8								
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH14

PROJECT No:	ENRS0197	**DATE DRILLED:**	10/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	0.2m

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0								0-0.2 FILL Silty SAND, with foreign material (plastic, glass, concrete cobbles), blue metal gravel, dry, brown
0.2		No Well Constructed	BH14/0.2					0.2 TDR
0.4								
0.6								
0.8								
1.0								
1.2								
1.4								
1.6								
1.8								
2.0								
2.2								
2.4								
2.6								
2.8								
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH15

PROJECT No:	ENRS0197	**DATE DRILLED:**	10/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	0.5m

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0								0-0.5 Stiff CLAY and silt, dry, red / brown, with cobbles
0.2		No Well Constructed						
0.4								
0.6			BH15/0.5					0.5 TDR
0.8								
1.0								
1.2								
1.4								
1.6								
1.8								
2.0								
2.2								
2.4								
2.6								
2.8								
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH16

PROJECT No:	ENRS0197	**DATE DRILLED:**	10/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	1.0m

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0		No Well Constructed						0-0.5 Fill Stiff CLAY with silty soil, cobbles and boulders of concrete, and blue metal
0.2								
0.4								0.5-1.0 Stiff CLAY, red and white mottling
0.6								
0.8								
1.0			BH16/1.0					1.0 TDR
1.2								
1.4								
1.6								
1.8								
2.0								
2.2								
2.4								
2.6								
2.8								
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH17

PROJECT No:	ENRS0197	**DATE DRILLED:**	10/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	0.5m

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0								0-0.2 Stiff CLAY and silt, dry, red / brown, with cobbles
0.2								0.2-0.5 Stiff CLAY, red and white mottling
		No Well Constructed						
0.4								
			BH17/0.5					0.5 TDR
0.6								
0.8								
1.0								
1.2								
1.4								
1.6								
1.8								
2.0								
2.2								
2.4								
2.6								
2.8								
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH18

PROJECT No:	ENRS0197	**DATE DRILLED:**	10/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	1.0m

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0		No Well Constructed						0-0.5 tiff CLAY with silty soil, red.
0.2								
0.4								0.5-1.0 Stiff CLAY, yellow and white mottling
0.6								
0.8								
1.0			BH18/1.0					1.0 TDR
1.2								
1.4								
1.6								
1.8								
2.0								
2.2								
2.4								
2.6								
2.8								
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH19

PROJECT No:	ENRS0197	**DATE DRILLED:**	10/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	2.0m

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0		No Well Constructed						0-1.0 Stiff CLAY with silty soil, red.
0.2								
0.4								
0.6								
0.8								
1.0			BH19/1.0					1.0-2.0 Firm CLAY, red, moist
1.2								
1.4								
1.6								
1.8								
2.0			BH19/2.0					2.0 Stiff CLAY, yellow and white mottling.
2.2								2.0 TDR Refusal
2.4								
2.6								
2.8								
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH20

PROJECT No:	ENRS0197	**DATE DRILLED:**	10/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	0.5m

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0								0-0.5 Stiff CLAY and silt, dry, red / brown, with cobbles
0.2		No Well Constructed						
0.4			BH20/0.5					0.5 Stiff CLAY, red, moist, with gravel
0.6								0.5 TDR
0.8								
1.0								
1.2								
1.4								
1.6								
1.8								
2.0								
2.2								
2.4								
2.6								
2.8								
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH21

PROJECT No:	ENRS0197	**DATE DRILLED:**	10/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	3.0.m

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0		No Well Constructed						0-1.0 FILL,Firm CLAY, rounded gravel, moist, red / brown.
0.2								
0.4								
0.6			BH21/0.5 Dup 2/0.5 Trip 1/0.5					
0.8								
1.0			BH21./1.0					1.0-1,3 Firm GRAVEL CLAY red, rounded
1.2								
1.4								1.3-2.0 Stiff CLAY,red and white mottling, with gravel
1.6								
1.8								
2.0								2.0-3.0 Very Stiff CLAY,red, orange and white mottling
2.2								
2.4								
2.6								
2.8			BH21/2.5					
3.0								3.0 TDR Refusal
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH22

PROJECT No:	ENRS0197	**DATE DRILLED:**	11/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	2.5m

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0		No Well Constructed						0-1.4 FILL, CLAY with silt cobbles, concrete gravel,metal fragments, moist, red / brown.
0.2								
0.4			BH22/0.5					
0.6								
0.8								
1.0								
1.2								
1.4			BH22/1.5					1.4-1.6 Soft CLAY,red and white mottling, with gravel
1.6								1.6-2.0 Soft CLAY,orange and white mottling,
1.8								
2.0								2.0-2.5 Very Stiff CLAY,red, and white mottling
2.2								
2.4			BH22/2.5					2.5 Very Stiff CLAY with gravel,sub angular. Augar Refusal
2.6								2.5 TDR
2.8								
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH23

PROJECT No:	ENRS0197	**DATE DRILLED:**	11/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	1.5

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0		No Well Constructed						0-0.2 FILL, Silty SAND, gravel, dry, brown
0.2								0.2-1.3 FILL, Firm CLAY
0.4			BH23/0.5					
0.6								
0.8								
1.0								
1.2								
1.4								1.3-1.5 Stiff CLAY, orange and white mottling, with gravel
1.6			BH23/1.5					1.5 Firm CLAY, orange and white mottling, with gravel
1.8								1.5 TDR
2.0								
2.2								
2.4								
2.6								
2.8								
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH24

PROJECT No:	ENRS0197	**DATE DRILLED:**	11/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	1.5

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0		No Well Constructed						0-1.1 FILL, Silty SAND, gravel, dry, brown
0.2								
0.4			BH24/0.5					
0.6								
0.8								
1.0								1.1-1.3 Stiff CLAY, red and white mottling
1.2								
1.4								1.3-1.5 Firm CLAY, red, orange and white mottling, trace of gravel
1.6			BH24/1.5					1.5 TDR
1.8								
2.0								
2.2								
2.4								
2.6								
2.8								
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH25 (MW02)

PROJECT No:	ENRS0197	**DATE DRILLED:**	11/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	3.0

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
		0.7m Stick up						**Ground Surface**
0.0		Steel Monument						0-0.3 Silty SAND, gravel, dry, brown
0.2		0-0.1m Cement						
0.4		0.1-0.6m Bentonite sanitary seal 0.6-2.8 Graded Gravel Pack 0.0-0.8m 50mm PVC Casing						0.3-1.5 Stiff CLAY, red mottled with grey
0.6								
0.8		0.8-2.8m Slotted 50mm PVC Screen						
1.0								
1.2								
1.4								
1.6								1.5-2.0 Stiff CLAY orange and white mottling, moist.
1.8								
2.0								2.0-3.0 Very Stiff CLAY with red and white mottling, trace of gravel.
2.2								
2.4			BH25/2.5					
2.6								
2.8		2.8m Push on end cap						
3.0								3.0 TDR Refusal
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH26

PROJECT No:	ENRS0197	**DATE DRILLED:**	11/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	0.5

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0		No Well Constructed	BH26/0.5					0-0.5 Stiff CLAY, red / brown, with traces of gravel 0.5 TDR
0.2								
0.4								
0.6								
0.8								
1.0								
1.2								
1.4								
1.6								
1.8								
2.0								
2.2								
2.4								
2.6								
2.8								
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH27

PROJECT No:	ENRS0197	**DATE DRILLED:**	11/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	0.5

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0								0-0.5 Very Stiff CLAY, red / brown, with traces of gravel
0.2		No Well Constructed						
0.4			BH27/0.5					0.5 TDR
0.6								
0.8								
1.0								
1.2								
1.4								
1.6								
1.8								
2.0								
2.2								
2.4								
2.6								
2.8								
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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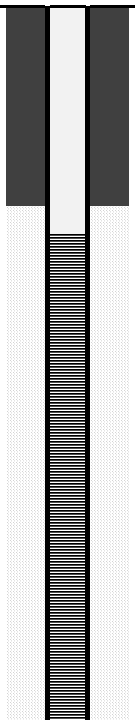
ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH28 (MW03)

PROJECT No:	ENRS0197	**DATE DRILLED:**	11/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	2.5

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
		0.7m Stick up						**Ground Surface**
0.0		Steel Monument						0-0.5 Stiff CLAY, red / brown, with traces of gravel
0.2		0-0.1m Cement						
0.4		0.1-0.4m Bentonite sanitary seal						
0.6		0.4-2.5 Graded Gravel Pack	BH28/0.5					
0.8		0.0-0.5m 50mm PVC Casing						0.5-1.2 Stiff CLAY, brown, sub angular g
1.0		0.5-2.5m Slotted 50mm PVC Screen						
1.2								1.2-2.0 Firm CLAY orange and white mottling, moist.
1.4								
1.6								
1.8								
2.0								2.0-2.5 Very Stiff CLAY with red and white mottling, trace of gravel.
2.2								
2.4								
		2.5m Push on end cap	BH28/2.5					2.5 TDR Refusal
2.6								
2.8								
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH29

PROJECT No:	ENRS0197	**DATE DRILLED:**	11/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	0.3

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0								0-0.3 Silty SAND with gravel and rock, dry, brown.
0.2		No Well Constructed	BH29/0.3 BH Trip2/0.3 BH Dup3/0.3					0.3 TDR refusal
0.4								
0.6								
0.8								
1.0								
1.2								
1.4								
1.6								
1.8								
2.0								
2.2								
2.4								
2.6								
2.8								
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH30

PROJECT No:	ENRS0197	**DATE DRILLED:**	11/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	0.5

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0		No Well Constructed	BH30/0.5					0-0.5 Silty SAND with gravel and rock
0.2								
0.4								0.5 Hard CLAY, red and white mottling
0.6								0.5 TDR refusal
0.8								
1.0								
1.2								
1.4								
1.6								
1.8								
2.0								
2.2								
2.4								
2.6								
2.8								
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH31

PROJECT No:	ENRS0197	**DATE DRILLED:**	11/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	0.5

Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0								0-0.5 GRAVEL with silt, clay and rocks
0.2		No Well Constructed						
0.4			BH31/0.5					0.5 TDR refusal
0.6								
0.8								
1.0								
1.2								
1.4								
1.6								
1.8								
2.0								
2.2								
2.4								
2.6								
2.8								
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

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ENVIRONMENTAL BOREHOLE CONSTRUCTION LOG

BORE NUMBER: BH32

PROJECT No:	ENRS0197	**DATE DRILLED:**	11/12/2019
LOCATION:	61 Farm Road Riverstone	**LOGGED BY:**	TF
CLIENT:	A.C.C.	**DRILLED BY:**	CA
SURFACE RL:	-	**DRILL METHOD:**	Mechanical Auger
EASTING:	-	**HOLE DIAMETER:**	100mm
NORTHING:	-	**DEPTH:**	0.5

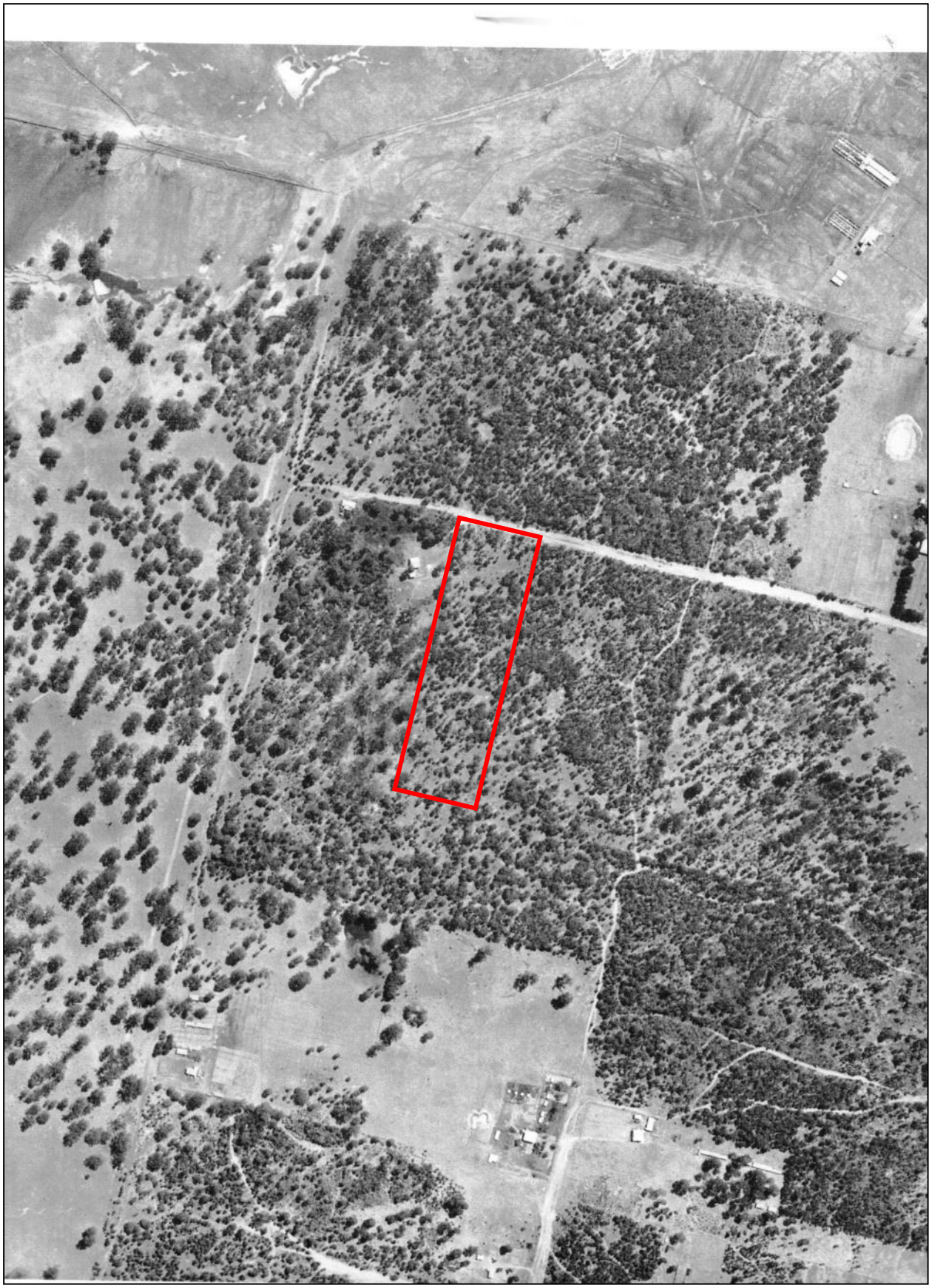
Depth Metres	Well Log	Construction	Sample ID	PID	SPT	Moisture	Graphic Log	Description
								Ground Surface
0.0		No Well Constructed						0-0.5 GRAVEL with silt and Clay
0.2								
0.4			BH32/0.5					0.5 TDR
0.6								
0.8								
1.0								
1.2								
1.4								
1.6								
1.8								
2.0								
2.2								
2.4								
2.6								
2.8								
3.0								
3.2								
3.4								
3.6								
3.8								
4.0								

Notes:
Moisture: (D) Dry (M) Moist (W) Wet
Consistency: (VS) Very Soft (S) Soft (F) Firm(St) Stiff (VSt) Very Stiff (H) Hard (Fb) Friable
Density Index: (VL) Very Loose (L) (MD) Medium Dense (VD) Very Dense

Appendix D

Historical Aerial Images

1955 Windsor Run II, 17th Oct. 232-5044



1970 Windsor Run 43, 7th July. 1912-5036

1977 (Black Council Online Maps).

2011 Sydney Wollongong, 18th May.

16/05/2013 (Land & Property Information)

06/04/2016 (Google Earth)

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05/05/2016 (Google Earth)

15/10/2016 (Google Earth)

13/11/2016 (Google Earth)

08/12/2017 (Google Earth)

31/10/2018 (Google Earth)

29/10/2019 (Nearmap)

Appendix E

Photographic Record of Site Conditions

Photograph 1: Southern Site Looking East

Photograph 2: Looking North from the south

Photograph 3: Central Site Looking South

Photograph 4: Central Site Looking North

Photograph 5: Central Site Looking North

Photograph 6: Central Site Looking South

Photograph 7: Stockpile No.1 Material

Photograph 8: Northern Site Looking North

Photograph 9: Site Buildings

Photograph 10: Site Buildings

Photograph 11: Suspected Asbestos Fragments

Photograph 12: Building Rubble

Photograph 13: Weathered rock underlying dark brown-black Fill

Photograph 14: Concrete and rubble in Fill

Photograph 15: Asbestos in soil samples sieved to 7 mm