Detailed Site Investigation – Pre-Demolition

Secondary Innovation Precinct (SIP) and Campus Commons, Pymble Ladies' College, 20 Avon Road, Pymble NSW 2073

Prepared For:	Pymble Ladies' College
Reference:	25-1971
Date:	01 May 2025

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EXECUTIVE SUMMARY

ECON Environmental Pty Ltd was commissioned by Pymble Ladies' College (the College), to prepare a Detailed Site Investigation within the proposed Secondary Innovation Precinct (SIP) and Campus Commons development area located Pymble Ladies' College, 20 Avon Road, Pymble NSW ('the subject site').

A detailed site investigation was carried out on Saturday 05 April 2025 by ECON Environmental's representative Con Kariotoglou within the proposed Secondary Innovation Precinct (SIP) and Campus Commons development area of the subject site, in accordance with the conclusions and recommendations outlined in the *ECON Environmental's Preliminary Site Investigation, Secondary Innovation Precinct (SIP) and Campus Commons development area located Pymble Ladies' College, 20 Avon Road, Pymble NSW 2170, Ref: 25-1961, dated 24 March 2025.*

Previous Preliminary Site Investigation Findings

Based on the preliminary site investigation's findings and given that the proposed SIP and Campus Commons development involves the demolition of current site structures and the excavation of insitu soil material, ECON Environmental concludes that the current site conditions may potentially pose a human health and environmental risk, and hence the Preliminary Site Investigation has triggered the need to undertake a Detailed Site Investigation prior to, and after, the controlled demolition of the current structures is completed, and before the commencement of any excavations works.

Therefore, it was the opinion of ECON Environmental, that a Detailed Site Investigation was necessary, subject to the following recommendations:

- *A sampling and analysis program be implemented as part of a **Detailed Site Investigation (DSI)**, focusing on the identified CoPCs outlined in section 8.1 of this report, using a residential HIL-A criteria. The sampling program must consider the NSW EPA's Consultants reporting on Contaminated Land and AS4882.1, to target the identified PAECs and meet the minimal sampling location criteria, and take into consideration a sampling program prior to, and after, the controlled demolition of current building structures and their related building footprint areas;*

Based on the data and evidence collected during this Detailed Site Investigation, the findings of this investigation are as follows:

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Proposed Development or Intended Land Use

It is our understanding that this Detailed Site Investigation Report is required by the clients to seek development approval for the Secondary Innovation Precinct (SIP) and Campus Commons at Pymble Ladies' College. The project comprises demolition of several existing buildings and the construction of the Secondary Innovation Precinct, associated landscaping and Campus Commons at the Pymble Ladies College. The SIP is a five-storey building that will consolidate STEM based learning opportunities within the College.

Site Assessment Criteria

As Pymble Ladies College consists of Boarding, Junior and Secondary Schools, Sports and Outdoor Playing Fields (e.g., Ovals) and gardens with accessible soils, the minimum Site Assessment Health Investigation Levels of **HIL 'A'** has been adopted for this project.

Field Observations

No visible areas of environmental concern were noted during the site inspection and fieldwork of this Detailed Site Investigation.

Soil Laboratory Results

All twenty-three (23) soil samples, plus three (3) QA/QC sample collected (BH1 to BH23) within the proposed SIP and Campus Commons development area on Saturday 05 April 2025, were reported by the laboratory to have concentrations **BELOW** the adopted site assessment criteria for HIL 'A', land use, as per the NEPM, 2013.

Potential Risks to Onsite and Offsite Receptors

The current risk of exposure of contaminants to onsite/offsite human and environmental receptors is considered **LOW** as no contaminants of concern were identified within underlying soils within the existing proposed development area of the subject site.

Recommendations

Based on the findings of this Detailed Site Investigation, and with reference to the ECON Environmental's Preliminary Site Investigation's (March 2025) conclusions and recommendations, it is the opinion of ECON Environmental, in accordance with relevant Australian Standards and guidelines, and in accordance with the technical requirements of the Secretary's Environmental Assessment Requirements (SEARs) and in support of the preparation of an Environmental Impact Statement (EIS)

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and State Significant Development Application (SSD- 79146716) to the Department of Planning, Housing and Infrastructure (DPHI), that the proposed Secondary Innovation Precinct (SIP) and Campus Commons development area located within Pymble Ladies' College, 20 Avon Road, Pymble NSW, currently DOES NOT currently contain any chemical contaminants of concern, nor any areas of environmental concern.

Therefore, based on the findings of this Detailed Site Investigation, it is ECON Environmental's opinion the proposed Campus Commons area is currently SUITABLE for its proposed development and land use.

However, the following recommendations are warranted within the nominated Isabel Harrison, Dorothy Knox, John Vicars and Robert Vicars buildings structures, to be demolished as part of the proposed development, and their related building footprint areas, within the proposed Campus Commons development area:

- An addendum sampling and analysis program, is to be implemented, after the controlled demolition of the nominated Isabel Harrison, Dorothy Knox, John Vicars and Robert Vicars Buildings structures and their related building footprint areas, focusing on the identified CoPCs outlined in section 8.1 of the ECON PSI (March 2025) report, within building footprint areas, using a residential HIL-A criteria;
- If potential contaminants of concern are identified within the nominated demolished building footprint areas, an appropriate remedial / management strategy is to be developed, culminating in preparation of a **Remedial Action Plan (RAP)** in accordance with EPA guidelines. The RAP must be prepared by a suitable qualified and experienced environmental consultant detailing the remediation and validation processes to be undertaken for any contaminants identified within the building footprint areas onsite, to ensure the site is made suitable for its current existing development and land use;
- Given the potential age of the site buildings, that are required to be demolished, including the existing Isabel Harrison, Dorothy Knox, John Vicars and Robert Vicars Buildings, within the proposed SIP and Campus Commons development area, a Hazardous Materials Report and Register was prepared by CETEC Pty Ltd for the nominated buildings, please refer to the CETEC HAZMAT report, Ref: P25010061, dated 13 February 2025;
- Any identified Hazardous/Asbestos Containing Materials need to be removed in accordance with guidelines and with the CETEC HAZMAT (2025) report, and a **Clearance Inspection** be issued by a qualified environmental consultant, or equivalent, prior to any demolition work being undertaken;
- If any proposed soil is to be excavated, as part of the proposed development, and requires offsite disposal as waste, it will require a waste classification in accordance with NSW EPA's Waste Classification Guidelines Part 1-4: Classifying Waste 2014; and
- In the event of unexpected finds being excavated or exposed onsite during site works, such as discovering buried asbestos-containing materials, underground storage tanks, or odorous and/or stained soil uncovered during works, all site works must cease, and ECON Environmental must be notified immediately for further investigation and appropriate action.

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1. INTRODUCTION

1.1 Background

ECON Environmental Pty Ltd was commissioned by Pymble Ladies' College (the College), to prepare a Detailed Site Investigation within the proposed Secondary Innovation Precinct (SIP) and Campus Commons development area located Pymble Ladies' College, 20 Avon Road, Pymble NSW ('the subject site').

A detailed site investigation was carried out on Saturday 05 April 2025 by ECON Environmental's representative Con Kariotoglou within the proposed Secondary Innovation Precinct (SIP) and Campus Commons development area of the subject site, in accordance with the conclusions and recommendations outlined in the *ECON Environmental's Preliminary Site Investigation, Secondary Innovation Precinct (SIP) and Campus Commons development area located Pymble Ladies' College, 20 Avon Road, Pymble NSW 2170, Ref: 25-1961, dated 24 March 2025.* Details of the findings are presented within the body of this report, as well as an assessment of significance with regards to the findings of the investigation.

This report was completed in accordance with the *Guidelines for Consultants Reporting on Contaminated Sites, NSW EPA, May 2020,* and in accordance with the technical requirements of the Secretary's Environmental Assessment Requirements (SEARs) and in support of the preparation of an Environmental Impact Statement (EIS) and State Significant Development Application (SSD- 79146716) to the Department of Planning, Housing and Infrastructure (DPHI), for the proposed Secondary Innovation Precinct (SIP) and Campus Commons development area located within Pymble Ladies' College, 20 Avon Road, Pymble NSW.

1.2 Preliminary Site Investigation's Findings

Based on the preliminary site investigation's findings and given that the proposed SIP and Campus Commons development involves the demolition of current site structures and the excavation of insitu soil material, ECON Environmental concludes that the current site conditions may potentially pose a human health and environmental risk, and hence the Preliminary Site Investigation has triggered the need to undertake a Detailed Site Investigation prior to, and after, the controlled demolition of the current structures is completed, and before the commencement of any excavations works.

Therefore, it was the opinion of ECON Environmental, that a Detailed Site Investigation was necessary, subject to the following recommendations:

- *A sampling and analysis program be implemented as part of a **Detailed Site Investigation (DSI)**, focusing on the identified CoPCs outlined in section 8.1 of this report, using a residential HIL-A criteria. The sampling program must consider the NSW EPA's Consultants reporting on Contaminated Land and AS4882.1, to target the identified PAECs and meet the minimal sampling location criteria, and take into consideration a sampling program prior to, and after,*

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the controlled demolition of current building structures and their related building footprint areas;

1.3 Brief Proposed Project Description

The project comprises demolition of several existing buildings and the construction of the Secondary Innovation Precinct, associated landscaping and Campus Commons at the Pymble Ladies College. The SIP is a five-storey building that will consolidate STEM based learning opportunities within the College.

1.4 Detailed Proposed Project Description

The proposal seeks development approval for the Secondary Innovation Precinct (SIP) and Campus Commons at Pymble Ladies' College. The development comprises:

- Demolition of the existing Isabel Harrison, Dorothy Knox, John Vicars and Robert Vicars Buildings.
- Tree removal.
- Excavation of the basement level.
- Construction of the new five storey SIP building of RL 146.98m and including:
    - General Learning Spaces.
    - STEM teaching spaces.
    - Senior student facilities.
    - Function spaces.
    - Food and beverage facilities.
    - Associated amenities.
    - Storage and building services.
- Within the basement, there will be one loading space (for utes and vans) for services and deliveries, accessible from the existing service vehicle access road. There will be no car parking. Minor kerb realignment of the existing access road to the east of the SIP.
- Landscaping on the outdoor terraces and surrounding the building.
- The project also includes the Campus Commons, a significant garden lawn and amphitheatre connecting the SIP precinct to the rest of the campus.

1.5 Detailed Site Investigation Objectives

The objectives of this Detailed Site Investigation are to:

- Identify potential areas where contamination may have occurred from current and historical activities within the subject site,
- Identify potential contaminants associated with potentially contaminating activities,

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- Provide soil sampling and analysis to determine the lateral extent and vertical depth of contamination onsite, if identified,
- Assess the suitability of the investigative site for redevelopment based on its current condition and the findings of this investigation, and
- Assess the need for further remediation works and investigations.

1.6 Scope of Works

The scope of works included the following:

- A site inspection of the subject site and review the physical site settings and site conditions based on the site inspection,
- Research and review the information available, including previous environmental investigations,
- Development of a preliminary Conceptual Site Model (CSM) to demonstrate the interactions between potential sources of contamination, exposure pathways and human/ecological receptors identified,
- A targeted soil boring/sampling investigative study – formulating and conducting a sampling plan and borehole investigation,
- Laboratory analysis results from soil sampling - findings and comparison to regulatory guidelines,
- Field and laboratory Quality Assurance/Quality Control (QA/QC),
- Reporting in accordance with the associated legislations and guidelines, and
- Recommendations for additional investigations should any data gaps be identified or possible strategies for the management of the site, where relevant.

1.7 Legislative Requirements

This DSI report was undertaken in accordance with the following regulatory framework and guidelines:

- ANZG (2018) Australia and New Zealand Guidelines for Fresh and Marine Water Quality, Australian and New Zealand Governments and Australian State and Territory Governments, Canberra ACT, Australia, August 2018;
- ANZG (2018) Australian and New Zealand Guidelines for Fresh and Marine Quality, Australian and New Zealand Governments and Australian state and territory governments, 2018:
- Contaminated Land Management Act (1997).

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- Department of Urban Affairs and Planning, NSW Environmental Protection Authority, Managing Land Contamination – Planning Guidelines – SEPP 55 – Remediation of Land, 1998:
- Environmental Planning and Assessment Act 1979:
- Guidelines for the Assessment and Management of Groundwater Contamination (NSW Department of Environment and Conservation (DEC), 2007:
- Managing Land Contamination Planning Guidelines SEPP 55 – Remediation of Land (Department of Urban Affairs and Planning & NSW Environment Protection Authority (EPA), 1998:
- National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B1 – Guidelines on Investigation Levels for Soil and Groundwater, 2013:
- National Environment Protection (Assessment of Site Contamination) Measure 1999, Schedule B2 – Guidelines on Site Characterisation, 2013:
- NSW Department of Environment and Conservation, Guidelines for the Assessment and Management of Groundwater Contamination, 2007;
- NSW Department of Planning and Environment, State Environmental Planning Policy (resilience and Hazards), Chapter 4, 2022;
- NSW Environmental Protection Authority, Contaminated Land Management, Guidelines for the NSW Site Auditor Scheme (3rd Edition), 2017;
- NSW Environmental Protection Authority, Guidelines on the Duty to Report Contamination under Contaminated Land Management Act, 1997;
- NSW Environmental Protection Authority, Sampling Design Guidelines, 2022;
- NSW Environmental Protection Authority, Excavated Natural Material Order and Exemption, 2014;
- NSW Environmental Protection Authority, waste Classification Guidelines Parts 1-4: Classifying Waste, 2014:
- NSW Environmental Protection Authority, Consultants Reporting on Contaminated Land. Contaminated Land Guidelines, 2020;
- Water Management Act 2000;
- Western Australia Department of Health, Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia, 2009;
- Work Health and Safety Act, 2011; and
- Work Health and Safety Regulation, 2017.

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2. SITE IDENTIFICATION

2.1 Site Identity

The subject site is located south of Avon Road and set amongst Low and Medium and High Density Residential properties. Figures 1 and 2, Appendix A shows an aerial photograph of the subject site relative to its surrounding land.

Table 1: Site Identification	
Street Address	20 Avon Road Pymble NSW 2073
Lot and DP Number (current)	Lot 1 in DP69541, and Lots 11-17 in DP7131
Subject Site Area	20.25ha *(approx.)*
SIP & CC Works Project Site Area	4,000 sqm *(approx.) – [GFA 10,300 sqm (approx.)]*
Zoning	SP2 – Infrastructure - Educational Establishment R2 – Low Density Residential
Local Government Area	Ku-Ring-Gai Council

2.2 Key Features of the Subject Site

- The site accommodates the existing Pymble Ladies' College which accommodates Kindergarten to Year 12 students.
- Vehicular access to the College is provided via separate ingress and egress driveways on the northern and western sections of Avon Road.
- Pedestrian access is provided through multiple gates along Avon Road.
- The project area that is subject to this SSDA is located at the entrance to the College west of the oval.
- The project area slopes down from south to north with a fall from RL 124.50 at the southern corner to RL 116 at the north west corner.

2.3 Key Features of the Locality

The development context surrounding the site is a leafy suburban environment, predominantly made up of detached residential properties set within expansive gardens and along avenues lined with mature trees.

Recent developments of moderate-scale residential apartment buildings occur closer to the railway corridor. Two storey commercial establishments are located near to Pymble train station, specifically along the Pacific Highway and on the northern flank of the railway line.

- The site is located approximately 19km north west of the Sydney Central Business District.
- The College is situated approximately 200m from Pymble train station, situated on Pacific Highway and Pymble town centre.

2.4 Surrounding Land Use

A summary of surrounding features and / or land uses noted during a review of desktop information and the site inspected is provided in the table below:

Table 2: Surrounding Land Uses	
North	Avon Road and Pacific Highway (approximately 400m).
East	Residential uses, accommodating a mixture of dwelling houses and residential flat buildings.
South	Avondale Golf Course.
West	Avon Road, beyond which is a residential area characterised by detached dwelling houses.

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3. ENVIRONMENTAL SETTINGS

The existing environmental settings relevant to this Preliminary Site Investigation are summarised in the following previous environmental investigations undertaken within the subject site:

- *JK Geotechnics, Geotechnical Investigation for Proposed Secondary Innovation Precinct and Campus Commons at Pymble Ladies College, Avon Road, Pymble NSW, Ref: 34901SCrptRev2, dated 28 February 2025.*
- *Greywacke Geotechnics, Preliminary Acid Sulfate Soils Assessment, Proposed Senior School Building, Pymble Ladies College, Avon Road, Pymble NSW, Ref: ECOE0977-GEO AA, dated 6 December 2024.*

The following sections summarise the existing environment with respect to soil and water, using relevant information from the abovementioned previous investigation reports.

3.1 Topography

Imagery available on the Department of Lands and Spatial Information Exchange website and plans provided by the client show that the site is located at approximate elevations between 116, AHD (Australian Height Datum) and 126m AHD. The site terrain is moderately sloping down from east to west with slopes up to 14^{O}.

The topography of the surrounding area comprises low rolling and steep hills. Local relief 50-120m slopes 5-20%.Convex narrow (20-300m) ridges and hillcrests grade into moderately inclined side slopes with narrow concave drainage lines. Moderately inclined slopes of 10-15% are the dominant landform elements.

3.2 Hydrogeology

A review of groundwater bores within 2km radius of the site has been undertaken by Lotsearch Pty Ltd. Eight (8) groundwater boreholes were located within a 500m radius of the subject site. Those within 2km indicated a groundwater depth 13.00 to 120.00m BGL with standing water levels at 4.50m BGL. However, the corresponding topography across the 2km radius also varies significantly. Direction of groundwater flow is difficult to ascertain without reference AHD, but generally groundwater flows towards the south.

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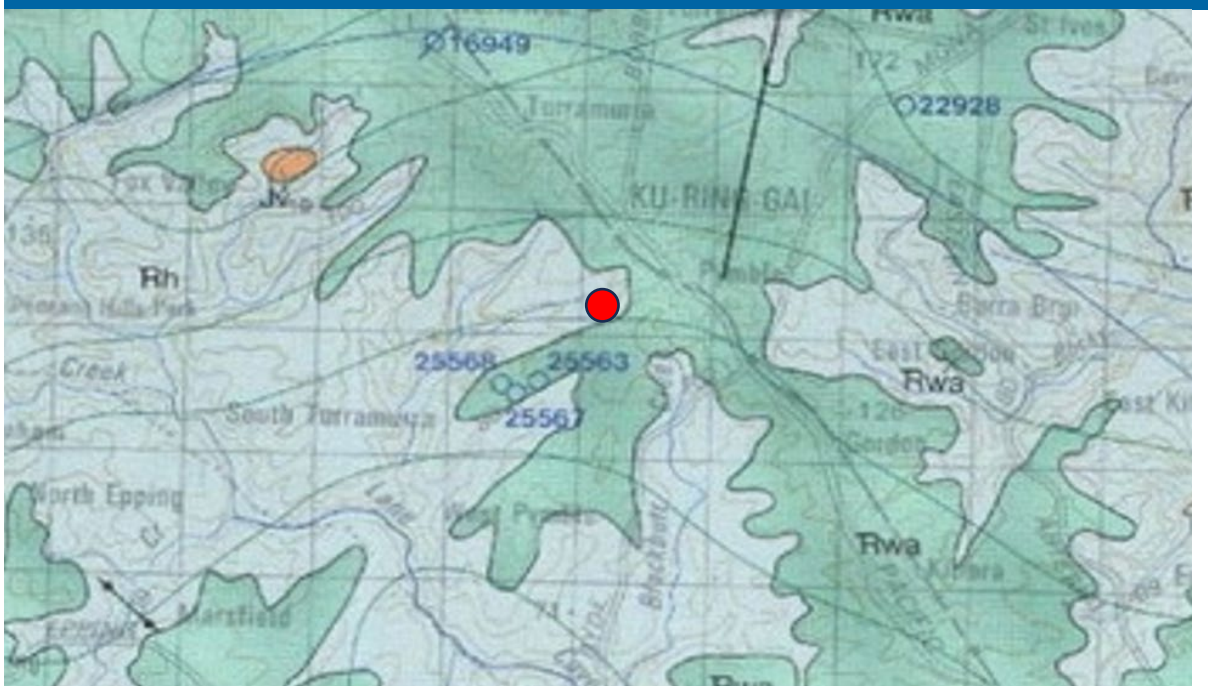
3.3 Regional Geology

Geological Map (Seamless Geology) provided by the Department of Primary Industries and Regional Development – NSW Resource online portal shows that the site is primarily underlain by Hawkesbury Sandston (Rh) and contains medium to coarse grained quartz, sandstone with very minor shale and laminite lenses.

A geology map excerpt is provided in Figure 3 below with the location of the subject site.

Figure 1: Geological Excerpt



Hawkesbury Sandstone consists of medium to coarse-grained quartz sandstone with minor shale and laminite lenses.

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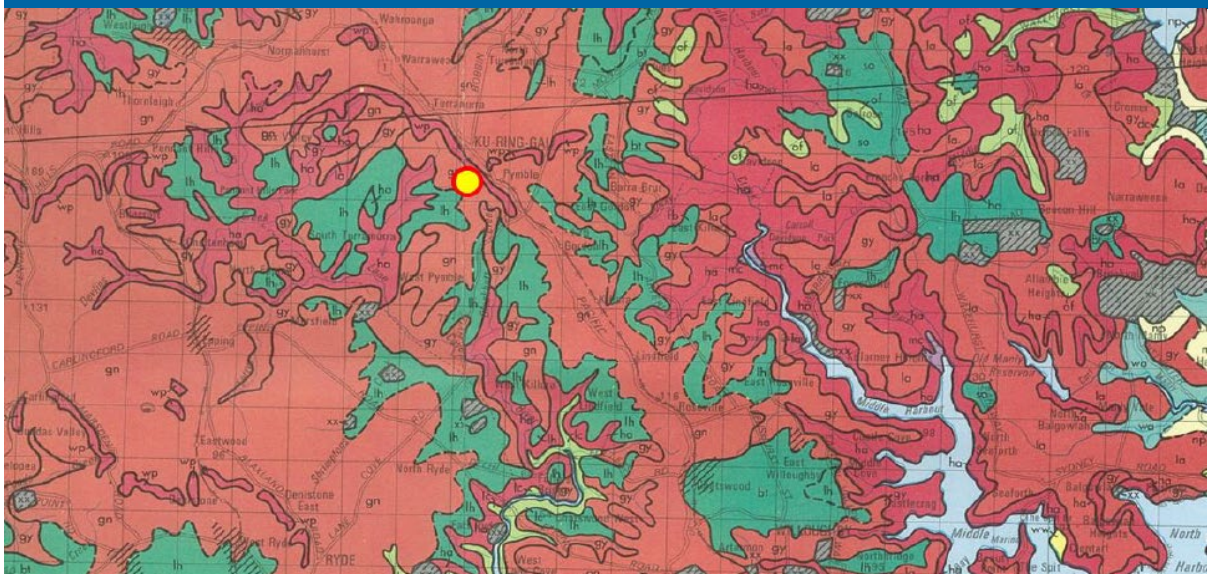
3.4 Soil Landscapes

The Soil Landscapes of the Wollongong-Port Hacking 1:100,000 Sheet indicates the site is located within the Glenorie (gn) subgroup. A map excerpt of the Wollongong-Port Hacking Soil Landscape map is provided in Figure 4 below.

Figure 2: Soil Landscape Map Excerpt



Glenorie Landscape (Erosional) – Undulating to rolling hills on Wianamatta Group Shales. Local relief 50m-80m, slopes 5%-20%. Narrow ridges, hillcrests and valleys. Extensively cleared tall open-forest (wet sclerophyll forests).

Soils – Shallow to moderately deep (<100cm) Red Podzolic Soils on crests; moderately deep (70-150cm) Red and Brown Podzolic Soils on upper slopes: deep (>200cm) Yellow Podzolic Soils and Gleyed Podzolic Soils along drainage lines.

Limitations – High soil erosion hazard, localised impermeable highly plastic soil, moderately reactive.

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3.5 SIP and Campus Commons Precinct Geotech Findings

The geotechnical report provided by *JK Geotechnics (Ref: 34901SCrptRev2, dated 28 February 2025)* indicated that the boreholes encountered fill covering residual silty clay graded into weathered siltstone and sandstone bedrock. Summary of the sub-surface profile within the subject site is described below:

Pavements: Pavers with a thickness of 40mm overlying concrete with thicknesses ranging from 100mm to 250mm were encountered in BH2 to BH4. In BH3 and BH4 a sand blinding layer was encountered between the pavers and the concrete. At the surface of BH103 a concrete pavement with a thickness of 140mm was encountered. BH101, BH102 and BH104 encountered asphaltic concrete (AC) with thicknesses ranging from 20mm to 40mm. Concrete was encountered below the AC within BH102 and BH104 and had thicknesses of 180mm and 160mm, respectively.

Fill: Fill was encountered in all boreholes to depths ranging from 0.4m to 2.3m. The fill predominantly comprised silty clay, with varying proportions of gravel. The gravel component within the fill comprised igneous, siltstone and ironstone gravel. Based on the SPT 'N' values, the fill was assessed to be poorly or moderately compacted with some localised well compacted bands.

Residual Silty Clay: Residual silty clay assessed to mostly be of medium to high plasticity and of very stiff to hard strength extended to the underlying siltstone bedrock.

Weathered Sandstone and Siltstone: Weathered siltstone bedrock was encountered at depths ranging from 0.9m to 4.2m, with the level of the surface of the rock falling down towards the north from about RL121.8m in BH1 to about RL111m in BH102. The siltstone was initially assessed to be extremely weathered to highly weathered and of hard (soil strength) to very low strength. Within the cored portions of the boreholes, the weathering and strength improved with depth to generally moderately or slightly weathered and of low to medium or medium to high strength below depths ranging from 5.2m (~RL110.8m) to 10.7m (or ~RL115.1m).

In BH3, BH4 and BH103 interbedded siltstone/sandstone, laminite and sandstone were encountered below the siltstone profile. The cored rock in BH3 and BH4 was of higher strength and contained fewer defects that the rock cored in BH1 and BH2. In BH102 and BH104, slightly weathered or fresh sandstone bedrock was encountered below the siltstone profile. The sandstone bedrock was assessed to be generally of medium to high strength.

Defects within the cored bedrock comprised extremely weathered seams of generally less than 110mm, sub horizontal bedding partings, and joints inclined at up to 90°. Significant core loss zones were also noted within BH1, BH101 and BH104 which are indicative of extremely weathered bands.

The following table summarises the rock levels and the rock classification in the cored boreholes in accordance with Classification of Sandstone and Shales in the Sydney Region: Forty Year Review by Pells et al 2019.

Groundwater: Groundwater seepage was not encountered during auger drilling of the boreholes, which were dry on completion of auger drilling. Once coring is commenced water is introduced which

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obscures the true groundwater level. The groundwater within the monitoring wells allowed to stabilise over several weeks and return visits were made to measure the groundwater levels.

Campus Commons: All boreholes encountered fill to depths ranging from 0.5m to 0.8m. With exception of BH202, the fill initially comprised silty sand to depths ranging from 0.1m to 0.4m and then silty clay. In BH2 silty clay fill was encountered directly below the Aspahltic Concrete (AC) surface. The fill contained varying fractions of slag, ash, ironstone gravel and root fibres. Based on DCP tests, the fill was assessed to be poorly to moderately compacted.

Residual silty clay was encountered within all boreholes and was assessed to be of medium to high plasticity and of stiff to very stiff strength. The boreholes refused within the clays at depths ranging from 0.97m to 1.53m.

The DCP tests refused at depths ranging from 1.5m (DCP202) to 2.1m (DCP207), but since these tests do not provide sample recovery the nature of the material that caused refusal cannot be confirmed. Refusal may have occurred on the surface of the underlying siltstone, but it may also have occurred on ironstone layers within the residual silty clay. We note that we have previously drilled boreholes to the north-east of the site for the proposed secondary school building and weathered siltstone was encountered at depths ranging from 0.9m to 4.2m.

Groundwater was not encountered during or on completion of drilling of the boreholes.

Reference should be made to the borehole logs, DCP test results within the *JK Geotechnics report (Ref: 34901SCrptRev2, dated 28 February 2025)* for detailed descriptions of the subsurface conditions encountered.

Laboratory Test Results: The point load strength index test results showed reasonably good correlation with our field assessment of rock strength. The Unconfined Compressive Strength (UCS) of the rock core, estimated from the point load strength index test results, generally ranged from 1MPa to 36MPa with some locally higher results of up to 60MPa.

The pH values on samples of the fill, residual silty clay and weathered sandstone ranged from 4.7 to 6.0, indicating acidic soil conditions. The sulphate contents ranged from 20mg/kg to 57mg/kg, the chloride contents ranging from <10mg/kg to 38mg/kg, and the resistivity ranged from 16,000ohm.cm to 51,000ohm.cm. Based on these results, the fill would be classified as 'non-aggressive' and the residual soil and bedrock would be classified as 'mild' exposure classification for concrete piles in accordance with Table 6.4.2(C) of AS2159-2009 'Piling – Design and Installation'. The fill, residual soil and bedrock samples would all classify as 'non-aggressive' exposure classification for steel piles in accordance with Table 6.5.2(C) of AS2159-2009.

Excavation and Groundwater: Due to the sloping nature of the site and the proposed stepped profile of the lower levels, excavations to a maximum depth of about 5m will be required to achieve the proposed Lower Ground Floor and Partial Basement level. Excavation to such depths is expected to encounter concrete, clayey fill, residual soils and weathered siltstone bedrock.

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Excavation of the soils and upper rock of up to very low strength should be achievable using conventional excavation equipment, such as the buckets of hydraulic excavators. Some ripping of higher strength bands may be necessary if they are encountered within the weaker rock.

Excavation of bedrock of low strength or higher strength will require assistance with rock excavation equipment and is likely to be required for a limited depth along the south-eastern side of the site. Such equipment may comprise hydraulic rock hammers, ripping hooks, rotary grinders or rock saws. Hydraulic rock hammers must be used with care due to the risk of damage to the neighbouring school buildings and accessways. If hydraulic rock hammers are to be used the vibrations transmitted to the nearby buildings should be quantitatively monitored at least at the start of rock hammer operation to confirm that the transmitted vibrations are within acceptable limits. If during the initial monitoring the transmitted vibrations are close to acceptable limits full time monitoring may then be warranted. Reference should be made to the attached Vibration Emission Design Goals sheet for acceptable limits of transmitted vibrations. Where the transmitted vibrations are excessive it would be necessary to change to alternative excavation equipment, such as a smaller rock hammer, ripping hooks, rotary grinders or rock saws.

No groundwater seepage was encountered during auger drilling of the boreholes, but groundwater was measured within the monitoring wells between RL123.2m and RL113.8m, which is likely intersect the proposed lower ground floor level of RL121.1 and also the partial basement with a finished floor level of RL116m. The measured groundwater levels fall towards the north-west and given sites position on the slope we expect these groundwater levels represent ephemeral flow across the soil/rock interface and through joints within the rock. Therefore, we expect seepage to occur into the excavation and this would tend to occur along the soil/rock interface and through joints and bedding partings within the rock, particularly during and following rainfall and that initial flows will diminish with time. Any such seepage that does occur should be able to be controlled during construction using gravity drainage and conventional sump and pump techniques. In the long term, drainage should be provided behind all retaining walls and below the lowest floor slab. The completed excavation should be inspected by the hydraulic consultant to confirm that the designed drainage system is adequate for the actual seepage flows.

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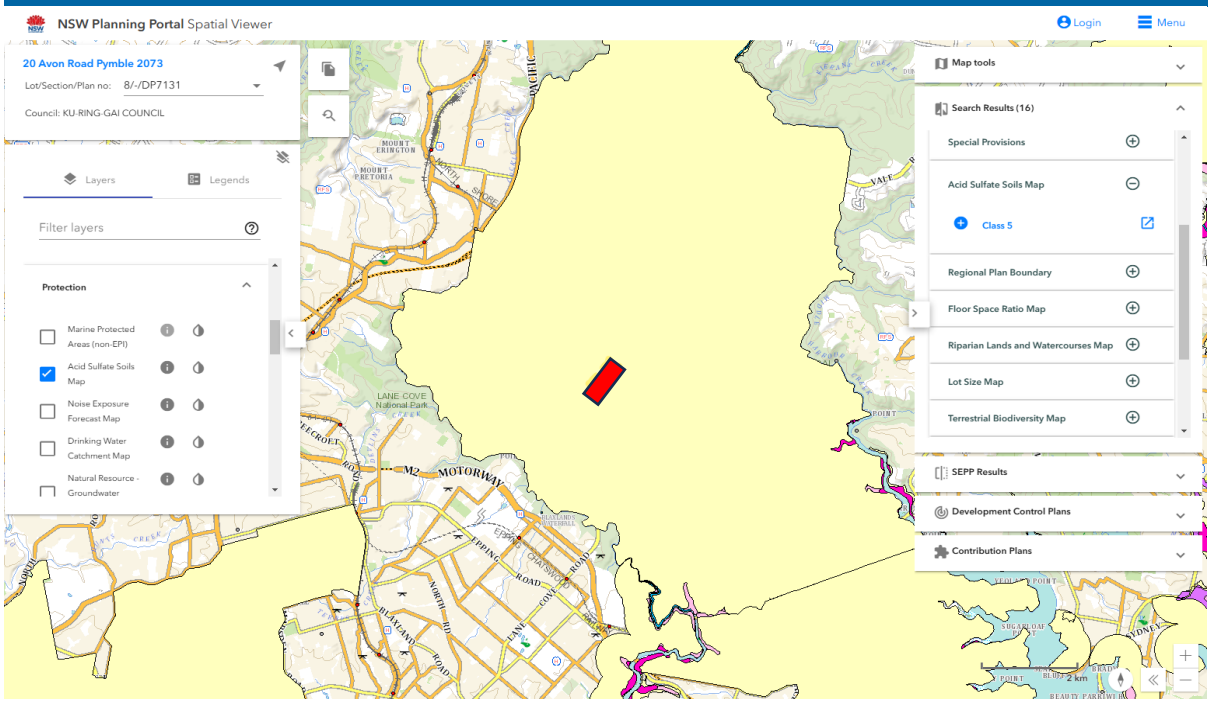
3.6 Acid Sulfate Soils

The geotechnical report provided by *Greywacke Geotechnics (Reference No: ECOE0977-GEO AA, dated 6th December 2024)* indicated that the subject site is located within a Class 5 of the Acid Sulfate Soils Planning Map. Summary of the sub-surface profile within the subject site is described below:

Figure 3: Acid Sulfate Soil Planning Map Excerpt



If the proposal is likely to disturb areas which meet any criteria (or are mapped as having a probability of acid sulfate soils being present) soil and water indicators should be checked to determine if acid sulfate soils are likely to be present.

If activities are proposed in locations which do not meet these geomorphic or site criteria and are not ins areas mapped as Class 1-4 on the planning maps, proponents can be confident that acid sulfate soils will not be present in the landscape. Soils of older geological age or those not derived from sedimentary deposition can be excluded from further investigation (unless very deep disturbances is proposed).

The topographic and geomorphic features of the subject site indicate that the occurrence of ASS at the proposed development site is LOW. As such, development and construction activities are UNLIKELY to be impacted by acid sulfate soil materials.

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4. SUMMARY OF PREVIOUS ENVIRONMENTAL INVESTIGATIONS

The following previous report was reviewed specifically for this Detailed Site Investigation for the subject site, and is the principal document used in the preparation of this DSI report, and is summarised below:

- *ECON Environmental, Preliminary Site Investigation, Secondary Innovation Precinct (SIP) and Campus Commons development area located Pymble Ladies' College, 20 Avon Road, Pymble NSW 2073, Ref: 25-1961, dated 24 March 2025.*

4.1 ECON - Preliminary Site Investigation (March 2025)

ECON Environmental Pty Ltd was commissioned by Pymble Ladies' College (the College), to prepare a Preliminary Site Investigation within the proposed Secondary Innovation Precinct (SIP) and Campus Commons development area located Pymble Ladies' College, 20 Avon Road, Pymble NSW ('the subject site'), in accordance with the technical requirements of the Secretary's Environmental Assessment Requirements (SEARs) and in support of the preparation of an Environmental Impact Statement (EIS) and State Significant Development Application (SSD- 79146716) to the Department of Planning, Housing and Infrastructure (DPHI).

The project comprises demolition of several existing buildings and the construction of the Secondary Innovation Precinct, associated landscaping and Campus Commons at the Pymble Ladies College. The SIP is a five-storey building that will consolidate STEM based learning opportunities within the College.

An exposure assessment was conducted as per NEPM Schedule B4 guidelines for the SIP and Campus Commons development site within Pymble Ladies College, 20 Avon Road, Pymble NSW. The 4,000 sqm project site is planned for development, including the anticipated excavation of soils. The assessment identified three (3) Potential Areas of Environmental Concern (PAECs):

- **PAEC1:** consists of potential uncontrolled fill for farming agricultural land use, to raise site levels, and for construction building pads, containing potential contaminants such as Heavy Metals, BTEXN, PAH, OCP/OPP, PCB and Asbestos;
- **PAEC2:** stems from the potential spraying of pesticides within historical farming agricultural parcels of lands within northwest corner 200m from the SIP development site, the central eastern boundary 140m from the SIP development site, and the southern portion of the site 260m from the SIP development site between 1943-1982. Historical spraying of pesticides around and beneath building structures onsite.
- **PAEC3:** may relate to the aged and minorly damaged site buildings containing Asbestos and Lead Paint.

A review of historical imagery, data, and observations during the site inspection revealed multiple potential contamination sources. These include the importation of potential hazardous containing fill

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material used historically onsite, deteriorating potentially asbestos-containing materials (PACM), and evidence of onsite and nearby business activities that may have potentially impacted the subject site.

Based on the Preliminary Site Investigation's findings and given that the proposed SIP and Campus Commons development involves the demolition of current site structures and the excavation of insitu soil material, ECON Environmental concludes that a further detailed investigation of soils is required prior to, and after, the controlled demolition of the current structures is completed, and before the commencement of any excavations works.

It is the opinion of ECON Environmental, and in accordance with relevant Australian Standards and guidelines that the proposed SIP and Campus Commons development area within the subject site located at Pymble Ladies College, can be made suitable for its proposed development subject to the following recommendations:

- A sampling and analysis program be implemented as part of a **Detailed Site Investigation (DSI)**, focusing on the identified CoPCs outlined in section 8.1 of this report, using a residential HIL-A criteria. The sampling program must consider the NSW EPA's Consultants reporting on Contaminated Land and AS4882.1, to target the identified PAECs and meet the minimal sampling location criteria, and take into consideration a sampling program prior to, and after, the controlled demolition of current building structures and their related building footprint areas;
- If potential contaminants of concern are identified during the preparation of the Detailed Site Investigation within the SIP and Campus Commons proposed development area of the subject site, an appropriate remedial / management strategy is to be developed, culminating in preparation of a **Remedial Action Plan (RAP)** in accordance with EPA guidelines. The RAP must be prepared by a suitable qualified and experienced environmental consultant detailing the remediation and validation processes to be undertaken for any contaminants identified onsite, to ensure the site is made suitable for its current existing development and land use.
- Given the potential age of the site buildings within the proposed SIP and Campus Commons development area, that are required to be demolished, including the existing Isabel Harrison, Dorothy Knox, John Vicars and Robert Vicars Buildings, a re-demolition **Hazardous Material Survey** needs to be undertaken to prevent any potential exposure to hazardous building material during demolition works;
- Any identified ACM material needs to be removed in accordance with guidelines, and a **Clearance Inspection** be issued by a qualified environmental consultant, or equivalent, prior to any demolition work being undertaken;
- If any proposed soil is excavated as part of the development and requires offsite disposal as waste, it will require classification in accordance with NSW EPA's Waste Classification Guidelines Part 1-4: Classifying Waste 2014.

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5. CONCEPTUAL SITE MODEL (CSM)

5.1 Potential Contamination Sources

Potential sources of contamination at the proposed development site and the Contaminants of Potential Concern (CoPC) are shown in the following table, using the information gathered through this assessment and qualitative judgement based on consultant experience.

Table 3: Potential Sources of Contamination within the proposed SIP and Campus Commons area

Source	Potential Area of Environmental Concern (PAEC)	CoPC
Potential uncontrolled fill	**PAEC1:** Importation of soil of unknown quality for farming agricultural land use, to raise site levels, and for construction building pads.	Heavy Metals, TRH, BTEXN, PAH, OCP/OPP, PCB, Asbestos
Potential historical spraying of pesticides	**PAEC2:** Spraying of pesticides within historical farming agricultural parcels of lands within northwest corner 200m from the SIP development site, the central eastern boundary 140m from the SIP development site, and the southern portion of the site 260m from the SIP development site between 1943-1982. Historical spraying of pesticides around and beneath building structures onsite.	Heavy Metals, OCP/OPP
Potential hazardous building materials from aged site building structures	**PAEC3:** Flaking and deterioration resulting in deposits to surfaces / shallow soils	Asbestos and Lead

Heavy Metal - Arsenic, Chromium, Cadmium, Copper, Lead, Nickel, Zinc and Mercury
TRH – Total Recoverable Hydrocarbons
BTEXN – Benzene, Toluene, Ethylbenzene, Xylene and Naphthalene
PAH – Polycyclic Aromatic Hydrocarbons
OCP/OPP – Organochlorine, Organophosphate Pesticides
PFAS – Per-and Poly-Fluoroalkyl Substances, and
PCB – Polychlorinated Biphenyls

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5.2 Potential Migration Pathways

Currently the site presents limited contaminant migration pathways and potential mechanisms associated with contamination. Once intended earthworks are undertaken, the potential contaminant migration pathways and mechanisms considered include:

- Soil ingestion:
- Dermal contact;
- Inhalation of vapours;
- Direct uptake;
- Vertical migration;
- Migration via underground service trenches ad fill preferential pathways;
- Horizontal migration; and
- Groundwater migration.

5.3 Potential Sensitive Receptors

Key receptors and associated pathway mechanisms identified are presented below:

Onsite:

- Maintenance workers conducting earthworks. Exposure pathways associated with these receptors include dermal contact, ingestion of soil and inhalation of dust and vapours associated with potential contamination;
- Future site works, students, staff and personnel utilising the site for educational purposes. Exposure pathways associated with these receptors include dermal contact, ingestion of soil and inhalation of dust or vapours associated with potential contamination;
- Ecological receptors (fauna). Direct and indirect exposure pathways include dermal contact, inhalation, ingestion (e.g., contaminated food items, ingestion of contaminated dust through preening);
- Ecological receptors (flora). Uptake of contaminated soil or groundwater contamination into the root system, foliage, or fruit;
- Surface body water and groundwater ecosystems onsite.

Offsite:

- Residential properties;
- Commercial properties;
- Avondale Golf Course;
- Troon Creek, Blackbutt Creek and Lane Cove River.

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5.4 Exposure Assessment

An exposure assessment was conducted as per NEPM Schedule B4 guidelines for the SIP and Campus Commons development site within Pymble Ladies College, 20 Avon Road, Pymble NSW. The 4,000 sqm project site is planned for development, including the anticipated excavation of soils. The assessment identified three (3) Potential Areas of Environmental Concern (PAECs):

- **PAEC1:** consists of potential uncontrolled fill for farming agricultural land use, to raise site levels, and for construction building pads, containing potential contaminants such as Heavy Metals, BTEXN, PAH, OCP/OPP, PCB and Asbestos;
- **PAEC2:** stems from the potential spraying of pesticides within historical farming agricultural parcels of lands within the northwest corner 200m from the SIP development site, the central eastern boundary 140m from the SIP development site, and the southern portion of the site 260m from the SIP development site between 1943-1982. Historical spraying of potential pesticides around and beneath building structures onsite, containing potential contaminants such as Heavy Metals and OCP/OPP;
- **PAEC3:** may relate to the aged and minorly damaged site buildings containing Asbestos and Lead Paint.

Please note: historical service stations and/or dry cleaners, <300m surrounding the subject site were detected, however, these historical business activities were >500m from the proposed SIP development site. Therefore, these potential areas of environmental concern were not, in the opinion of ECON Environmental a potential impact on the proposed SIP development area, due to their distance from the SIP development site.

Complete exposure pathways have been identified as direct contact (soil ingestion, dermal contact, dust inhalation), vapour intrusion from the proposed basement construction, and groundwater migration both vertically though fill materials and laterally towards Troon Creek, Blackbutt Creek and Lane Cove River.

Current receptor populations may include, students, staff, residents, workers and ecological receptors.

Identified concerns are related to potential direct soil contact due to degraded surface conditions from basement construction during excavation works. Uncertainties exist regarding potential fill composition and potential contaminant distribution. The assessment indicated a potential LOW risk, however it did warrant a detailed site investigation into potential material disturbed during basement excavation and demolition of the current site structures. While these environmental risks are significantly low, they can be effectively managed though appropriate investigation, remediation and control measures.

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6. DATA QUALITY OBJECTIVES

Data quality objectives were established for the site characterisation works, following the decision-making procedures outlined in NEPC (2013):

- Step 1 - Define the problem,
- Step 2 - Identify the decision,
- Step 3 - Identify inputs to the decision,
- Step 4 - Define the study boundaries,
- Step 5 - Develop a decision rule,
- Step 6 - Specify limits on decision errors, and
- Step 7 - Optimise the design for obtaining data.

6.1 STEP 1 - Define the Problem

To determine the potential risks to human health and the environment from the potential contamination of soils within the subject site.

6.2 STEP 2 - Identify the Decision

Based on the decision-making process for assessing urban redevelopment sites, the following decisions must be made:

1. Are there any unacceptable health risks to future onsite receptors?
2. Are there any unacceptable ecological risks posed by the site?
3. Are there any aesthetic issues at the site?
4. Is there any evidence of, or potential for, migration of contaminants from the site?
5. Is a site management strategy required?

6.3 STEP 3 - Identify Inputs to the Decision

The following inputs were used to allow the assessment of the decisions:

1. Historical information,
2. Observations made during site investigations,
3. Soil analytical data from samples collected on site,
4. Adopted site assessment criteria, and
5. Data quality indicators.

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6.4 STEP 4 - Define the Study Boundaries

The study site is located within the entire boundaries of the Secondary Innovation Precinct (SIP) and Campus Commons development area located Pymble Ladies' College, 20 Avon Road, Pymble NSW (part Lot 8 in DP7131), which covers an area of approx. 4,000m^2, with a GFA of 10,300m^2, as shown in Figure 2, Appendix A. The vertical extent of the investigation includes the fill material beneath the existing onsite hardstands down to natural soil material, ranging from approx. 0.2m BGL at BH1 to 1.5m BGL at BH6 & BH20.

6.5 STEP 5 - Develop a Decision Rule

Soil analytical data were assessed against National Environmental Protection Measure (NEPM) criteria as referenced in Section 8. Statistical analysis of the data will be undertaken if necessary. The following statistical criteria shall be adopted:

1. The upper 95% confidence limit on the average concentration for each analyte (calculated for samples collected from consistent soil horizons, stratigraphy or material types) must be below the adopted criterion,
2. No single analyte shall exceed 250% of the adopted criterion, and
3. The standard deviation of the results must be below 50 % of the criterion.

The acceptable limits for laboratory QA/QC parameters are shown in the table below and are based upon the laboratory reported acceptable limits and those stated within the NEPM 2013 Schedule B3 Guideline & AS 4482.1-2005.

Table 4: Soil QA/QC Parameters

Type of QC Sample	Control Limit
FIELD	
Rinsate Blanks	Analytes <LOR
Intra-Laboratory Duplicates	RPD's < 30 - 50%
Inter-Laboratory Duplicates	RPD's < 30 - 50%
Trip Blanks	Volatiles <LOR
Trip Spike Recovery	>70%
LABORATORY	
Method Blanks	< Laboratory LOR
Matrix Spike	Recovery targets: • Metals: 70% to 130% • Organics: 60% to 140%
Laboratory Duplicate	RPD's <30%
Laboratory Control Samples	Recovery targets: 70% to 130%

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Table 4: Soil QA/QC Parameters	
Type of QC Sample	Control Limit
Surrogate Spike	Recovery targets: 60% to 140%

The following conditions should be adopted:

- If the control limits are exceeded, then an assessment of the significance of the results should be carried out,
- If major non-conformances from the laboratory or field data are identified, then further sampling and laboratory analysis may be required to provide an adequate sample set for data reliance,
- If the results of the DQI assessment indicate that the data set is reliable, then the data set will be deemed to be acceptable for the purposes of the validation works, and
- If the measured concentrations of soil samples analysed meet their respective validation criteria, then no additional remediation is required.

6.6 STEP 6 - Specify Limits of Decision Errors

The usual null hypothesis for remediation of contamination is that the land has unacceptable risk from residual contamination, and this hypothesis is able to be accepted at a 95% confidence level, giving a 5% risk of a Type I error (site is deemed suitable when it is not).

An assessment of the likelihood of a decision error will be made based on:

- The acceptable limits for inter/intra laboratory duplicate sample comparisons as specified in Step 5 of the DQOs, and
- The acceptable limits for laboratory QA/QC parameters are based upon the laboratory reported acceptable limits and those stated within the NEPM 2013 Schedule B3 Guideline & AS 4482.1-2005.

If the concentration of a particular contaminant of concern exceeds its remediation/validation criteria, then a further assessment is required to address the significance of the result. Statistical analysis (arithmetic mean) based on 95% UCL may be used to assess the significance of the data provided **all** the following conditions are met:

- the 95%ucl of the arithmetic mean must be less than the criterion,
- the standard deviation of the data set is less than 50% of the relevant threshold level, and
- no individual sample result should be greater than 250% of the relevant threshold level.

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6.7 STEP 7 - Optimize Design for Obtaining Data

The optimum design for obtaining data in order to achieve the Data Quality Objectives is as follows:

- Review of previous environmental site investigation results,
- Only NATA-accredited environmental testing laboratories will be commissioned to analyse soil and groundwater samples and will implement a quality control plan conforming to the NEPM (Assessment of Site Contamination) Measure Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils and Groundwater.
- Assessment of the Data Quality Indicators to determine if the field procedures and laboratory analytical results are reliable,
- Collection of QA/QC samples at frequencies prescribed in the NEPM Guidelines,
- Field sampling works will be carried out by an experienced and qualified Environmental Scientist in accordance with ECON Environmental protocols, based on National Environmental Protection (Assessment of Site Contamination) Amendment Measure 2013 Schedules B1, B2, B4, B6 & B9 and other NSW EPA endorsed guidelines.

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7. DATA QUALITY INDICATORS

7.1 General

The five Data Quality Indicators (DQIs) comprising completeness; comparability; representativeness; precision and accuracy provide an assessment of the reliability of field procedures and laboratory analytical results in accordance with the Contaminated Land Management - Guidelines for the NSW Site Auditor Scheme (3rd Edition, 2017).

These are addressed in the following sub-sections.

7.2 Completeness

Data Completeness is a measure of the amount of useable data (expressed as %) from a data collection activity. The completeness is equal to the percentage of valid quality assurance and quality control results.

The assessment should address the following:

Table 5: Data Completeness

Field	Laboratory
• All critical locations are sampled • All samples collected from critical grids and depths • Consistency in the use of standard operating procedures, equipment, sampler • Completion and correctness of field documentation.	• All critical samples and analytes are analysed in accordance with the SAQP, *if prepared* • Appropriateness of laboratory methods and PQLs.

The minimum target frequency for each type of QA/QC sample should be carried out in accordance with the following tables:

Table 6: QA/QC Requirements

Field QA/QC Sample	Frequency (Soil)	Frequency (Groundwater)
Intra-Laboratory Duplicate	1 in 20 samples	1 in 20 samples
Inter-Laboratory Duplicate	1 in 20 samples	1 in 20 samples
Field Blanks	1 per day (Rinsate)	1 per day (Rinsate)
Trip Blank	1 per sample batch	1 per sample batch
Trip Spike	1 per sample batch	1 per sample batch

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Where any of the above objectives are not achieved for particular samples, steps will be taken to rectify the non-conformance, if possible. Alternatively, data qualifiers detailing the nature of the quality problem will be documented in the report and attached to relevant data in the result summary tables.

The target for overall completeness for each data set is a minimum of 95%. A data completeness of less than 95% may be accepted where it can be justified that the non-conformance does not have a significant effect on the outcome of the results.

7.3 Comparability

Data Comparability is the confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event.

The qualitative assessment should address the following:

Table 7: Data Comparability

Field	Laboratory
• Consistency in the use of standard operating procedures, equipment, sampler • Consistency in the method of sample collection for each media • Quantification of influence by climatic conditions	• Consistency of analytical methods and limits of reporting (LOR) for each analyte • Whether laboratory limits of reporting are set at < 20% of the adopted site criteria value for each analyte • Consistent use of one primary and one secondary laboratory

7.4 Representativeness

Data Representativeness is the confidence (expressed qualitatively) that data are representative of each media present on the site.

The qualitative assessment should address the following:

Table 8: Data Representativeness

Field	Laboratory
• Samples are collected in accordance with the SAQP, *if provided* • Receipt of samples within holding times • Receipt of intact samples • Receipt of adequately preserved samples	• All samples are extracted and analysed within their respective holding times

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7.5 Precision

Data Precision is a quantitative measure of the variability (or reproducibility) of data.

Intra-laboratory or Inter-laboratory Duplicate Samples (B) results are compared with Primary Sample (A) results using Relative Percentage Differences (RPDs) according to the following formula:

$$\%RPD = \left|\frac{A - B}{A + B}\right| \times 200$$

Duplicate sampling rates for this assessment (**for each separate sample batch**) are to be tested for all the same analytes as the primary sample:

Table 9: Data Precision	
Type of QC Sample	Control Limit
Field Intra-Laboratory Duplicate (Blind)	RPD < +/- 50%
Field Inter-Laboratory Duplicate (Split)	RPD < +/- 50%

Where the laboratory has reported results for a particular analyte below the limit of reporting for either the primary sample or a duplicate sample, the RPD is reported as 'Not Calculable' or NC. A discussion should be made as to which sample should be adopted and compared against the relevant assessment criteria. However, no discussion is required where both the primary sample and the duplicate sample for a particular analyte are below the limit of reporting.

7.6 Accuracy

Data Accuracy is a quantitative measure of the closeness of reported data to the true value. Laboratory measured recovery of analytes in lab control samples with known concentrations. Laboratory QA/QC testing is to include:

Table 10: Data Accuracy	
Laboratory QA/QC Sample	Frequency
Method Blank	1 per 20 samples
Matrix Spike	1 per 20 samples
Laboratory Duplicate	Laboratory defined
Laboratory Control	Laboratory defined
Surrogate Spike	All organic samples

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8. SITE ASSESSMENT CRITERIA

8.1 General

Concentrations of contaminants in soil samples were compared against the National Environmental Protection Council (2013) site assessment criteria presented below and summarised in Appendix G.

- Health Investigation Levels (HIL) for Soil Contaminants
- Soil Health Screening Levels (HSL) for Vapour Intrusion
- NEPM 2013 Management Limits for TRH Fractions F1-F4 in Soil – Residential (Coarse Grained Soils)
- NEPM 2013 ESLs for TRH fractions F1 – F4, BTEX and benzo(a)pyrene in soil
- Health Screening Levels for Asbestos Contamination in Soil.

8.2 Soils Investigation and Screening Levels

8.2.1 Health Investigation Levels (HILs)

The NEPM presents Tier 1 Health Investigation Levels (HILs) for a broad range of chemicals such as metals, inorganics, PAHs, phenols, pesticides and other organics. The HILs are applicable to generic land uses such as residential, commercial/industrial or public open space and all soil types, generally within the first 3 metres of soil below ground level. The HILs have been applied to assess human health risks via all relevant pathways of exposure.

Based on the proposed Secondary Innovation Precinct (SIP) and Campus Commons Development which includes soil investigation results within the proposed development area, the site will be assessed against the following criteria:

- ***HIL 'A'*** *- Residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake (no poultry), also includes childcare centres, preschools and primary schools.*

Please note: Pymble Ladies College consists of Boarding, Junior and Secondary Schools, Sports and Outdoor Playing Fields (e.g., Ovals) and gardens with accessible soils, therefore, the minimum Site Assessment Health Investigation Levels of HIL 'A' has been adopted for this project.

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8.2.2 Health Screening Levels (HSLs)

The NEPM presents Tier 1 Health Screening Levels (HSLs) for the following petroleum compounds and fractions:

- Benzene, Toluene, Ethylbenzene and Xylenes (BTEX);
- Naphthalene, and
- TPH C6-C10 and TPH >C10-C16 fractions.

The HSLs are applicable to generic land uses such as residential, commercial/industrial or recreational/public open space and different soil types between the ground surface and soils >4 metres below ground level. The HSLs have been applied to assess human health risks via the inhalation and direct contact pathways of exposure.

Point 1 of Table 1A (4), which indicates that HSL D can be used in lieu of HSL A for buildings that comprise car parks or commercial properties on the ground floor.

8.2.3 Interim Soil Vapour Health Investigation Levels (Interim HILs)

The NEPM presents Interim Soil Vapour Health Investigation Levels (Interim HILs) for selected Volatile Organic Chlorinated Compounds (VOCCs).

The Interim Soil Vapour HILs are applicable to generic land uses such as residential, commercial/industrial or recreational/public open space and all soil types within the first metre depth from the ground surface or the first metre depth beneath a sub-slab. The Interim Soil Vapour HILs have been applied to assess human health risks via the inhalation pathways of exposure.

8.2.4 Ecological Investigation Levels (EILs)

The NEPM presents Ecological Investigation Levels (Interim EILs) for As, Cu, CrIII, Ni, Pb, Zn, DDT and naphthalene.

The EILs are applicable to generic land uses such as areas of ecological significance, urban residential areas and public open space, and commercial/industrial land uses. The EILs have been applied to assess risks to terrestrial ecosystems, generally, within the top 2 metres of soil at the final surface/ground level.

Site specific EILs for Copper, Zinc, Nickel and Chromium III can be derived by adding the Ambient Background Concentration (ABC) to the Added Contaminant Limits (ACL), as per the following formula:

$$EIL = ABC + ACL$$

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The ABC of a contaminant is the soil concentration in a specified locality that is the sum of the naturally occurring background level and the contaminant levels that have been introduced from diffuse or non-point sources by generating anthropogenic activity not attributed to industrial, commercial, or agricultural activities.

The ACL is the added concentration (above the ABC) of a contaminant above which further appropriate investigation and evaluation of the impact on ecological values is required. ACLs are based on the soil characteristics of pH, CEC and clay content. Different soils types / profiles will have different contaminant EILs rather than a single generic EIL for each contaminant. ACLs apply chromium III (CrIII), copper (Cu), nickel (Ni) and zinc (Zn) for site-specific EIL determination. The soil properties to be measured for site-specific derivation of ACLs for CrIII, Cu, Ni and Zn are summarised below:

- pH - Cu
- CEC - Cu, Ni, Zn
- % clay - CrIII

Note – the lowest concentration of copper that is derived from the pH or the CEC calculation is to be used for the ACL.

Insufficient data was available to derive ACLs for As, Pb, DDT and naphthalene. As a result, the derived EILs are generic to all soils and are presented as total soil contaminant concentrations in Tables 1(B)4 and 1(B)5.

8.2.5 Ecological Screening Levels (ESLs)

Table 1B (6) of the NEPM presents Ecological Screening Levels (ESLs) for TPH C6-C40 fractions, BTEX and benzo(a)pyrene.

The ESLs are applicable to generic land uses such as areas of ecological significance, urban residential areas and public open space, and commercial/industrial land uses. The ESLs have been applied to assess risks to terrestrial ecosystems, generally, within the top 2 metres of coarse or fine soil at the final surface/ground level.

8.2.6 Petroleum Hydrocarbon Management Limits

Table 1B (7) of the NEPM presents petroleum hydrocarbon management limits for application to TPH fractions C_6-C_{10}, >C_{10}-C_{16}, >C_{16}-C_{34} and >C_{34}-C_{40}. The management limits are applicable for coarse or fine soils in residential, parkland, public open space or commercial/industrial land uses following consideration of relevant ESLs and HSLs.

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8.2.7 Asbestos in Soils

Health screening for asbestos in soil, which are based on scenario-specific likely exposure levels, are adopted and are referred in Table 8 in NEPM Schedule B1.

8.3 Export of Waste

Any soil to be removed from the site shall be classified in accordance with the NSW EPA (2014) "*Waste Classification Guidelines, Part 1: Classifying Waste"* before it can be disposed of off-site.

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9. SOIL SAMPLING AND ANALYSIS PLAN

9.1 General Methodology

In order to meet the Data Quality Objectives, the investigation will comprise fieldwork and sample collection carried out in general accordance with the procedures outlined in the ECON Environmental fieldwork protocols which are based on industry accepted standard practice.

The sampling strategy is based on our current level of understanding of the site conditions and to address Council queries. However, the fieldwork and the soil sampling and analysis program may be subject to change based on the observations made during field work, such as depth of fill material, actual geology beneath the site and visual extent of contamination.

The drilling method adopted should ensure that no pathways of contamination are created between various soil strata encountered.

Each borehole was initially concrete cored through the existing hardstands, where located, then drilled into the underlying soils using a battery powered mechanical drill auger with an 100mm diameter auger bit.

The boreholes were backfilled with clean spoil or clean sand/gravel. Where a semi-confined or confined layer was encountered, a bentonite seal was used to prevent potential cross-contamination between the overlying and underlying strata.

A description of sub-surface conditions observed during drilling are presented in the field notes included in Appendix D.

The soil samples were collected on Saturday 05 April 2025 within the subject site.

9.2 Soil Sampling Density and Sampling Location Rationale

Based on the available information, a targeted soil sampling plan was considered most appropriate to provide sufficient characterisation data of the insitu fill material within the investigative area, which posed a potential risk for containing hazardous substances, hence a targeting sampling plan was undertaken.

For the soil sampling conducted within the subject site on Saturday 05 April 2025, and in accordance with the NSW EPA “Sampling Design Guidelines” (2022) for this sized investigative area (approx. 10,300m^2), a total of twenty-three (23) soil samples plus three (3) QA/QC samples are required to be collected to provide general site coverage. Therefore, a total of twenty-six (26) samples were collected plus QA/QC. Additional sampling points may be incorporated to target specific areas of potential environmental concern identified above.

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9.3 Soil Sampling Depth

The majority of the investigative site was covered by a 0.2-0.5m concrete, bitumen/asphalt or tiled hardstand. Each proposed borehole sampling location was scanned initially with a service locator to ensure no underground services were located within the vicinity. Once cleared, a mechanical 200mm concrete corer was used to core through the hardstand, where located, until underlying fill material was intercepted. Sampling boreholes were then advanced through the underlying surfaces, using a battery powered mechanical auger drill at various depths within each borehole location to allow for the collection of at least one soil sample from the insitu underlying soil material, or until natural soil material was intercepted, approx. 0.2m BGL (BH10) to 1.5m BGL, (BH6 & BH20). No groundwater was intercepted during this investigation.

9.4 Soil Sampling Methodology

During the collection of soil samples, any features such as seepage, discoloration, staining, odours, or other physical indicators of groundwater contamination was noted.

Soil sampling was carried out in general accordance with ECON Environmental Fieldwork Protocols. In summary:

- Soil samples were collected using a hand-held auger using a 100mm diameter auger bit from each soil type or change in lithology. However, additional samples were collected where there was visual evidence of contamination,
- Samples were transferred into clean laboratory supplied containers, and
- In general, each soil sample was divided into two sub-samples. One of the sub-samples was placed into a laboratory-supplied container and a second sub-sample was placed in a separate zip-lock bag for field headspace screening using a PID.

Sampling of asbestos was undertaken as follows:

- A minimum 10L sample from each sample location was recovered,
- Each sample (minimum of 10 L) was screened through a 7mm sieve and the material retained on the sieve examined for any bonded ACM and / or suspect material and forwarded to the laboratory for analysis if any suspected ACM is encountered,
- If visible FA material is present or suspected, the soil was wetted to minimise the release of fibres,
- Identified bonded ACM and FA was weighed for each sample, and
- One wetted 500ml sample from each sampling location was submitted to a NATA accredited laboratory for analysis for AF. Soil asbestos analysis should comply with Australian Standard Method for the Qualitative Identification of asbestos in bulk samples (AS4964–2004).

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9.5 Soil Laboratory Analysis

The laboratory used for the analysis of all samples was ALS Environmental located at 277-289 Woodpark Road, Smithfield NSW Australia. The laboratory is NATA accredited for the selected analyses. The completed analysis schedule is summarised in Table 10 below providing a diverse range of analytes with the full laboratory certificates in Appendix G:

Table 11: Analytical Schedule.

Sample ID	Location	Analytes
Soil Samples BH1 to BH123 (05.05.2025)	Fill material within the entire subject site.	• Heavy Metals • TRH, BTEX, PAH, PCBs • OC/OP Pesticides, Phenols • Asbestos

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10. QUALITY ASSURANCE / QUALITY CONTROL

10.1 Site Procedures

The following field quality assurance and quality control measures were implemented:

1. All sample jars and sample bags were clearly labelled prior to site visit,
2. All soil samples were collected by hand (after using a hand-held auger with a 100mm drill),
3. Disposable gloves were worn throughout the process and changed between the collection of each soil sample,
4. All sampled jars and bags were immediately placed in an ice-block chilled esky,
5. All samples were clearly labelled and sealed for couriering,
6. The ALS Environmental chain-of-custody form was completed and emailed to the lab as well as a hard copy placed with the samples,
7. All samples were kept in the office of ECON Environmental Pty Ltd until collected by courier,
8. Ice-bricks were interchanged prior to couriering.

10.2 Field QA/QC

10.2.1 General

The frequency required for each field quality assurance / quality control (QA/QC) sample is presented in the table below.

Table 12: QA/QC Sampling Frequency

	Intra-Lab Duplicates	Inter-Lab Duplicates	Rinsates	Trip Blanks	Trip Spikes
Sampling Frequency	1 in 20 primary samples	1 in 20 primary samples	1 / Day	1 / Day	1 / Day

10.2.2 Field Duplicates

Duplicates of primary samples were collected to enable the assessment of variability in analyte concentrations between samples collected from the same sampling point. The tables below list the duplicate soil and groundwater samples collected with their corresponding primary samples.

Table 13: Soil Field Duplicate Samples

Primary Sample ID	Sample Depth (m BGL)	Blind Duplicate ID	Split Duplicate ID	Date Sampled
BH3	0.8-0.9m	D1	-	05.04.2025
BH18	0.3-0.4m	D2	-	05.04.2025

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10.2.3 Sample Handling, Storage and Transport

The following sampling handling, storage and transport procedures were adopted to ensure sample integrity:

- Samples were collected in laboratory supplied containers. A list of sample preservation methods and the types of sample containers used are attached in Appendix I,
- Soil and groundwater sample containers were placed immediately into a chilled cooler box and dispatched to their respective analytical laboratories on the same day. If this was not possible, samples were temporarily held overnight in the ECON Environmental office refrigerator at a temperature of no greater than 4 ºC and dispatched the following day,
- A Chain of Custody form (COC) was completed for all samples collected and included with the samples for transport to their respective laboratories for chemical analysis. Copies of COCs are included in Appendix F.
- All glass bottles were individually bubble wrapped for protection and insulated containers/coolers were used for sample shipment.
- Disposable nitrile gloves were used for OH&S purposes and were changed between every sample location.

10.2.4 Decontamination Procedures

The decontamination of non-dedicated sampling equipment was achieved by washing with phosphate-free detergent and tap water, followed by a final rinse with distilled water. Decontamination was conducted after the collection of soil samples at each sample location. A clean pair of disposable gloves was used when handling each soil sample.

The drilling augers were decontaminated between sampling locations by physically removing soil material between boreholes, washing the augers with Decon 90 and rinsing them with water.

10.3 Laboratory QA/QC

10.3.1 Laboratories Used

The following NATA-accredited laboratories were commissioned to carry out laboratory analysis of soil, groundwater and soil vapour samples collected:

- Primary Laboratory – ALS Laboratories (Sydney)
- Secondary Laboratory – ALS Laboratories (Newcastle) to conduct asbestos analysis on selected soil samples.

These laboratories also operate Quality Systems that are designed to comply with ISO/IEC 17025.

All primary samples, blind duplicates, Rinsate samples, trip blank/spikes were dispatched to the primary laboratory.

Laboratory Certificates of Analysis are included in Appendix G.

10.3.2 Holding Times

The holding times for chemicals analysed are presented in Appendix G and were based on USEPA methods, Standard Methods for the Examination of Water and Wastewater (APHA).

10.3.3 Test Methods and Practical Quantitation Limits

The test methods adopted by ALS Laboratories – Sydney & Newcastle are listed in Appendix F and Practical Quantitation Limits (PQLs) adopted are specified within the Laboratory Certificates of Analysis included in Appendix F.

The methods used by the laboratories generally comply with those listed in the NEPM and the ANZG, "Australian and New Zealand Guidelines for Fresh and Marine Water Quality" (2018). Alternate methods used by the laboratories (i.e. not identified in the NEPM and ANZECC guidelines) have been validated by the laboratories, as recommended in the NEPM and ANZECC guidelines, and endorsed by NATA.

10.4 QA/QC Data Evaluation

A full evaluation of the Data Quality Indicators (DQIs) for both fieldwork and laboratory procedures are presented in Appendix G. These were assessed with reference to Appendix V of the NEPM and Contaminated Land Management - Guidelines for the NSW Site Auditor Scheme (3rd Edition, 2017). In summary, the findings of the QA/QC evaluation indicated the following:

- Data Completeness – The data set is considered to be adequately complete. However, the following minor non-conformances were identified:
    - Trip blanks and trip spikes were not collected during the soil investigation. However, given that TPH C6-C10 fraction and BTEX concentrations were not detected in any of the samples during the detailed site investigation, this was not considered to affect the outcome of the results.
- Data Comparability – The data set is considered to be adequately comparable.
- Data Representativeness – The data set is considered to be adequately representative.
- Data Precision – The data set is considered to be adequately precise.
- Data Accuracy – The data set is considered to be adequately accurate.

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As shown in Appendix H – Summary of Results, the RPDs for the majority of analytes were within their respective control limits, with the exception of Nickel (95%) between primary sample BH18 (0.3-0.4m) and duplicate sample D2. The high RPDs were considered to be due to sample's heterogeneity, given that all of the Nickel results were within the same order of magnitude. However, none of the primary or duplicate sample results exceeded their respective investigation or screening levels. Therefore, the data set is considered to be adequately precise.

The sampling methods (including sample preservation, transport and decontamination procedures) and laboratory methods followed during this investigation works were consistent with ECON Environmental protocols and were found to meet the DQOs for this project.

It is therefore considered that the data is sufficiently reliable and that the results can be used for the purpose of this project.

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11. FIELD OBSERVATIONS

11.1 Site Inspection

A site inspection was carried out on Saturday 05 2025 by ECON Environmental's representative Con Kariotoglou, which involved a visual assessment of the proposed new SIP and Campus Commons development areas only within the subject site, to identify any potential areas of environmental concern within the proposed development area. At the time of the inspection, the following observations were noted:

- Each proposed borehole sampling location was initially scanned with a service locator to ensure no underground services were located within the vicinity.
- The majority of the investigative area was covered by a 0.2-0.5m concrete, bitumen/asphalt or tiled hardstand, while the remaining areas were landscaping areas.
- Once cleared, a mechanical 200mm concrete corer was used to core through the hardstand, where located, until underlying fill material was intercepted.
- Sampling boreholes were then advanced through the underlying surfaces, using a battery powered mechanical auger drill at various depths within each borehole location to allow for the collection of at least one soil sample from the insitu underlying soil material, or until natural soil material was intercepted, approx. 0.2m BGL (BH10) to 1.5m BGL, (BH6 & BH20).
- No groundwater was intercepted during this investigation.
- Majority of fill material observed within the investigative area consisted of silty clay loam with inclusions of rocks and gravel within landscaping areas or sandy gravelly soil material beneath hardstands.
- Several buildings within the SIP and Campus Commons areas, nominated to be demolished, including the existing Isabel Harrison, Dorothy Knox, John Vicars and Robert Vicars Buildings, appeared to be constructed prior to circa 2000, and may potentially contain hazardous building materials.
- All surrounding trees and landscaping vegetation appeared healthy with no signs of distress or decolourisation within the SIP and Campus Commons areas during the inspection.
- No obvious visible potential areas of environmental concern were noticed within the SIP and Campus Commons areas during the investigation.
- No hydrocarbon odours or staining were detected on surface hardstands or topsoils or within borehole sampling locations within the SIP and Campus Commons areas during the investigation.
- No visible fragments of ACM were detected on surface hardstands or topsoils or within borehole sampling locations within the SIP and Campus Commons areas during the investigation.

11.2 Surface and Subsurface Conditions

Based on surface and sub-surface conditions observed during the intrusive investigation, the surface and sub-surface profile across the site is summarised in the table below.

Table 14: Summary of Geological Observations

Sample Nos.	Location	Geological Unit	Lithological Description	Depth (m BGL)
BH1	Eastern Landscaping Steep embankment	Fill	0.1m topsoils, with inclusions or organic matter, followed by Silty Clay material, coarse brown, dry, with inclusions of rocks	0.1-0.2 into the underlying soils. Natural Silty Clay, brown at 0.2m BGL.
BH2	Landscaping area east of Isabel McKinney Harrison Centre	Fill	0.1m pebbles, followed by Silty Clay loam material, coarse brown, moist, with inclusions of pebbles	0.2-0.3m into the underlying soils Natural Silty Clay, brown at 0.3m BGL.
BH3	Landscaping area South of Eastern Staff Carpark	Fill	0.9m Silty Clay loam material, coarse brown, dry, with inclusions of rocks	0.8-0.9m into the underlying soils Natural Silty Clay, brown at 0.9m BGL.
BH4	Landscaping area North East of Isabel McKinney Harrison Centre	Fill	0.1m pebbles, followed by Silty Clay loam material, coarse brown, moist, with inclusions of pebbles	0.4-0.5m into the underlying soils Natural Silty Clay, brown at 0.5m BGL.
BH5	Landscaping area north of main school access road	Fill	0.3m Silty Clay loam material, coarse brown, dry, with inclusions of rocks	0.3-0.4m into the underlying soils Natural Silty Clay, brown at 0.4m BGL.
BH6	Landscaping area South of Isabel McKinney Harrison Centre	Fill	1.4m Silty Clay loam material, coarse brown, dry, with inclusions of rocks	1.4-1.5m into the underlying soils Natural Silty Clay, brown at 1.5m BGL.
BH7	Grass area south west of Isabel McKinney Harrison Centre	Fill	0.3m Silty Clay loam material, coarse brown, dry, with inclusions of rocks	0.3-0.4m into the underlying soils Natural Silty Clay, brown at 0.4m BGL.
BH8	Landscaping area between Dorothy Knox Building &	Fill	0.8m Silty Sandy loam material, coarse brown, dry, with inclusions of rocks	0.8-0.9m into the underlying soils Natural Silty Clay, brown at 0.9m BGL.

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	Isabel McKinney Harrison Centre			
BH9	Landscaping Area North West of Dorothy Knox Building	Fill	1.2m Silty Sandy loam material, coarse brown, dry, with inclusions of rocks	1.2-1.3m into the underlying soils Natural Silty Clay, brown at 1.3m BGL.
BH10	Landscaping Area South of Science Building	Fill	0.6m Silty Sandy loam material, coarse brown, dry, with inclusions of rocks	0.6-0.7m into the underlying soils Natural Silty Clay, brown at 0.7m BGL.
BH11	Landscaping Area East of Science Building	Fill	0.2m Silty Sandy loam material, coarse brown, dry, with inclusions of rocks	0.2-0.3m into the underlying soils Natural Silty Clay, brown at 0.3m BGL.
BH12	Landscaping area South of Science Building	Fill	1.0m Sandy Clay material, coarse brown, dry, with inclusions of rocks and roots	1.0-1.1m into the underlying soils Natural Silty Clay, brown at 1.1m BGL.
BH13	Eastern footpath area of Amphitheatre	Fill	0.2m concrete hardstand, followed by Silty Clay material, coarse dark grey, dry, with inclusions of gravel	0.3-0.4m into the underlying soils Natural Silty Clay, brown at 0.4m BGL.
BH14	Southern access area of Amphitheatre	Fill	0.4m pebble concrete hardstand, followed by Sandy Gravel material, coarse brown, moist, with inclusions of gravel	0.4-0.5m into the underlying soils Natural Silty Clay, brown at 0.5m BGL.
BH15	Northern stage area of Amphitheatre	Fill	0.4m concrete hardstand, followed by Sandy Gravel material, coarse grey, dry, with inclusions of gravel	0.5-0.6m into the underlying soils Natural Silty Clay, brown at 0.6m BGL.
BH16	Landscaping area South West of Science Building	Fill	0.7m Silty Clay loam material, coarse brown, dry, with inclusions of rocks	0.7-0.8m into the underlying soils Natural Silty Clay, brown at 0.8m BGL.
BH17	Southern area between Ferguson House & Science Building	Fill	Silty Clay loam material, coarse brown, wet, with inclusions of rocks and roots.	0.9-1.0m into the underlying soils Natural Silty Clay, brown at 1.0m BGL.

BH18	Southern area between Ferguson House & Science Building	Fill	0.2m Silty Clay material, coarse brown, dry, with inclusions of rocks, followed by 0.1m gravel layer	0.3-0.4m into the underlying soils Natural Silty Clay, brown at 0.4m BGL.
BH19	South of Upper School Building	Fill	0.2m pebble concrete hardstand, followed by Silty Clay material, coarse brown, moist, with inclusions of gravel	0.3-0.4m into the underlying soils Natural Silty Clay, brown at 0.4m BGL.
BH20	South West of John Vicars Building	Fill	0.2m concrete hardstand, followed by Silty Sandy Clay material, coarse brown, dry, with inclusions of rocks	1.4-1.5m into the underlying soils Natural Silty Clay, brown at 1.5m BGL.
BH21	South of Technology & Applied Science Centre	Fill	0.2m concrete hardstand, followed by Sandy Clay Gravelly material, coarse grey, dry, with inclusions of gravel	0.3-0.4m into the underlying soils Natural Silty Clay, brown at 0.4m BGL.
BH22	Landscaping area north of Kitchen	Fill	40mm tiled paver hardstand, followed by Silty Clay material, coarse brown, dry, with inclusions of rocks	0.3-0.4m into the underlying soils Natural Silty Clay, brown at 0.4m BGL.
BH23	South of Technology & Applied Studies Centre Building	Fill	Sand and Silty Clay loam material, coarse brown, dry, with inclusions of rocks and roots.	0.5-0.6m into the underlying soils Natural Silty Clay, brown at 0.6m BGL.

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12. LABORATORY RESULTS

12.1 General

Sampling locations of boreholes are shown in Figure 5, Appendix A. A comparison of soil laboratory results against their respective assessment criteria (as specified in Section 6) are presented in the summary tables in Appendix F. Certificates of laboratory analysis are attached in Appendix G. A discussion of the results is presented in the following sub-sections.

12.2 Soil Results

12.2.1 Heavy Metals

12.2.1.1 Health Investigation Levels (HILs)

As indicated in Table B, the concentrations of the discrete heavy metals were **BELOW** the Health Investigation Level (HIL) for a residential development, that being the HIL 'A'.

12.2.1.2 Ecological Investigation Levels (EILs)

As indicated in Table B, the arsenic concentrations were **BELOW** the Ecological Investigation Level (EIL) for residential uses.

12.2.2 TRH, BTEX, Naphthalene &/or Benzo(a)pyrene

12.2.2.1 Health Screening Levels (HSLs)

As indicated in Table C, the F1 (C_6-C_{10}), F2 (>C_{10}-C_{16}), benzene, toluene, ethyl benzene, xylenes and naphthalene concentrations were **BELOW** the HSL 'A' for a clay soil profile with a source depth of "0m to <1m" and "1m-2m".

12.2.2.2 Ecological Screening Levels (ESLs)

As indicated in Table D, the F1 (C_6-C_{10}), F2 (>C_{10}-C_{16}), F3 (C_{16}-C_{34}), F4 (C_{34}-C_{40}), benzene, toluene, ethyl benzene, xylenes and benzo(a)pyrene concentrations were **BELOW** the ESL for a coarse-grained texture in an 'residential' environment.

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12.2.2.1 Management Limits

As indicated in Table E, the F1 (C_6-C_{10}), F2 (>C_{10}-C_{16}), F3 (C_{16}-C_{34}), F4 (C_{34}-C_{40}), benzene, toluene, ethyl benzene, xylenes and benzo(a)pyrene concentrations were **BELOW** the Management Limits for a coarse-grained soil texture in an 'residential' environment.

12.2.3 PAH, OCP, PCB, Phenols

12.2.3.1 Health Investigation Levels (HILs)

As indicated in Table F, the concentrations of the benzo(a)pyrene (as TEQ), Total PAH, OCP, PCB, Phenols were **BELOW** the Health Investigation Level (HIL 'A') for a residential development.

12.2.3.2 Ecological Investigation Levels (EILs)

As indicated in Table F, the concentrations of naphthalene and DDT/DDE/DDD were **BELOW** the Ecological Investigation Level (EIL) for a residential development.

12.2.3.3 Ecological Screening Levels (ESLs)

As indicated in Table F, the concentrations of the benzo(a)pyrene were **BELOW** the Health Investigation Level (HIL 'A') for a residential development.

12.2.4 Asbestos

As indicated in Table G, the concentrations of Asbestos for all samples were **BELOW** the Health Investigation Level (HIL 'A') for a residential development.

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13. CONCLUSION AND RECOMMENDATIONS

Based on the data and evidence collected during this detailed site investigation, the findings of this investigation are as follows:

13.1 Field Observations

No visible areas of environmental concern were noted during the site inspection and fieldwork of this Detailed Site Investigation.

13.2 Soil Laboratory Results

All twenty-three (23) soil samples, plus three (3) QA/QC sample collected (BH1 to BH23) within the proposed SIP and Campus Commons development area on Saturday 05 April 2025, were reported by the laboratory to have concentrations **BELOW** the adopted site assessment criteria for HIL 'A', land use as per the NEPM, 2013.

13.3 Potential Risks to Onsite and Offsite Receptors

The current risk of exposure of contaminants to onsite/offsite human and environmental receptors is considered **LOW** as no contaminants of concern were identified within underlying soils within the existing proposed development area of the subject site.

13.4 Recommendations

Based on the findings of this Detailed Site Investigation, and with reference to the ECON Environmental's Preliminary Site Investigation's (March 2025) conclusions and recommendations, it is the opinion of ECON Environmental, in accordance with relevant Australian Standards and guidelines, and in accordance with the technical requirements of the Secretary's Environmental Assessment Requirements (SEARs) and in support of the preparation of an Environmental Impact Statement (EIS) and State Significant Development Application (SSD- 79146716) to the Department of Planning, Housing and Infrastructure (DPHI), that the proposed Secondary Innovation Precinct (SIP) and Campus Commons development area located within Pymble Ladies' College, 20 Avon Road, Pymble NSW, currently DOES NOT currently contain any chemical contaminants of concern, nor any areas of environmental concern.

Therefore, based on the findings of this Detailed Site Investigation, it is ECON Environmental's opinion the proposed Secondary Innovation Precinct (SIP) and Campus Commons area is currently SUITABLE for its proposed development and land use.

However, the following recommendations are warranted identifying contaminants of potential concern (CoPCs) within the nominated Isabel Harrison, Dorothy Knox, John Vicars and Robert Vicars Buildings structures, deemed to be demolished as part of the proposed development, and their related building footprint areas, within the proposed Secondary Innovation Precinct (SIP) and Campus Commons development area:

- An addendum sampling and analysis program, as part of **this Detailed Site Investigation (DSI)**, is to be implemented, after the controlled demolition of the nominated Isabel Harrison, Dorothy Knox, John Vicars and Robert Vicars Buildings structures and their related building footprint areas, focusing on the identified CoPCs outlined in section 8.1 of the ECON PSI (March 2025) report, within building footprint areas, using a residential HIL-A criteria.
- If potential contaminants of concern are identified within the nominated demolished building footprint areas, an appropriate remedial / management strategy is to be developed, culminating in preparation of a **Remedial Action Plan (RAP)** in accordance with EPA guidelines. The RAP must be prepared by a suitable qualified and experienced environmental consultant detailing the remediation and validation processes to be undertaken for any contaminants identified within the building footprint areas onsite, to ensure the site is made suitable for its current existing development and land use.
- Given the potential age of the site buildings, that are required to be demolished, including the existing Isabel Harrison, Dorothy Knox, John Vicars and Robert Vicars Buildings, within the proposed SIP and Campus Commons development area, a Hazardous Materials Report and Register was prepared by CETEC Pty Ltd for the nominated buildings, please refer to the CETEC HAZMAT report, Ref: P25010061, dated 13 February 2025;
- Any identified Hazardous/Asbestos Containing Materials need to be removed in accordance with guidelines and with the CETEC HAZMAT (2025) report, and a **Clearance Inspection** be issued by a qualified environmental consultant, or equivalent, prior to any demolition work being undertaken;
- If any proposed soil is to be excavated, as part of the proposed development, and requires offsite disposal as waste, it will require a waste classification in accordance with NSW EPA's Waste Classification Guidelines Part 1-4: Classifying Waste 2014, and
- In the event of unexpected finds being excavated or exposed onsite during site works, such as discovering buried asbestos-containing materials, underground storage tanks, or odorous and/or stained soil uncovered during works, all site works must cease, and ECON Environmental must be notified immediately for further investigation and appropriate action.

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14. LIMITATION STATEMENT

ECON Environmental Pty Ltd has undertaken the following report in accordance with the scope of works set out between ECON Environmental Pty Ltd and the client. ECON Environmental Pty Ltd derived the data in this report primarily from the site and soil assessment conducted on the date of site inspection. The impacts of future events may require future investigation of the site and subsequent data analysis, together with a re-evaluation of the conclusions and recommendations of this report.

In preparing this report, ECON Environmental Pty Ltd has relied upon, and assumed accurate, certain site information provided by the client and other persons. Except as otherwise stated in the report, we have not attempted to verify the accuracy or completeness of any such information. ECON Environmental Pty Ltd accepts no liability or responsibility whatsoever for or in respect to any use or reliance upon this report by any third party.

The information contained within this report have been prepared exclusively for the client. ECON Environmental Pty Ltd have prepared the report to address the risk associated with scale of the works. The report has been prepared with a degree of care and skill ordinarily exercised in similar investigations by reputable members of the environmental industry in Australia. No other warranty, expressed or implied, is made or intended. This report is to be read in its entirety including attachments and appendices and should not read in individual sections.

ECON Environmental Pty Ltd professional opinions are based upon its professional judgment, experience, training and results from analytical data. In some cases, further testing and analysis may be required, thus producing different results and/or opinions. ECON Environmental Pty Ltd has limited its investigation to the scope agreed upon with its client.

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APPENDIX A: SITE PLANS

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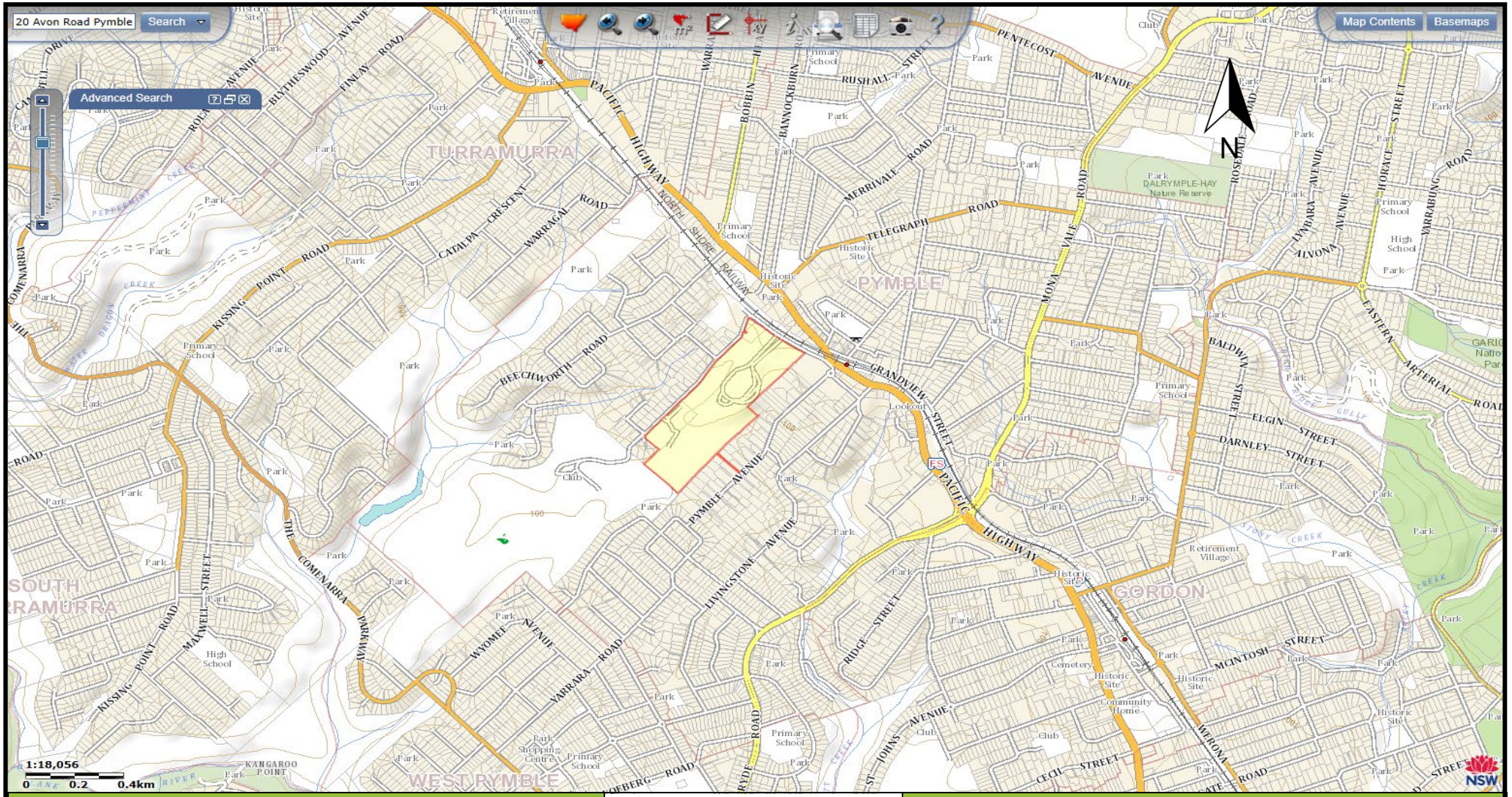
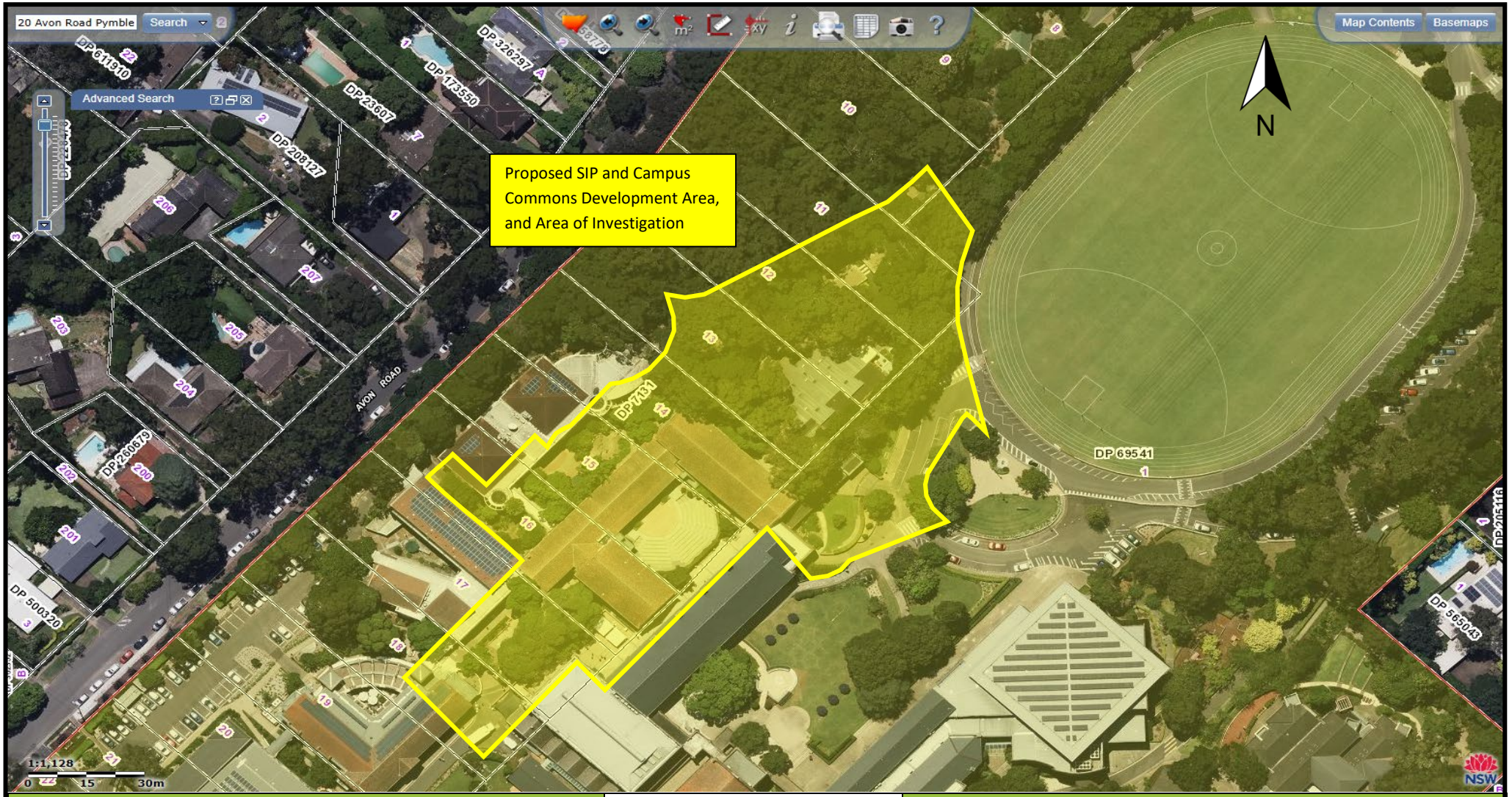
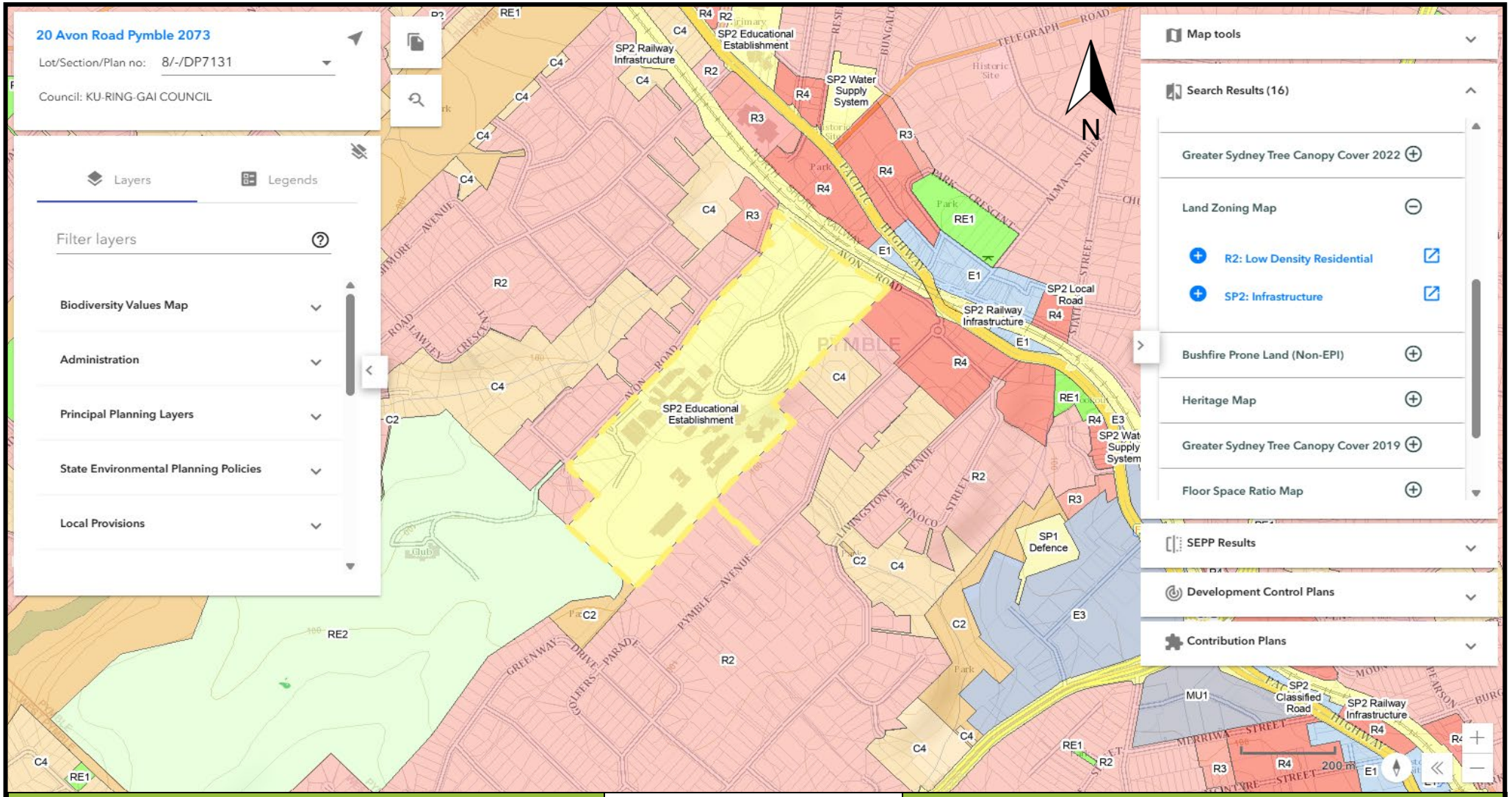


PROJECT DETAILS			DRAWING DETAILS: SITE LOCALITY			
Project Title	Detailed Site Investigation		Figure No.	1	Rev No.	0
Project No.	25-1971		Scale	As above	Size	A4
Client	Pymble Ladies' College		Drawn by	CK	Date	14.04.2025
Site Address	20 Avon Road, Pymble NSW 2073		Approved by	CK	Date	14.04.2025

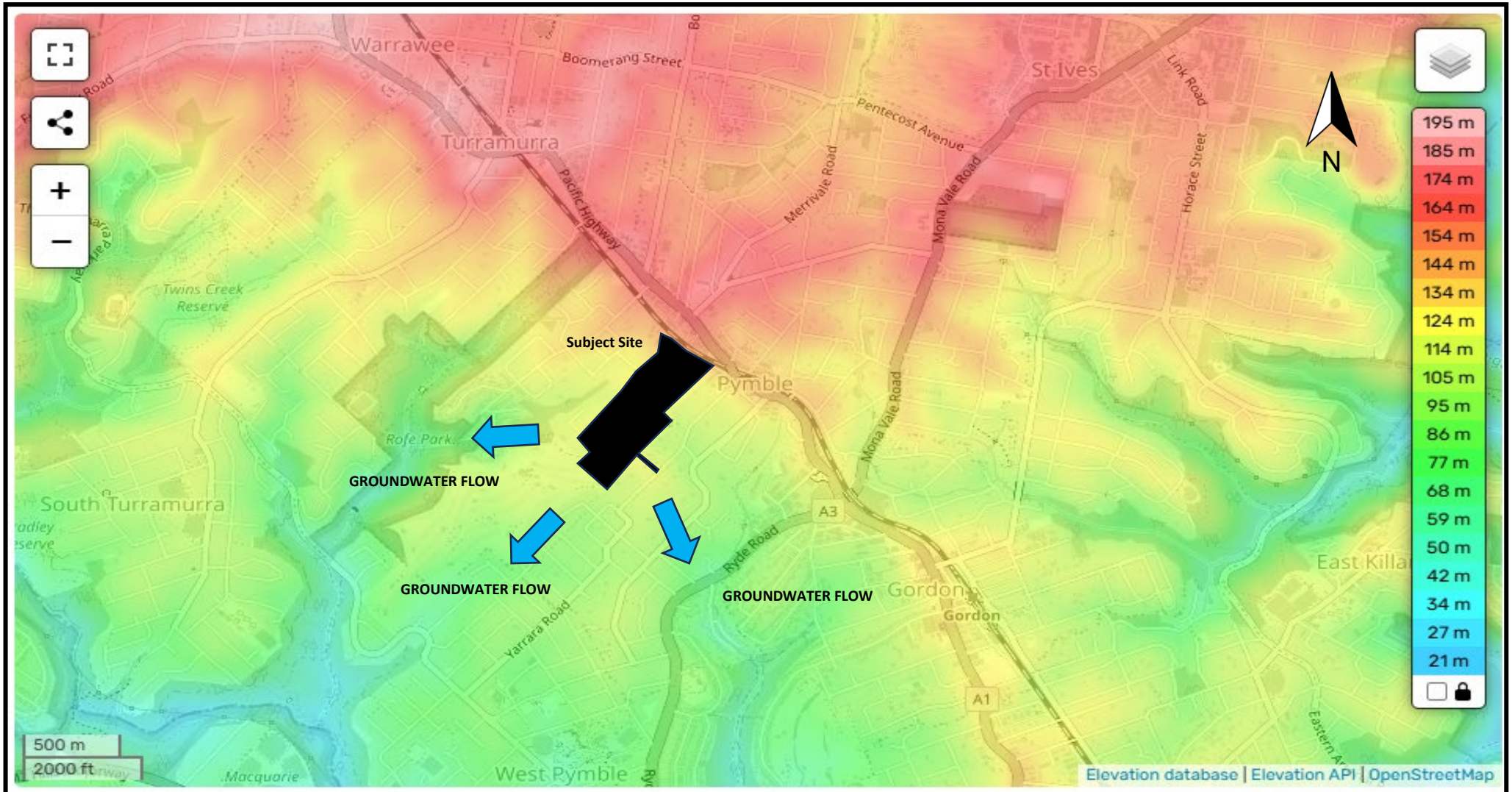
PROJECT DETAILS			DRAWING DETAILS: SITE AERIAL			
Project Title	Detailed Site Investigation		Figure No.	2A	Rev No.	0
Project No.	25-1971		Scale	As above	Size	A4
Client	Pymble Ladies' College		Drawn by	CK	Date	14.04.2025
Site Address	20 Avon Road, Pymble NSW 2073		Approved by	CK	Date	14.04.2025



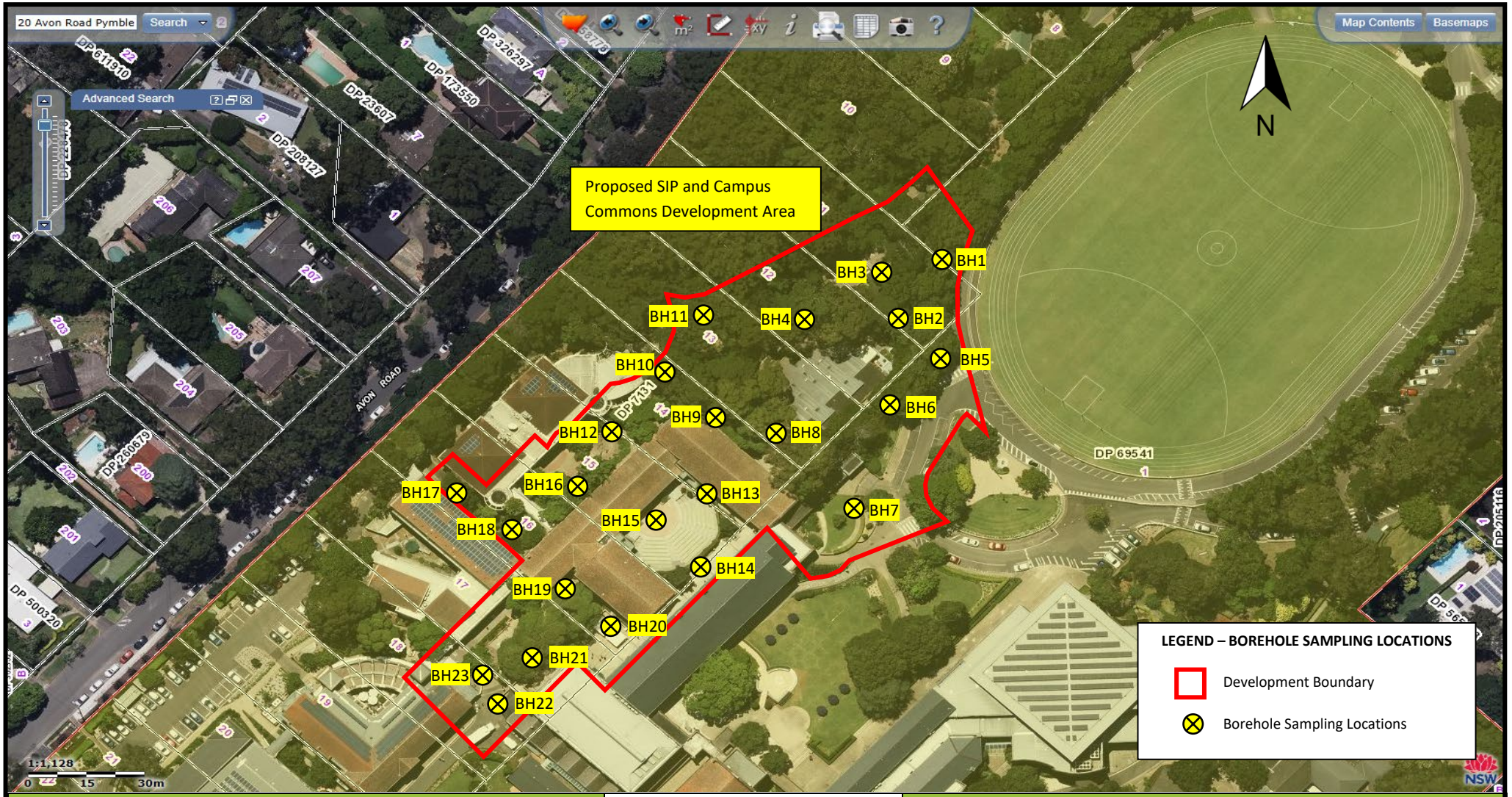
PROJECT DETAILS			DRAWING DETAILS: SITE AERIAL			
Project Title	Detailed Site Investigation		Figure No.	2B	Rev No.	0
Project No.	25-1971		Scale	As above	Size	A4
Client	Pymble Ladies' College		Drawn by	CK	Date	14.04.2025
Site Address	20 Avon Road, Pymble NSW 2073		Approved by	CK	Date	14.04.2025



PROJECT DETAILS			DRAWING DETAILS: ZONING MAP			
Project Title	Detailed Site Investigation		Figure No.	3	Rev No.	0
Project No.	25-1971		Scale	As above	Size	A4
Client	Pymble Ladies' College		Drawn by	CK	Date	14.04.2025
Site Address	20 Avon Road, Pymble NSW 2073		Approved by	CK	Date	14.04.2025



PROJECT DETAILS			DRAWING DETAILS: TOPOGRAPHIC MAP			
Project Title	Detailed Site Investigation		Figure No.	4	Rev No.	0
Project No.	25-1971		Scale	As above	Size	A4
Client	Pymble Ladies' College		Drawn by	CK	Date	14.04.2025
Site Address	20 Avon Road, Pymble NSW 2073		Approved by	CK	Date	14.04.2025



PROJECT DETAILS			DRAWING DETAILS: SAMPLING LOCATIONS			
Project Title	Detailed Site Investigation		Figure No.	5	Rev No.	0
Project No.	25-1971		Scale	As above	Size	A4
Client	Pymble Ladies' College		Drawn by	CK	Date	14.04.2025
Site Address	20 Avon Road, Pymble NSW 2073		Approved by	CK	Date	14.04.2025

APPENDIX B: DEVELOPMENT PLANS

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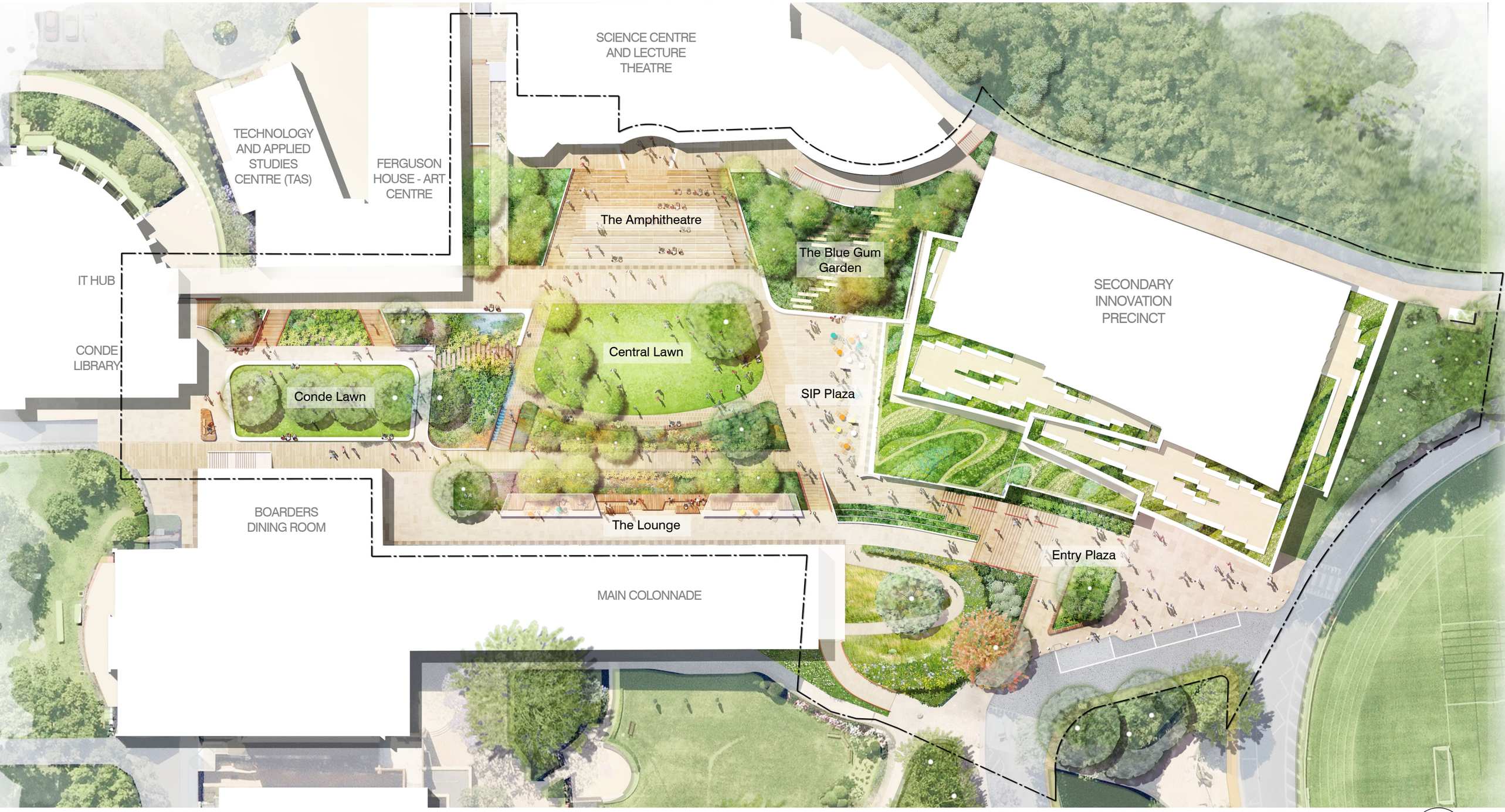
LANDSCAPE DESIGN

Concept Design Plan



1:500 @ A3

0 5 10 15 20

APPENDIX C: SITE PHOTOGRAPHS

ECON Environmental Pty Ltd | ABN 25 641 106 783 | PO Box 85 Oatlands NSW 2117
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Photo 1: Showing borehole BH1 sampling location, 05.04.2025.

Photo 2: Showing borehole BH1 sampling location, looking north, 05.04.2025.

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Photo 3: Showing borehole BH2 sampling location, 05.04.2025.

Photo 4: Showing borehole BH2 sampling location, looking south, 05.04.2025.

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Photo 5: Showing borehole BH3 sampling location, 05.04.2025.

Photo 6: Showing borehole BH3 sampling location, looking west, 05.04.2025.

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Photo 7: Showing borehole BH4 sampling location, 05.04.2025.

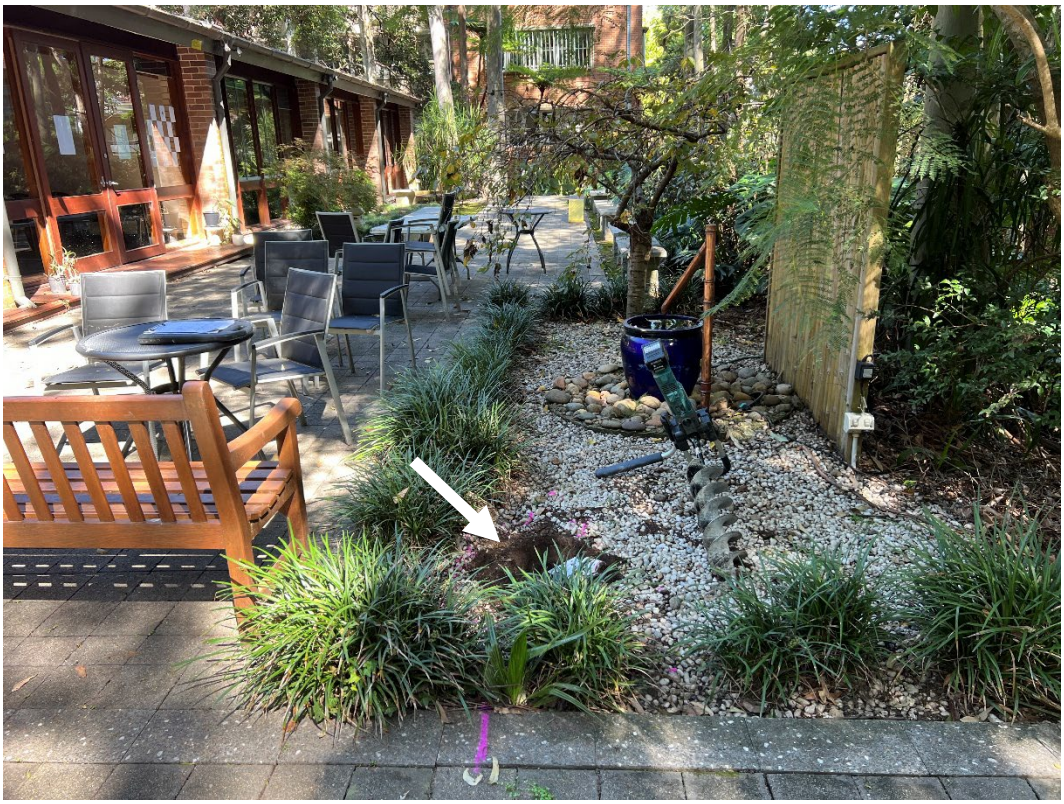

Photo 8: Showing borehole BH4 sampling location, looking south, 05.04.2025.

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Photo 9: Showing borehole BH5 sampling location, 05.04.2025.

Photo 10: Showing borehole BH5 sampling location, looking south, 05.04.2025.

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Photo 11: Showing borehole BH6 sampling location, 05.04.2025.

Photo 12: Showing borehole BH6 sampling location, looking north, 05.04.2025.

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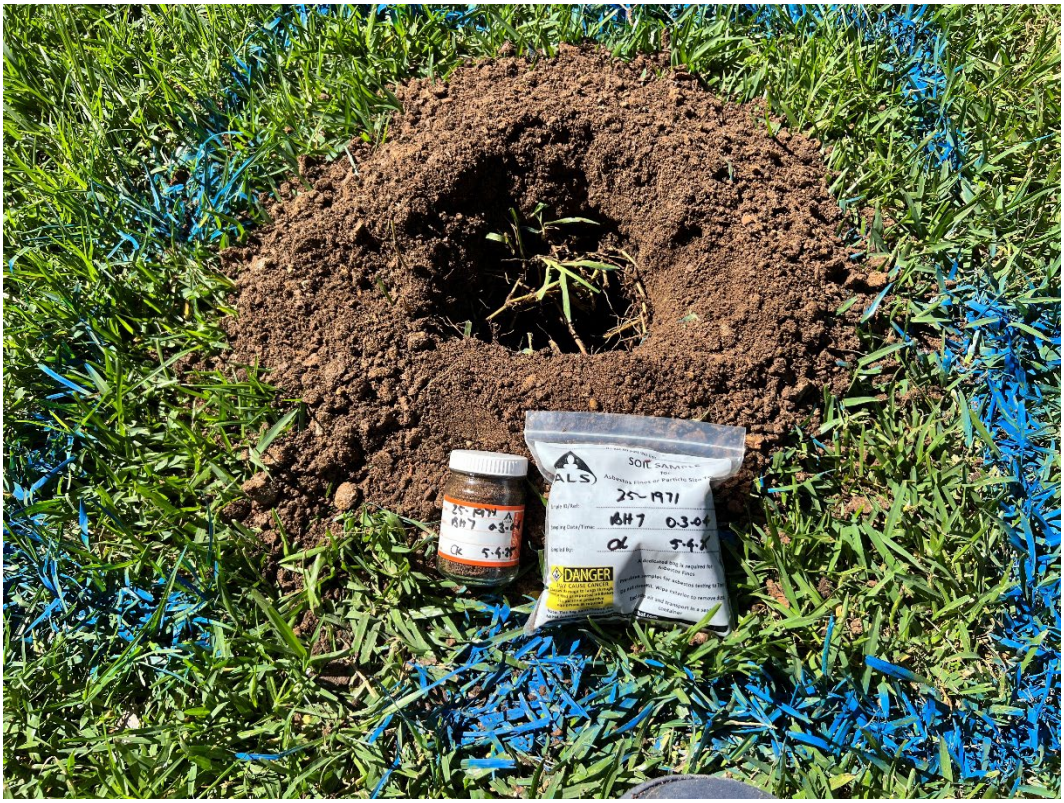

Photo 13: Showing borehole BH7 sampling location, 05.04.2025.

Photo 14: Showing borehole BH7 sampling location, looking north, 05.04.2025.

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Photo 15: Showing borehole BH8 sampling location, 05.04.2025.

Photo 16: Showing borehole BH8 sampling location, looking northeast, 05.04.2025.

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Photo 17: Showing borehole BH9 sampling location, 05.04.2025.

Photo 18: Showing borehole BH9 sampling location, looking west, 05.04.2025.

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Photo 19: Showing borehole BH10 sampling location, 05.04.2025.

Photo 20: Showing borehole BH10 sampling location, looking east, 05.04.2025.

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Photo 21: Showing borehole BH11 sampling location, 05.04.2025.2025.

Photo 22: Showing borehole BH11 sampling location, looking south, 05.04.2025.

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T: 1800 00 ECON | **E:** info@econenvironmental.com.au | **W:** www.econenvironmental.com.au

Photo 23: Showing borehole BH12 sampling location, 05.04.2025.

Photo 24: Showing borehole BH12 sampling location, looking south, 05.04.2025.

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Photo 25: Showing borehole BH13 sampling location, 13.03.2025.

Photo 26: Showing borehole BH13 sampling location, looking west, 05.04.2025.

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T: 1800 00 ECON | **E:** info@econenvironmental.com.au | **W:** www.econenvironmental.com.au

Photo 27: Showing borehole BH14 sampling location, 05.04.2025.

Photo 28: Showing borehole BH14 sampling location, looking west, 05.04.2025.

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T: 1800 00 ECON | **E:** info@econenvironmental.com.au | **W:** www.econenvironmental.com.au

Photo 29: Showing borehole BH15 sampling location, 05.04.2025.

Photo 30: Showing borehole BH15 sampling location, looking south, 05.04.2025.

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T: 1800 00 ECON | **E:** info@econenvironmental.com.au | **W:** www.econenvironmental.com.au

Photo 31: Showing borehole BH16 sampling location, 05.04.2025.

Photo 32: Showing borehole BH16 sampling location, looking north, 05.04.2025.

ECON Environmental Pty Ltd | ABN 25 641 106 783 | PO Box 85 Oatlands NSW 2117
T: 1800 00 ECON | **E:** info@econenvironmental.com.au | **W:** www.econenvironmental.com.au

Photo 33: Showing borehole BH17 sampling location, 05.04.2025.

Photo 34: Showing borehole BH17 sampling location, looking east, 05.04.2025.

ECON Environmental Pty Ltd | ABN 25 641 106 783 | PO Box 85 Oatlands NSW 2117
T: 1800 00 ECON | **E:** info@econenvironmental.com.au | **W:** www.econenvironmental.com.au

Photo 35: Showing borehole BH18 sampling location, 05.04.2025.

Photo 36: Showing borehole BH18 sampling location, looking west, 05.04.2025.

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T: 1800 00 ECON | **E:** info@econenvironmental.com.au | **W:** www.econenvironmental.com.au

Photo 37: Showing borehole BH19 sampling location, 05.04.2025.

Photo 38: Showing borehole BH19 sampling location, looking south, 05.04.2025.

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Photo 39: Showing borehole BH20 sampling location, 05.04.2025.

Photo 40: Showing borehole BH20 sampling location, looking west, 05.04.2025.

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Photo 41: Showing borehole BH21 sampling location, 05.04.2025.

Photo 42: Showing borehole BH21 sampling location, looking west, 05.04.2025.

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Photo 43: Showing borehole BH22 sampling location, 05.04.2025.

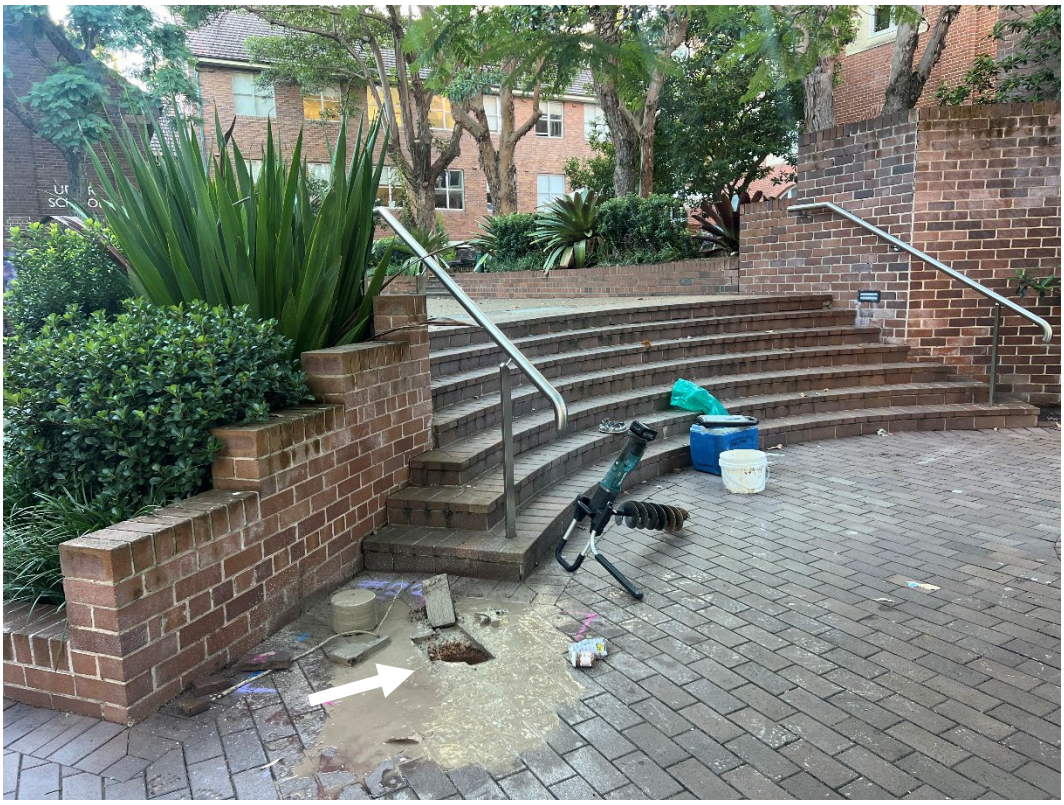

Photo 44: Showing borehole BH22 sampling location, looking north, 05.04.2025.

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Photo 45: Showing borehole BH23 sampling location, 05.04.2025.

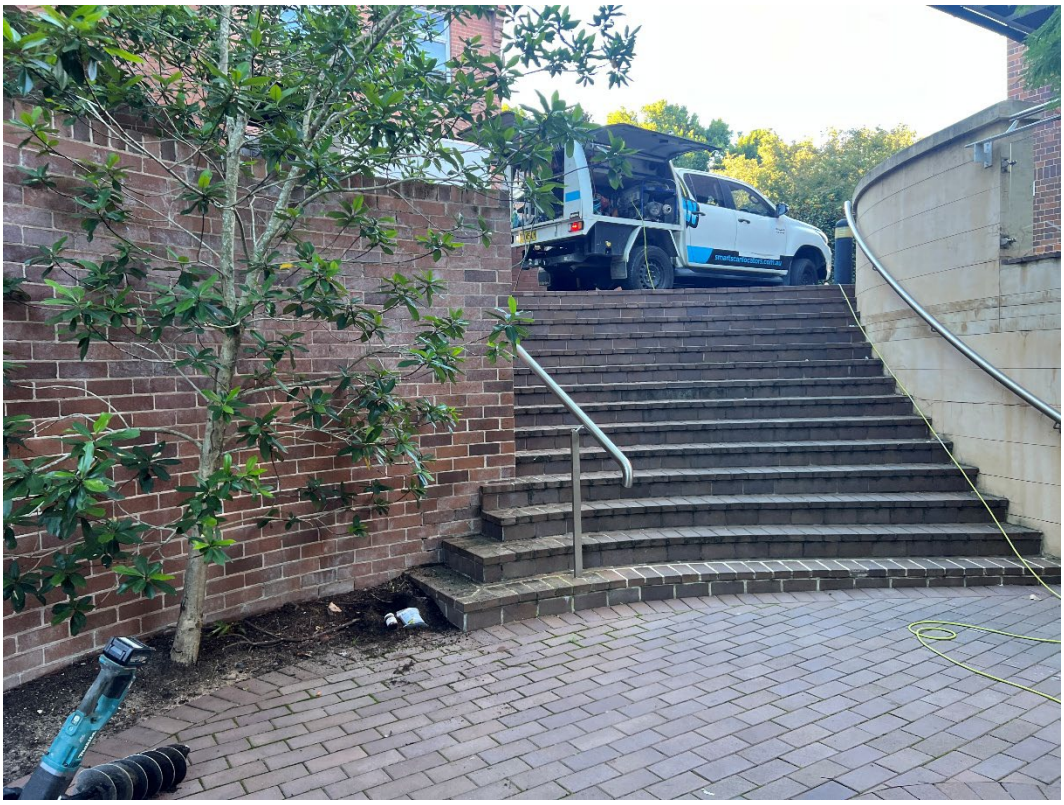

Photo 46: Showing borehole BH23 sampling location, looking east, 05.04.2025.

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APPENDIX D: FIELDNOTES

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Site Assessment
Daily Worksheet Record

ECON ENVIRONMENTAL

PROJECT NAME: DSI	**PROJECT NO:** 25-1971
CLIENT: Dymble Ladies College.	**DATE:** 5-4-25
SITE ADDRESS: 20 Avon Rd Dymble.	
SITE CONTACT: Greg Hastie	**PHONE:** 0411477006
ECON REPRESENTATIVE: Con Karatoglou	
TITLE: Environmental Consultant	**PHONE:** 0452654962

FIELD NOTES:

Start Time 7.00am.	Finish Time 3.30pm.
Weather Sunny	Rainfall (mm) NIL
Wind Direction WNW -> SSE	Wind Speed 6km -> 13km/hr
Humidity 80% - 29%	Temperature 26.6°C

Environmental and Safety Concerns

Odours Present NIL	Staining Present NIL
USTs Present NIL	ACM Present NIL
Chemicals Present NIL	Other Hazards Present NIL

Actions

Site Safety Induction N/A	Stormwater Control N/A
Dust Suppression N/A	Traffic Control N/A
Machinery onsite N/A	Equipment onsite Concrete corer.

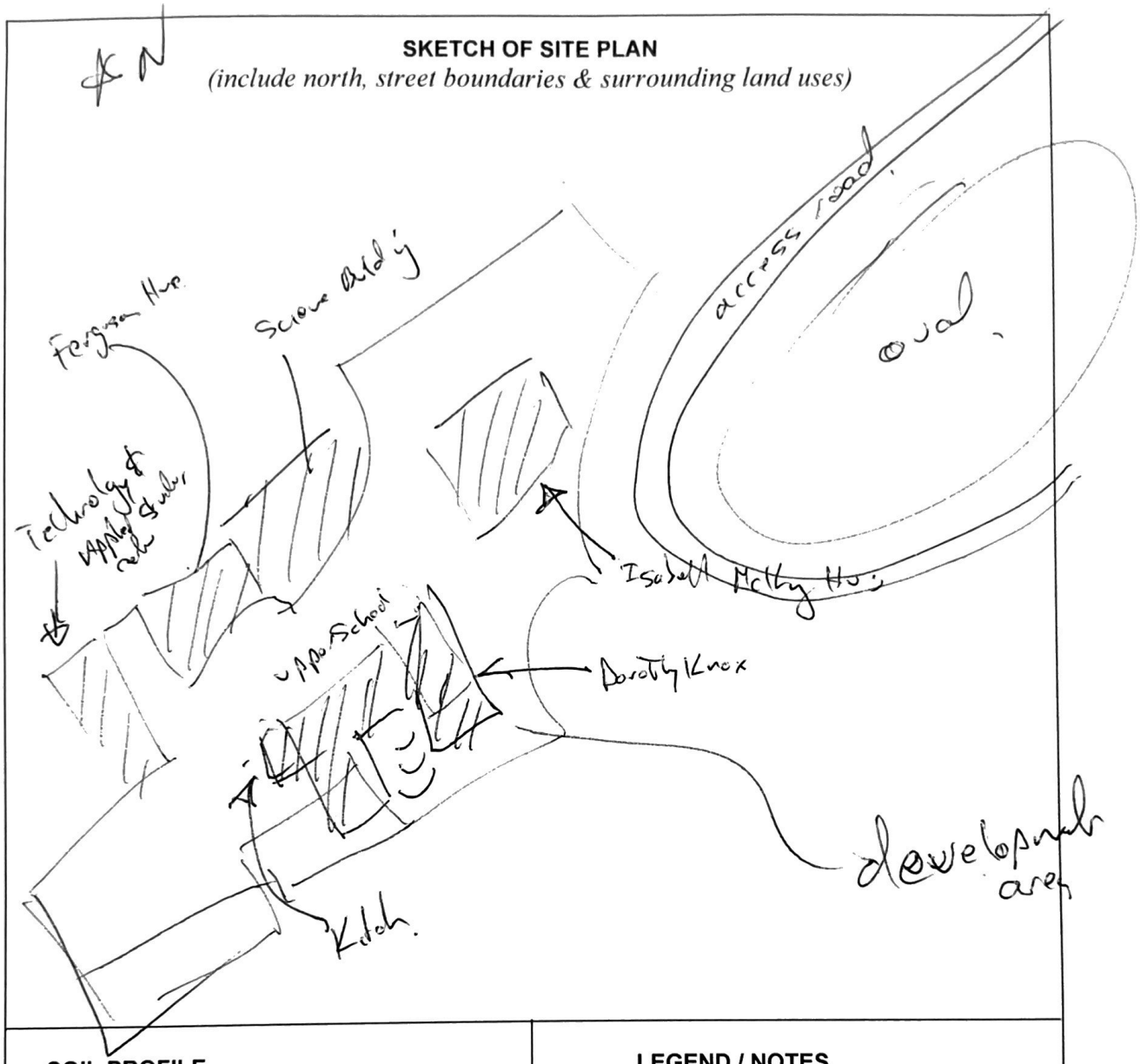
Other Comments Hand Auger, PPE, ESK- Icebreaker sampling containers

Description of Site Activities

ECON ENVIRONMENTAL

SKETCH OF SITE PLAN

(include north, street boundaries & surrounding land uses)

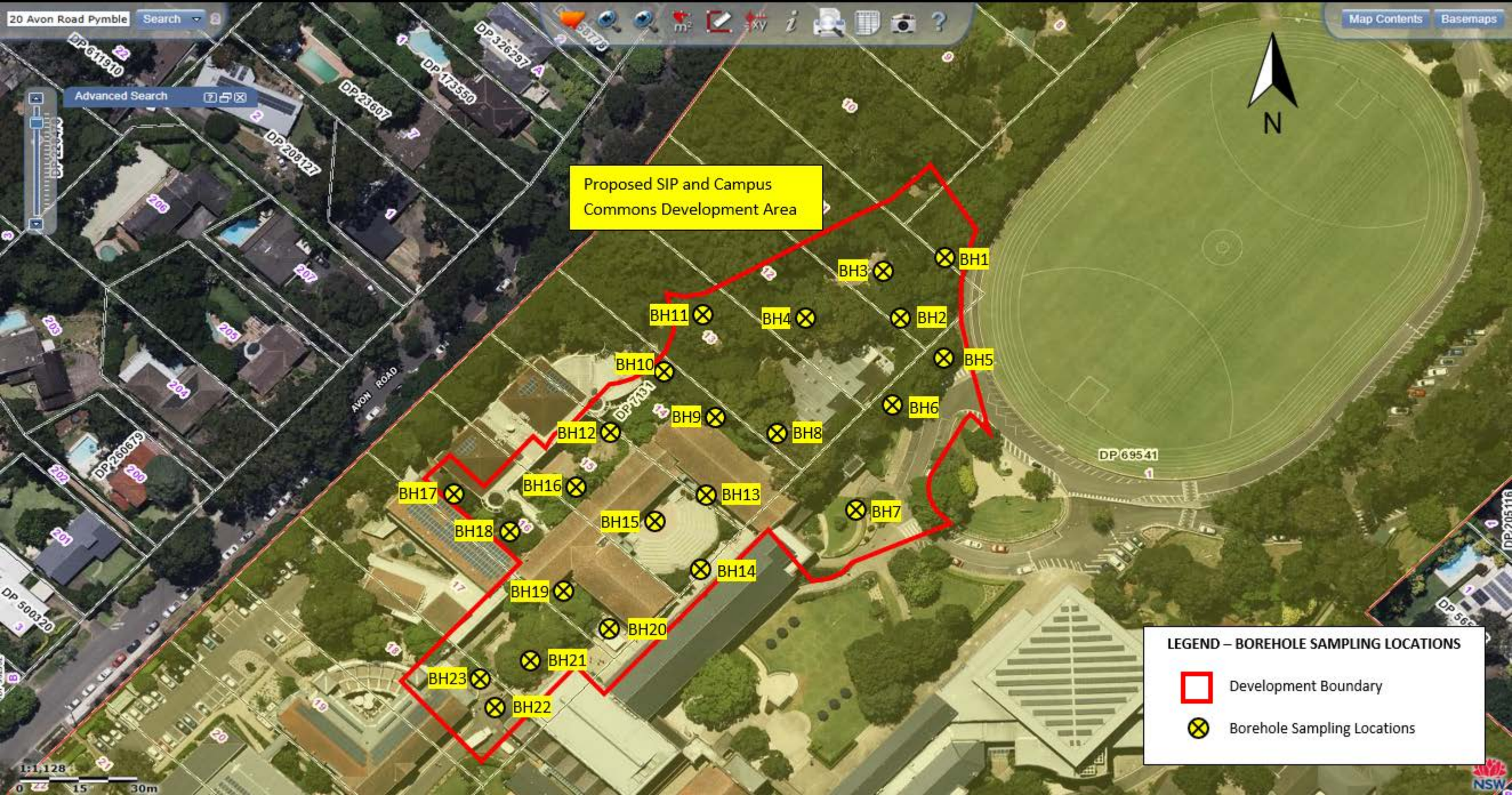


SOIL PROFILE

LEGEND / NOTES

Buildgs

Amphitheatre


20 Avon Road Pymble
Search
Advanced Search
Map Contents
Basemaps
Proposed SIP and Campus Commons Development Area
BH1
BH2
BH3
BH4
BH5
BH6
BH7
BH8
BH9
BH10
BH11
BH12
BH13
BH14
BH15
BH16
BH17
BH18
BH19
BH20
BH21
BH22
BH23
DP 695 41
AVON ROAD
N
1:1,128
0 15 30m
LEGEND – BOREHOLE SAMPLING LOCATIONS
Development Boundary
Borehole Sampling Locations

Soil Sampling

ECON ENVIRONMENTAL

SOIL ASSESSMENT AND SAMPLING

Sample No. (show on site plan)	Depth (m)	Material Description Fill / Natural	PID (ppm)
BH1	0.1-0.2	Topsoil 0-0.1 (N) @ 0.1-0.2m	Silty clay, med plasticity
BH2	0.2-0.3	Silty clay loam with pebbles (N) at 0.3m	
(A1) BH3	0.8-0.9	Silty clay loam. (N) at 1.0m.	
BH4	0.4-0.5	Silty clay loam (N) at 0.5m.	
BH5	0.3-0.4	Silty clay loam (N) at 0.4m.	
BH6	1.4-1.5	Silty clay loam. (N) at 1.5m.	
BH7	0.3-0.4	Silty clay loam (N) at 0.4m.	
BH8	0.8-0.9	Silty clay loam (N) at 0.9m.	
BH9	1.2-1.3	Silty clay loam. (N) at 1.3m.	
BH10	0.6-0.7	Silty clay loam (N) at 0.7m.	
BH11	0.2-0.3	Silty clay loam. (N) at 0.3m.	
BH12	1.0-1.1	Silty clay loam (N) at 1.0m.	
BH13	0.3-0.4	Slab 0.2m. Silty clay loam 0.2-0.4 (N) @ 0.4m.	
BH14	0.4-0.5	Slab 0.2m Silty clay loam 0.4-0.5 (N) at 0.5m.	
BH15	0.5-0.6	Slab 0.4m Sandgravel 0.5-0.6 (N) at 0.6m.	
BH16	0.7-0.8	Silty clay loam (N) at 0.8m.	
BH17	0.9-1.0	Silty clay loam (N) at 1.0m.	
(A2) BH18	0.3-0.4	Silty clay loam (N) at 0.4m.	Slurry/gravel layer @ 0.2m.
BH19.	0.3-0.4	Gravelly silty clay (N) at 0.4m.	
BH20	1.4-1.5	Silty clay loam Slab 0.2m (N) at 1.5m.	
BH21	0.3-0.4	Slab 0.3m Silty clay loam + gravel sand (N) at 0.4m	
BH22	0.3-0.4	0.1m pavers + 0.3 concrete slab Silty clay (N) at 0.4m	
BH23	0.5-0.6	topsoils 0.5-0.6 (N) at 0.6m.	

APPENDIX E: SITE ASSESSMENT CRITERIA

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6 Tabulated investigation and screening levels

ROUNDING APPLIED TO INVESTIGATION AND SCREENING LEVELS

Tables 1A (HILs and interim HILs)

Rounded to 1 or 2 significant figures (see Schedule B7 Appendix C for details)

Tables 1A (HSLs) and 1B (EILs and ESLs) rounding rules

< 1	**to nearest 0.1**
1–<10	**to nearest whole number**
1–< 100	**to nearest 5**
100–<1,000	**to nearest 10**
1,000–<10,000	**to nearest 100**
≥10,000	**to nearest 1,000**

Numbers ending in '5' are rounded up, for example:

0.05 rounded to 0.1

1.5 rounded to 2

115 rounded to 120

Table 1A(1) Health investigation levels for soil contaminants

Chemical	Health-based investigation levels (mg/kg)			
	Residential[1] A	Residential[1] B	Recreational[1] C	Commercial/ industrial[1] D
Metals and Inorganics				
Arsenic[2]	100	500	300	3 000
Beryllium	60	90	90	500
Boron	4500	40 000	20 000	300 000
Cadmium	20	150	90	900
Chromium (VI)	100	500	300	3600
Cobalt	100	600	300	4000
Copper	6000	30 000	17 000	240 000
Lead[3]	300	1200	600	1 500
Manganese	3800	14 000	19 000	60 000
Mercury (inorganic)[5]	40	120	80	730
Methyl mercury[4]	10	30	13	180
Nickel	400	1200	1200	6 000
Selenium	200	1400	700	10 000
Zinc	7400	60 000	30 000	400 000
Cyanide (free)	250	300	240	1 500
Polycyclic Aromatic Hydrocarbons (PAHs)				
Carcinogenic PAHs (as BaP TEQ)[6]	3	4	3	40
Total PAHs[7]	300	400	300	4000
Phenols				
Phenol	3000	45 000	40 000	240 000
Pentachlorophenol	100	130	120	660
Cresols	400	4 700	4 000	25 000
Organochlorine Pesticides				
DDT+DDE+DDD	240	600	400	3600
Aldrin and dieldrin	6	10	10	45
Chlordane	50	90	70	530
Endosulfan	270	400	340	2000
Endrin	10	20	20	100
Heptachlor	6	10	10	50
HCB	10	15	10	80
Methoxychlor	300	500	400	2500
Mirex	10	20	20	100
Toxaphene	20	30	30	160
Herbicides				
2,4,5-T	600	900	800	5000
2,4-D	900	1600	1300	9000
MCPA	600	900	800	5000

Chemical	Health-based investigation levels (mg/kg)			
	Residential[1] A	Residential[1] B	Recreational[1] C	Commercial/ industrial[1] D
MCPB	600	900	800	5000
Mecoprop	600	900	800	5000
Picloram	4500	6600	5700	35000
Other Pesticides				
Atrazine	320	470	400	2500
Chlorpyrifos	160	340	250	2000
Bifenthrin	600	840	730	4500
Other Organics				
PCBs[8]	1	1	1	7
PBDE Flame Retardants (Br1–Br9)	1	2	2	10

Notes:

(1) Generic land uses are described in detail in Schedule B7 Section 3

HIL A – Residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake (no poultry), also includes childcare centres, preschools and primary schools.

HIL B – Residential with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high-rise buildings and apartments.

HIL C – Public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths. This does not include undeveloped public open space where the potential for exposure is lower and where a site-specific assessment may be more appropriate.

HIL D – Commercial/industrial, includes premises such as shops, offices, factories and industrial sites.

(2) Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavailability may be important and should be considered where appropriate (refer Schedule B7).

(3) Lead: HIL is based on blood lead models (IEUBK for HILs A, B and C and adult lead model for HIL D where 50% oral bioavailability has been considered. Site-specific bioavailability may be important and should be considered where appropriate.

(4) Methyl mercury: assessment of methyl mercury should only occur where there is evidence of its potential source. It may be associated with inorganic mercury and anaerobic microorganism activity in aquatic environments. In addition the reliability and quality of sampling/analysis should be considered.

(5) Elemental mercury: HIL does not address elemental mercury. A site-specific assessment should be considered if elemental mercury is present, or suspected to be present,

(6) Carcinogenic PAHs: HIL is based on the 8 carcinogenic PAHs and their TEFs (potency relative to B(a)P) adopted by CCME 2008 (refer Schedule B7). The B(a)P TEQ is calculated by multiplying the concentration of each carcinogenic PAH in the sample by its B(a)P TEF, given below, and summing these products.

PAH species	TEF	PAH species	TEF
Benzo(a)anthracene	0.1	Benzo(g,h,i)perylene	0.01
Benzo(a)pyrene	1	Chrysene	0.01
Benzo(b+j)fluoranthene	0.1	Dibenz(a,h)anthracene	1
Benzo(k)fluoranthene	0.1	Indeno(1,2,3-c,d)pyrene	0.1

Where the B(a)P occurs in bitumen fragments it is relatively immobile and does not represent a significant health risk.

(7) Total PAHs: HIL is based on the sum of the 16 PAHs most commonly reported for contaminated sites (WHO 1998). The application of the total PAH HIL should consider the presence of carcinogenic PAHs and naphthalene (the most volatile PAH). Carcinogenic PAHs reported in the total PAHs should meet the B(a)P TEQ HIL. Naphthalene reported in the total PAHs should meet the relevant HSL.

(8) PCBs: HIL relates to non-dioxin-like PCBs only. Where a PCB source is known, or suspected, to be present at a site, a site-specific assessment of exposure to all PCBs (including dioxin-like PCBs) should be undertaken.

Table 1B(1) Soil-specific added contaminant limits for aged zinc in soil

Zn added contaminant limits (ACL, mg added contaminant/kg)						
Areas of ecological significance						
pH[a]	***CEC[b] ($cmol_c/kg$)***					
	5	***10***	***20***	***30***	***40***	***60***
4.0	15	20	20	20	20	20
4.5	20	25	25	25	25	25
5.0	30	40	40	40	40	40
5.5	40	60	60	60	60	60
6.0	50	90	90	90	90	90
6.5	50	90	130	130	130	130
7.0	50	90	150	190	190	190
7.5	50	90	150	210	260	280
Urban residential/public open space[1]						
pH[a]	***CEC[b] ($cmol_c/kg$)***					
	5	***10***	***20***	***30***	***40***	***60***
4.0	70	85	85	85	85	85
4.5	100	120	120	120	120	120
5.0	130	180	180	180	180	180
5.5	180	270	270	270	270	270
6.0	230	400	400	400	400	400
6.5	230	400	590	590	590	590
7.0	230	400	700	880	880	880
7.5	230	400	700	960	1200	1300
Commercial/industrial						
pH[a]	***CEC[b] ($cmol_c/kg$)***					
	5	***10***	***20***	***30***	***40***	***60***
4.0	110	130	130	130	130	130
4.5	150	190	190	190	190	190
5.0	210	290	290	290	290	290
5.5	280	420	420	420	420	420
6.0	360	620	620	620	620	620
6.5	360	620	920	920	920	920
7.0	360	620	1100	1400	1400	1400
7.5	360	620	1100	1500	1900	2000

1. Urban residential/public open space is broadly equivalent to the HIL A, HIL B and HIL C land use scenarios in Table 1A(1) Footnote 1 and as described in Schedule B7.
2. Aged values apply to contamination present in soil for at least two years. For fresh contamination refer to Schedule B5c.
3. The EIL is calculated from summing the ACL and the ABC.

a = pH measured using the $CaCl_2$ method (Rayment & Higginson 1992).

b = CEC measured using the silver thiourea method (Chabra et al. 1972).

Table 1B(2) Soil-specific added contaminant limits for aged copper in soils

Cu added contaminant limits (ACL, mg added contaminant/kg)					
Areas of ecological significance					
CEC ($cmol_c/kg$)[a] based					
5	***10***	***20***	***30***	***40***	***60***
30	65	70	70	75	80
pH[b] based					
4.5	***5.5***	***6***	***6.5***	***7.5***	***8.0***
20	45	65	90	190	270
Urban residential/public open space[1]					
CEC ($cmol_c/kg$)[a] based					
5	***10***	***20***	***30***	***40***	***60***
95	190	210	220	220	230
pH[b] based					
4.5	***5.5***	***6***	***6.5***	***7.5***	***8.0***
60	130	190	280	560	800
Commercial/industrial					
CEC ($cmol_c/kg$)[a] based					
5	***10***	***20***	***30***	***40***	***60***
140	280	300	320	330	340
pH[b] based					
4.5	***5.5***	***6***	***6.5***	***7.5***	***8.0***
85	190	280	400	830	1200

Notes:

1. Urban residential/public open space is broadly equivalent to the HIL A, HIL B and HIL C land use scenarios in Table 1A(1) Footnote 1 and as described in Schedule B7.
2. The lower of the CEC or the pH-based ACLs for the land use and soil conditions is the ACL to be used.
3. Aged values apply to contamination present in soil for at least two years. For fresh contamination refer to Schedule B5c.
4. The EIL is calculated from summing the ACL and the ABC.

a = CEC measured using the silver thiourea method (Chabra et al. 1972).

b = pH measured using the $CaCl_2$ method (Rayment & Higginson 1992).

Table 1B(3) Soil-specific added contaminant limits for aged chromium III and nickel in soil

CHEMICAL	Clay content (% clay)	Added contaminant limits (mg added contaminant/kg) for various land uses		
		Areas of ecological significance	Urban residential and public open space	Commercial and industrial
Chromium III	*1*	60	190	310
	2.5	80	250	420
	5	100	320	530
	≥10	130	400	660
Nickel	CEC[a] ($cmol_c/kg$)	Areas of ecological significance	Urban residential and public open space[1]	Commercial and industrial
	5	5	30	55
	10	30	170	290
	20	45	270	460
	30	60	350	600
	40	70	420	730
	60	95	560	960

Notes:

1. Urban residential/public open space is broadly equivalent to the HIL A, HIL B and HIL C land use scenarios in Table 1A(1) Footnote 1 and as described in Schedule B7.
2. Aged values apply to contamination present in soil for at least two years. For fresh contamination refer to Schedule B5c.
3. The EIL is calculated from summing the ACL and the ABC.

a = CEC measured using the silver thiourea method (Chabra et al. 1972).

Table 1B(4) Generic added contaminant limits for lead in soils irrespective of their physicochemical properties

	Pb added contaminant limit (ACL, mg added contaminant/kg) for various land uses		
CHEMICAL	Areas of ecological significance	Urban residential and public open space[1]	Commercial and industrial
Lead	470	1100	1800

Notes:

1. Urban residential/public open space is broadly equivalent to the HIL A, HIL B and HIL C land use scenarios in Table 1A(1) Footnote 1 and as described in Schedule B7.
2. Aged values are applicable to lead contamination present in soil for at least two years. For fresh contamination refer to Schedule B5c.
3. The EIL is calculated from summing the ACL and the ABC.

Table 1B(5) Generic EILs for aged As, fresh DDT and fresh naphthalene in soils irrespective of their physicochemical properties

	Ecological Investigation Levels (mg total contaminant/kg)		
CHEMICAL	**Areas of ecological significance**	**Urban residential and public open space[1]**	**Commercial and industrial**
Arsenic[2]	40	100	160
DDT[3]	3	180	640
Naphthalene[3]	10	170	370

Notes:

1. Urban residential/public open space is broadly equivalent to the HIL-A, HIL-B and HIL-C land use scenarios in Table 1A(1) Footnote 1 and as described in Schedule B7.
2. Aged values are applicable to arsenic contamination present in soil for at least two years. For fresh contamination refer to Schedule B5c.
3. Insufficient data was available to calculate aged values for DDT and naphthalene, consequently the values for fresh contamination should be used.
4. Insufficient data was available to calculate ACLs for As, DDT and naphthalene. The EIL should be taken directly from Table 1B(5).

Table 1B(6) ESLs for TPH fractions F1 – F4, BTEX and benzo(a)pyrene in soil

CHEMICAL	Soil texture	ESLs (mg/kg dry soil)		
		Areas of ecological significance	Urban residential and public open space	Commercial and industrial
F1 C_6-C_{10}	*Coarse/ Fine*	125*	180*	215*
F2 >C_{10}-C_{16}		25*	120*	170*
F3 >C_{16}-C_{34}	*Coarse*	-	300	1700
	Fine	-	1300	2500
F4 >C_{34}-C_{40}	*Coarse*	-	2800	3300
	Fine	-	5600	6600
Benzene	*Coarse*	10	50	75
	Fine	10	65	95
Toluene	*Coarse*	10	85	135
	Fine	65	105	135
Ethylbenzene	*Coarse*	1.5	70	165
	Fine	40	125	185
Xylenes	*Coarse*	10	105	180
	Fine	1.6	45	95
Benzo(a)pyrene	*Coarse*	0.7	0.7	0.7
	Fine	0.7	0.7	0.7

Notes:

(1) ESLs are of low reliability except where indicated by * which indicates that the ESL is of moderate reliability.

(2) '-' indicates that insufficient data was available to derive a value.

(3) To obtain F1, subtract the sum of BTEX concentrations from C_6-C_{10} fraction and subtract naphthalene from >C_{10}-C_{16} to obtain F2.

Table 1 B(7) Management Limits for TPH fractions F1–F4 in soil

TPH fraction	Soil texture	Management Limits[1] (mg/kg dry soil)	
		Residential, parkland and public open space	Commercial and industrial
F1[2] C_6- C_{10}	*Coarse*	700	700
	Fine	800	800
F2[2] >C_{10}-C_{16}	*Coarse*	1000	1000
	Fine	1000	1000
F3 >C_{16}-C_{34}	*Coarse*	2500	3500
	Fine	3500	5000
F4 >C_{34}-C_{40}	*Coarse*	10 000	10 000
	Fine	10 000	10 000

[1] Management limits are applied after consideration of relevant ESLs and HSLs

[2] Separate management limits for BTEX and naphthalene are not available hence these should not be subtracted from the relevant fractions to obtain F1 and F2.

Table 7. Health screening levels for asbestos contamination in soil

	Health Screening Level (w/w)			
Form of asbestos	**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[5] (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.
5. The screening level of 0.001% w/w asbestos in soil for FA and AF (i.e. non-bonded/friable asbestos) only applies where the FA and AF are able to be quantified by gravimetric procedures (refer Section 4.10). This screening level is not applicable to free fibres.

APPENDIX F: SUMMARY OF RESULTS

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TABLE A
SCHEDULE OF LABORATORY TESTING

Analyte / Analyte Group Sample	Depth (m)	TYPE	SAMPLING DATE	DUPLICATE	MET-8	TPH & BTEX	PAH	OCP	PCB	PHENOLS	ASBESTOS
BH1	0.1-0.2	F	05.04.2025		✔	✔	✔	✔	✔	✔	✔
BH2	0.2-0.3	F	05.04.2025		✔	✔	✔	✔	✔	✔	✔
BH3	0.8-0.9	F	05.04.2025	D1	✔	✔	✔	✔	✔	✔	✔
BH4	0.4-0.5	F	05.04.2025		✔	✔	✔	✔	✔	✔	✔
BH5	0.3-0.4	F	05.04.2025		✔	✔	✔	✔	✔	✔	✔
BH6	1.4-1.5	F	05.04.2025		✔	✔	✔	✔	✔	✔	✔
BH7	0.3-0.4	F	05.04.2025		✔	✔	✔	✔	✔	✔	✔
BH8	0.8-0.9	F	05.04.2025		✔	✔	✔	✔	✔	✔	✔
BH9	1.2-1.3	F	05.04.2025		✔	✔	✔	✔	✔	✔	✔
BH10	0.6-0.7	F	05.04.2025		✔	✔	✔	✔	✔	✔	✔
BH11	0.2-0.3	F	05.04.2025		✔	✔	✔	✔	✔	✔	✔
BH12	1.0-1.1	F	05.04.2025		✔	✔	✔	✔	✔	✔	✔
BH13	0.3-0.4	F	05.04.2025		✔	✔	✔	✔	✔	✔	✔
BH14	0.4-0.5	F	05.04.2025		✔	✔	✔	✔	✔	✔	✔
BH15	0.5-0.6	F	05.04.2025		✔	✔	✔	✔	✔	✔	✔
BH16	0.7-0.8	F	05.04.2025		✔	✔	✔	✔	✔	✔	✔
BH17	0.9-1.0	F	05.04.2025		✔	✔	✔	✔	✔	✔	✔
BH18	0.3-0.4	F	05.04.2025	D2	✔	✔	✔	✔	✔	✔	✔
BH19	0.3-0.4	F	05.04.2025		✔	✔	✔	✔	✔	✔	✔
BH20	1.4-1.5	F	05.04.2025		✔	✔	✔	✔	✔	✔	✔
BH21	0.3-0.4	F	05.04.2025		✔	✔	✔	✔	✔	✔	✔
BH22	0.3-0.4	F	05.04.2025		✔	✔	✔	✔	✔	✔	✔
BH23	0.5-0.6	F	05.04.2025		✔	✔	✔	✔	✔	✔	✔

Notes

MET-8: arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc
OCP : Organochlorine Pesticides
OPP : Organophosphorus Pesticides
PCB : Polychlorinated Biphenyls
VOC: Volatile Organic Compounds
PAH: Polycyclic Aromatic Hydrocarbons
TPH: Total Petroleum Hydrcarbons
BTEX: Benzene, Toluene, Ethyl Benzene, Xylene
F,T,N: Fill, Topsoil, Natural

TABLE B

HEAVY METALS TEST RESULTS FOR HILs & ESLs

Analyte / Sample Location	Sample Date	Depth (m)	HEAVY METALS (mg/kg) ARSENIC	CADMIUM	CHROMIUM (VI)	COPPER	MERCURY	NICKEL	LEAD [g]	ZINC
BH1	05.04.2025	0.1-0.2	7	<1	13	22	<0.1	4	30	20
BH2	05.04.2025	0.2-0.3	<5	<1	18	33	<0.1	15	18	72
BH3	05.04.2025	0.8-0.9	8	<1	21	23	<0.1	16	25	56
BH4	05.04.2025	0.4-0.5	7	<1	13	38	<0.1	5	33	52
BH5	05.04.2025	0.3-0.4	<5	<1	8	18	<0.1	4	36	53
BH6	05.04.2025	1.4-1.5	<5	<1	21	22	<0.1	4	12	30
BH7	05.04.2025	0.3-0.4	7	<1	13	20	<0.1	6	31	72
BH8	05.04.2025	0.8-0.9	<5	<1	7	32	<0.1	3	17	40
BH9	05.04.2025	1.2-1.3	<5	<1	10	33	<0.1	5	31	39
BH10	05.04.2025	0.6-0.7	6	<1	24	24	<0.1	22	19	39
BH11	05.04.2025	0.2-0.3	<5	<1	21	31	<0.1	17	19	64
BH12	05.04.2025	1.0-1.1	9	<1	55	29	<0.1	52	16	55
BH13	05.04.2025	0.3-0.4	11	<1	16	30	0.2	5	74	47
BH14	05.04.2025	0.4-0.5	10	<1	17	42	<0.1	10	66	28
BH15	05.04.2025	0.5-0.6	16	<1	4	39	<0.1	3	9	29
BH16	05.04.2025	0.7-0.8	15	<1	16	41	2.4	4	35	119
BH17	05.04.2025	0.9-1.0	6	<1	17	33	<0.1	13	33	84
BH18	05.04.2025	0.3-0.4	7	<1	20	18	<0.1	14	16	21
BH19	05.04.2025	0.3-0.4	<5	<1	61	48	<0.1	56	7	41
BH20	05.04.2025	1.4-1.5	10	<1	15	46	0.4	12	81	69
BH21	05.04.2025	0.3-0.4	<5	<1	88	29	<0.1	122	7	44
BH22	05.04.2025	0.3-0.4	5	<1	11	27	<0.1	5	20	37
BH23	05.04.2025	0.5-0.6	<5	<1	10	16	<0.1	8	16	46
Practical Quantitation Limits (PQL)			5	1	2	5	0.1	2	5	5
NATIONAL ENVIRONMENT PROTECTION MEASURE (2013)										
Health Investigation Levels (HIL) - Table 1A (1)										
HIL A [a]			100	20	100	6000	40[e] / 10[f]	400	300	7400
HIL B [b]			500	150	500	30,000	120[e] / 30[f]	1200	1200	60,000
HIL C [c]			300	90	300	17,000	80[e] / 13[f]	1200	600	30,000
HIL D [d]			3000	900	3600	240,000	730[e] / 180[f]	6000	1500	400,000
Ecological Investigation Levels (EIL) - Table 1B (5)										
Areas of ecological significance			40[h]							
Urban residential and public open space [i]			100[h]							
Commercial and industrial			160[h]							

Notes

a: Residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake (no poultry), also includes childcare centres, preschools and primary schools.

b: Residential with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high rise buildings and apartments.

c: Public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths. This does not include undeveloped public open space where the potential for exposure is lower and where a site-specific assessment may be more appropriate

d: Commercial/industrial, includes premises such as shops, offices, factories and industrial sites

e: Elemental mercury: HIL does not address elemental mercury. A site-specific assessment should be considered if elemental mercury is present, or suspected to be present,

f: Methyl mercury: assessment of methyl mercury should only occur where there is evidence of its potential source. It may be associated with inorganic mercury and anaerobic microorganism activity in aquatic environments. In addition the reliability and quality of sampling/analysis should be considered.

g: Lead: HIL is based on blood lead models (IEUBK for HILs A, B and C and adult lead model for HIL D where 50% oral bioavailability has been considered. Site-specific bioavailability may be important and should be considered where appropriate.

h: Aged values are applicable to arsenic contamination present in soil for at least two years. For fresh contamination refer to Schedule B5c.

i: Urban residential / public open space is broadly equivalent to the HIL-A, HIL-B and HIL-C land use scenarios in Table 1A(1) Footnote 1 and as described in Schedule B7.

TABLE C
TOTAL RECOVERABLE HYDROCARBONS (TRH), BTEX AND NAPHTHALENE TEST RESULTS
FOR HSLs IN CLAY

Analyte / Sample Location	Sample Date	Depth (m)	TRH (mg/kg) F1 [a]	TRH (mg/kg) F2 [b]	BTEX (mg/kg) BENZENE	BTEX (mg/kg) TOLUENE	BTEX (mg/kg) ETHYL BENZENE	BTEX (mg/kg) TOTAL XYLENES	PAH (mg/kg) NAPHTHALENE
BH1	05.04.2025	0.1-0.2	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
BH2	05.04.2025	0.2-0.3	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
BH3	05.04.2025	0.8-0.9	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
BH4	05.04.2025	0.4-0.5	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
BH5	05.04.2025	0.3-0.4	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
BH6	05.04.2025	1.4-1.5	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
BH7	05.04.2025	0.3-0.4	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
BH8	05.04.2025	0.8-0.9	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
BH9	05.04.2025	1.2-1.3	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
BH10	05.04.2025	0.6-0.7	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
BH11	05.04.2025	0.2-0.3	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
BH12	05.04.2025	1.0-1.1	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
BH13	05.04.2025	0.3-0.4	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
BH14	05.04.2025	0.4-0.5	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
BH15	05.04.2025	0.5-0.6	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
BH16	05.04.2025	0.7-0.8	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
BH17	05.04.2025	0.9-1.0	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
BH18	05.04.2025	0.3-0.4	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
BH19	05.04.2025	0.3-0.4	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
BH20	05.04.2025	1.4-1.5	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
BH21	05.04.2025	0.3-0.4	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
BH22	05.04.2025	0.3-0.4	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
BH23	05.04.2025	0.5-0.6	<10	<50	<0.2	<0.5	<0.5	<0.5	<1
Practical Quantitation Limits (PQL)			10	50	0.2	0.5	0.5	0.5	1
NATIONAL ENVIRONMENT PROTECTION MEASURE (2013)									
Health Screening Levels (HSL) - Table 1A (3)									
HSL A & HSL B: Low-high density residential									
Source depth - 0m to <1m			50	280	0.7	480	NL	110	5
Source depth - 1m to <2m			90	NL	1	NL	NL	310	NL
Source depth - 2m to <4m			150	NL	2	NL	NL	NL	NL
Source depth - 4m +			290	NL	3	NL	NL	NL	NL
HSL C: recreational / open space									
Source depth - 0m to <1m			NL	NL	NL	NL	NL	NL	NL
Source depth - 1m to <2m			NL	NL	NL	NL	NL	NL	NL
Source depth - 2m to <4m			NL	NL	NL	NL	NL	NL	NL
Source depth - 4m +			NL	NL	NL	NL	NL	NL	NL
HSL D: Commercial / Industrial									
Source depth - 0m to <1m			310	NL	4	NL	NL	NL	NL
Source depth - 1m to <2m			480	NL	6	NL	NL	NL	NL
Source depth - 2m to <4m			NL	NL	9	NL	NL	NL	NL
Source depth - 4m +			NL	NL	20	NL	NL	NL	NL

Notes
a: To obtain F1 subtract the sum of BTEX concentrations from the C_6-C_{10} fraction.
b: To obtain F2 subtract naphthalene from the >C_{10}-C_{16} fraction.
NL: Not Limiting

TABLE D
TOTAL RECOVERABLE HYDROCARBONS (TRH), BTEX AND BENZO(a)PYRENE TEST RESULTS
ESLs FOR COARSE GRAINED SOIL TEXTURE

Analyte / Sample Location	Sample Date	Depth (m)	TRH (mg/kg) F1 (C_6-C_{10}) [a]	TRH (mg/kg) F2 (>C_{10}-C_{16}) [b]	TRH (mg/kg) F3 (C_{16}-C_{34})	TRH (mg/kg) F4 (C_{34}-C_{40})	BTEX (mg/kg) BENZENE	BTEX (mg/kg) TOLUENE	BTEX (mg/kg) ETHYL BENZENE	BTEX (mg/kg) TOTAL XYLENES	PAH (mg/kg) BENZO(a)PYRENE
BH1	05.04.2025	0.1-0.2	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
BH2	05.04.2025	0.2-0.3	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
BH3	05.04.2025	0.8-0.9	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
BH4	05.04.2025	0.4-0.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
BH5	05.04.2025	0.3-0.4	<10	<50	100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
BH6	05.04.2025	1.4-1.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
BH7	05.04.2025	0.3-0.4	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
BH8	05.04.2025	0.8-0.9	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
BH9	05.04.2025	1.2-1.3	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
BH10	05.04.2025	0.6-0.7	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
BH11	05.04.2025	0.2-0.3	<10	<50	180	100	<0.2	<0.5	<0.5	<0.5	<0.5
BH12	05.04.2025	1.0-1.1	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
BH13	05.04.2025	0.3-0.4	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
BH14	05.04.2025	0.4-0.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
BH15	05.04.2025	0.5-0.6	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
BH16	05.04.2025	0.7-0.8	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
BH17	05.04.2025	0.9-1.0	<10	<50	120	<100	<0.2	<0.5	<0.5	<0.5	<0.5
BH18	05.04.2025	0.3-0.4	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
BH19	05.04.2025	0.3-0.4	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
BH20	05.04.2025	1.4-1.5	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
BH21	05.04.2025	0.3-0.4	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
BH22	05.04.2025	0.3-0.4	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
BH23	05.04.2025	0.5-0.6	<10	<50	<100	<100	<0.2	<0.5	<0.5	<0.5	<0.5
Practical Quantitation Limits (PQL)			10	50	100	100	0.2	0.5	0.5	5	0.5
NATIONAL ENVIRONMENT PROTECTION MEASURE (2013)											
Ecological Screening Levels (ESL) - Table 1B (6)											
Areas of ecological significance			125*	25*	-	-	10	10	1.5	10	0.7
Urban residential and public open space			180*	120*	300	2800	50	85	70	105	0.7
Commercial and industrial			215*	170*	1700	3300	75	135	165	180	0.7

Notes
a: To obtain F1 subtract the sum of BTEX concentrations from the C_6-C_{10} fraction.
b: To obtain F2 subtract naphthalene from the >C_{10}-C_{16} fraction.
*: ESLs are of low reliability except where indicated by * which indicates that the ESL is of moderate reliability.
"-": "-" indicates that insufficient data was available to derive a value.

TABLE E
TOTAL RECOVERABLE HYDROCARBONS (TRH) TEST RESULTS
MANAGEMENT LIMITS FOR FINE GRAINED SOIL TEXTURE

Analyte / Sample Location	Date Sampled	Depth (m)	TRH (mg/kg) F1 (C_6-C_{10}) [a]	F2 (>C_{10}-C_{16}) [a]	F3 (C_{16}-C_{34})	F4 (C_{34}-C_{40})
BH1	05.04.2025	0.1-0.2	<10	<50	<100	<100
BH2	05.04.2025	0.2-0.3	<10	<50	<100	<100
BH3	05.04.2025	0.8-0.9	<10	<50	<100	<100
BH4	05.04.2025	0.4-0.5	<10	<50	<100	<100
BH5	05.04.2025	0.3-0.4	<10	<50	100	<100
BH6	05.04.2025	1.4-1.5	<10	<50	<100	<100
BH7	05.04.2025	0.3-0.4	<10	<50	<100	<100
BH8	05.04.2025	0.8-0.9	<10	<50	<100	<100
BH9	05.04.2025	1.2-1.3	<10	<50	<100	<100
BH10	05.04.2025	0.6-0.7	<10	<50	<100	<100
BH11	05.04.2025	0.2-0.3	<10	<50	180	100
BH12	05.04.2025	1.0-1.1	<10	<50	<100	<100
BH13	05.04.2025	0.3-0.4	<10	<50	<100	<100
BH14	05.04.2025	0.4-0.5	<10	<50	<100	<100
BH15	05.04.2025	0.5-0.6	<10	<50	<100	<100
BH16	05.04.2025	0.7-0.8	<10	<50	<100	<100
BH17	05.04.2025	0.9-1.0	<10	<50	120	<100
BH18	05.04.2025	0.3-0.4	<10	<50	<100	<100
BH19	05.04.2025	0.3-0.4	<10	<50	<100	<100
BH20	05.04.2025	1.4-1.5	<10	<50	<100	<100
BH21	05.04.2025	0.3-0.4	<10	<50	<100	<100
BH22	05.04.2025	0.3-0.4	<10	<50	<100	<100
BH23	05.04.2025	0.5-0.6	<10	<50	<100	<100
Practical Quantitation Limits (PQL)			10	50	100	100
NATIONAL ENVIRONMENT PROTECTION MEASURE (2013)						
Management Limits - Table 1B (7)						
Residential parkland and public open space			700	1000	2500	10,000
Commercial and industrial			700	1000	3500	10,000

Notes a: Separate management limits for BTEX and naphthalene are not available hence these should not be subtracted from the relevant fractions to obtain F1 and F2.

b: Management limits are applied after consideration of relevant ESLs and HSLs.

TABLE F

POLYCYCLIC AROMATIC HYDROCARBONS (PAH), ORGANOCHLORINE PESTICIDES (OCP), POLYCHLORINATED BIPHENYLS (PCB) AND PHENOLS TEST RESULTS FOR HILs, EILs & ESLs

Analyte / Sample Location	Sample Date	Depth (m)	PAH (mg/kg)				Organochlorine Pesticides (mg/kg)									Phenols (mg/kg)	
			Carcinogenic PAHs (as BaP TEQ) [e]	TOTAL PAHs [f]	BENZO(a)PYRENE	NAPHTHALENE	DDT + DDE + DDD	ALDRIN & DIELDRIN	CHLORDANE	ENDOSULFAN	ENDRIN	HEPTACHLOR	HCB	METHOXYCHLOR	PCB [i]	PHENOL	PENTACHLOROPHENOL
BH1	05.04.2025	0.1-0.2	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
BH2	05.04.2025	0.2-0.3	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
BH3	05.04.2025	0.8-0.9	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
BH4	05.04.2025	0.4-0.5	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
BH5	05.04.2025	0.3-0.4	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
BH6	05.04.2025	1.4-1.5	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
BH7	05.04.2025	0.3-0.4	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
BH8	05.04.2025	0.8-0.9	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
BH9	05.04.2025	1.2-1.3	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
BH10	05.04.2025	0.6-0.7	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
BH11	05.04.2025	0.2-0.3	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
BH12	05.04.2025	1.0-1.1	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
BH13	05.04.2025	0.3-0.4	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
BH14	05.04.2025	0.4-0.5	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
BH15	05.04.2025	0.5-0.6	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
BH16	05.04.2025	0.7-0.8	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
BH17	05.04.2025	0.9-1.0	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
BH18	05.04.2025	0.3-0.4	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
BH19	05.04.2025	0.3-0.4	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
BH20	05.04.2025	1.4-1.5	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
BH21	05.04.2025	0.3-0.4	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
BH22	05.04.2025	0.3-0.4	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
BH23	05.04.2025	0.5-0.6	0.6	<0.5	<0.5	<0.5	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.1	<0.5	<2
Practical Quantitation Limits (PQL)			0.5	0.5	0.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.1	0.5	2
NATIONAL ENVIRONMENT PROTECTION MEASURE (2013)																	
Health Investigation Levels (HIL) - Table 1A (1)																	
HIL A [a]			3	300			240	6	50	270	10	6	10	300	1	3000	100
HIL B [b]			4	400			600	10	90	400	20	10	15	500	1	45,000	130
HIL C [c]			3	300			400	10	70	340	20	10	10	400	1	40,000	120
HIL D [d]			40	4000			3600	45	530	2000	100	50	80	2500	7	240,000	660
Ecological Investigation Levels (EIL) - Table 1B (5)																	
Areas of ecological significance						10 [g]	3 [g, k]										
Urban residential and public open space [h]						170 [g]	180 [g, k]										
Commercial and industrial						370 [g]	640 [g, k]										
Ecological Screening Levels (ESL) - Table 1B (6)																	
Areas of ecological significance					0.7 [i]												
Urban residential and public open space					0.7 [i]												
Commercial and industrial					0.7 [i]												

Notes

a: Residential with garden/accessible soil (home grown poduce <10% fruit and vegetable intake (no poultry), also includes childcare centres, preschools and primary schools.

b: Residential with minimal opportunities for soil access; includes dwellings with fully and permanently paved yard space such as high rise buildings and apartments.

c: Public open space such as parks, playgrounds, playing fields (e.g. ovals), secondary schools and footpaths. This does not include undeveloped public open space where the potential for exposure is lower and where a site-specific assessment may be more appropriate.

d: Commercial/industrial, includes premises such as shops, offices, factories and industrial sites

e: Carcinogenic PAHs: HIL is based on the 8 carcinogenic PAHs and their TEFs (potency relative to B(a)P) adopted by CCME 2008 (refer Schedule B7). The B(a)P TEQ is calculated by multiplying the concentration of each carcinogenic PAH in the sample by its B(a)P TEF, given below, and summing these products.

PAH species	TEF	PAH species	TEF
Benzo(a)anthracen	0.1	Benzo(g,h,i)perylene	0.01
Benzo(a)pyrene	1	Chrysene	0.01
Benzo(b+j)fluoranthe	0.1	Dibenz(a,h)anthracene	1
Benzo(k)fluoranthe	0.1	Indeno(1,2,3-c,d)pyrene	0.1

Where the B(a)P occurs in bitumen fragments it is relatively immobile and does not represent a significant health risk.

f: Total PAHs: HIL is based on the sum of the 16 PAHs most commonly reported for contaminated sites (WHO 1998). The application of the total PAH HIL should consider the presence of carcinogenic PAHs and naphthalene (the most volatile PAH). Carcinogenic PAHs reported in the total PAHs should meet the B(a)P TEQ HIL. Naphthalene reported in the total PAHs should meet

g: Insufficient data was available to calculate aged values for DDT and naphthalene, consequently the values for fresh contamination should be used.

h: Urban residential / public open space is broadly equivalent to the HIL-A, HIL-B and HIL-C land use scenarios in Table 1A(1) Footnote 1 and as described in Schedule B7.

i: For coarse and fine grained texture soils.

j: PCBs: HIL relates to non-dioxin-like PCBs only. Where a PCB source is known, or suspected, to be present at a site, a site-specific assessment of exposure to all PCBs (including dioxin-like PCBs) should be undertaken.

k: For DDT only.

TABLE G
ASBESTOS TEST RESULTS

Analyte / Sample Location	Sample Date	Depth (m)	Field Observations*	Laboratory Results Asbestos Type Present / Absent	Laboratory Results Asbestos %w/w
BH1	05.04.2025	0.1-0.2	No visible ACM fragments observed	No Asbestos detected	<0.001%
BH2	05.04.2025	0.2-0.3	No visible ACM fragments observed	No Asbestos detected	<0.001%
BH3	05.04.2025	0.8-0.9	No visible ACM fragments observed	No Asbestos detected	<0.001%
BH4	05.04.2025	0.4-0.5	No visible ACM fragments observed	No Asbestos detected	<0.001%
BH5	05.04.2025	0.3-0.4	No visible ACM fragments observed	No Asbestos detected	<0.001%
BH6	05.04.2025	1.4-1.5	No visible ACM fragments observed	No Asbestos detected	<0.001%
BH7	05.04.2025	0.3-0.4	No visible ACM fragments observed	No Asbestos detected	<0.001%
BH8	05.04.2025	0.8-0.9	No visible ACM fragments observed	No Asbestos detected	<0.001%
BH9	05.04.2025	1.2-1.3	No visible ACM fragments observed	No Asbestos detected	<0.001%
BH10	05.04.2025	0.6-0.7	No visible ACM fragments observed	No Asbestos detected	<0.001%
BH11	05.04.2025	0.2-0.3	No visible ACM fragments observed	No Asbestos detected	<0.001%
BH12	05.04.2025	1.0-1.1	No visible ACM fragments observed	No Asbestos detected	<0.001%
BH13	05.04.2025	0.3-0.4	No visible ACM fragments observed	No Asbestos detected	<0.001%
BH14	05.04.2025	0.4-0.5	No visible ACM fragments observed	No Asbestos detected	<0.001%
BH15	05.04.2025	0.5-0.6	No visible ACM fragments observed	No Asbestos detected	<0.001%
BH16	05.04.2025	0.7-0.8	No visible ACM fragments observed	No Asbestos detected	<0.001%
BH17	05.04.2025	0.9-1.0	No visible ACM fragments observed	No Asbestos detected	<0.001%
BH18	05.04.2025	0.3-0.4	No visible ACM fragments observed	No Asbestos detected	<0.001%
BH19	05.04.2025	0.3-0.4	No visible ACM fragments observed	No Asbestos detected	<0.001%
BH20	05.04.2025	1.4-1.5	No visible ACM fragments observed	No Asbestos detected	<0.001%
BH21	05.04.2025	0.3-0.4	No visible ACM fragments observed	No Asbestos detected	<0.001%
BH22	05.04.2025	0.3-0.4	No visible ACM fragments observed	No Asbestos detected	<0.001%
BH23	05.04.2025	0.5-0.6	No visible ACM fragments observed	No Asbestos detected	<0.001%
D1 (BH3)	05.04.2025	0.8-0.9	No visible ACM fragments observed	No Asbestos detected	<0.001%
D2 (BH18)	05.04.2025	0.3-0.4	No visible ACM fragments observed	No Asbestos detected	<0.001%

WA Guidelines for the Assessment, Remediation and Management of Asbestos - Contaminated Sites in Western Australia - May 2009 **National Environment Protection (Assessment of Site Contamination) Measure 2013 Schedule B1**	
%w/w asbestos for FA and AF	0.001%
%w/w asbestos for ACM - Residential use, childcare centres, preschools etc.	0.01%
%w/w asbestos for ACM - Residential, minimal soil access (fully sealed surfaces)	0.04%
%w/w asbestos for ACM - Parks, public open spaces, playing fields etc.	0.02%
%w/w asbestos for ACM - Commercial / Industrial	0.05%

Note:

ACM = Asbestos Containing Materials >7mm x 7mm (visible by eye)

FA = Friable and Fibrous Asbestos Materials >7mm x 7mm (visible by eye)

AF = Asbestos Fines <7mm x 7mm ACM including free fibres (visible by microscope only)

* Field Observations: All fibro-cement fragments observed are assumed to contain Asbestos until otherwise tested and recorded as such.

NT = Not Tested

*No Asbestos detected**' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.*

TABLE H
DUPLICATE SAMPLE (D1)

ANALYTE	BH3 0.8-0.9m mg/kg	DUPLICATE D1 mg/kg	RELATIVE PERCENTAGE DIFFERENCE %
HEAVY METALS			
Arsenic	8	6	0
Cadmium	<1	<1	0
Chromium	21	21	0
Copper	23	25	8
Nickel	16	17	6
Lead	25	26	4
Zinc	56	53	6
Mercury	<0.1	<0.1	0
TOTAL PETROLEUM HYDROCARBONS (TPH)			
C6 - C10	<10	<10	0
C10 - C16	<50	<50	0
C16 - C34	<100	<100	0
C34-C40	<100	<100	0
BTEX			
Benzene	<0.2	<0.2	0
Toluene	<0.5	<0.5	0
Ethyl Benzene	<0.5	<0.5	0
Total Xylenes	<0.5	<0.5	0
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)			
BENZO(a)PYRENE	<0.5	<0.5	0
Total PAH	<0.5	<0.5	0
ORGANOCHLORINE PESTICIDES (OCP)			
Heptachlor	<0.05	<0.05	0
Aldrin	<0.05	<0.05	0
Dieldrin	<0.05	<0.05	0
DDD	<0.05	<0.05	0
DDE	<0.05	<0.05	0
DDT	<0.2	<0.2	0
Chlordane (trans & cis)	<0.05	<0.05	0
POLYCHLORINATED BIPHENYLS (PCB)			
Total PCB	<0.1	<0.1	0
PHENOLS			
Total Phenols	<0.5	<0.5	0

No Asbestos detected**' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining.
Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.

TABLE H
DUPLICATE SAMPLE (D1)

ANALYTE	BH18 0.3-0.4m mg/kg	DUPLICATE D2 mg/kg	RELATIVE PERCENTAGE DIFFERENCE %
HEAVY METALS			
Arsenic	7	7	0
Cadmium	<1	<1	0
Chromium	20	18	11
Copper	18	19	5
Nickel	14	5	**95**
Lead	16	18	12
Zinc	21	17	21
Mercury	<0.1	<0.1	0
TOTAL PETROLEUM HYDROCARBONS (TPH)			
C6 - C10	<10	<10	0
C10 - C16	<50	<50	0
C16 - C34	<100	<100	0
C34-C40	<100	<100	0
BTEX			
Benzene	<0.2	<0.2	0
Toluene	<0.5	<0.5	0
Ethyl Benzene	<0.5	<0.5	0
Total Xylenes	<0.5	<0.5	0
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)			
BENZO(a)PYRENE	<0.5	<0.5	0
Total PAH	<0.5	<0.5	0
ORGANOCHLORINE PESTICIDES (OCP)			
Heptachlor	<0.05	<0.05	0
Aldrin	<0.05	<0.05	0
Dieldrin	<0.05	<0.05	0
DDD	<0.05	<0.05	0
DDE	<0.05	<0.05	0
DDT	<0.2	<0.2	0
Chlordane (trans & cis)	<0.05	<0.05	0
POLYCHLORINATED BIPHENYLS (PCB)			
Total PCB	<0.1	<0.1	0
PHENOLS			
Total Phenols	<0.5	<0.5	0

No Asbestos detected**' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining.
Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.

TABLE K

RINSATE SAMPLE

ANALYTE	RINSATE R1 (mg/L) 05.04.2025	Practical Quantitation Limits (PQL)
HEAVY METALS		
Arsenic	<0.001	0.001
Cadmium	<0.0001	0.0001
Chromium	<0.001	0.001
Copper	<0.001	0.001
Nickel	<0.001	0.001
Lead	<0.001	0.001
Zinc	<0.005	0.005
Mercury	<0.0001	0.0001

APPENDIX G: LABORATORY CERTIFICATES

ECON Environmental Pty Ltd | ABN 25 641 106 783 | PO Box 85 Oatlands NSW 2117
T: 1800 00 ECON | **E:** info@econenvironmental.com.au | **W:** www.econenvironmental.com.au

CERTIFICATE OF ANALYSIS

Work Order	: **ES2509920**	Page	: 1 of 36
Client	: **ECON Environmental Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: Con Kariotoglou	Contact	: Customer Services ES
Address	: 1 St Aidans Avenue Oatlands 2117	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: PYMBLE	Date Samples Received	: 07-Apr-2025 09:00
Order number	: 25-1971	Date Analysis Commenced	: 08-Apr-2025
C-O-C number	: ----	Issue Date	: 14-Apr-2025 15:33
Sampler	: Con Kariotoglou		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 26		
No. of samples analysed	: 26		

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

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

This Certificate of Analysis contains the following information:

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

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
John Williams	Lab Technician	Newcastle - Asbestos, Mayfield West, NSW

General Comments

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

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

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

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

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

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

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

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.
- EP068; Positive result has been confirmed by re-extraction and re-analysis.
- EP066: Positive results have been confirmed by re-extraction and re-analysis.
- EA200N: Asbestos weights and percentages are not covered under the Scope of NATA Accreditation.
  Weights of Asbestos are based on extracted bulk asbestos, fibre bundles, and/or ACM and do not include respirable fibres (if present)
  The Asbestos (Fines and Fibrous) weight is calculated from the extracted Fibrous Asbestos and Asbestos Fines as an equivalent weight of 100% Asbestos
  Percentages for Asbestos content in ACM are based on the 2013 NEPM default values.
  All calculations of percentage Asbestos under this method are approximate and should be used as a guide only.
- EA200 'Am' Amosite (brown asbestos)
- EA200 'Cr' Crocidolite (blue asbestos)
- EA200 'Trace' - Asbestos fibres ("Free Fibres") detected by trace analysis per AS4964. The result can be interpreted that the sample contains detectable 'respirable' asbestos fibres
- EA200: Asbestos Identification Samples were analysed by Polarised Light Microscopy including dispersion staining.
- EA200 Legend
- EA200 'Ch' Chrysotile (white asbestos)
- EA200: 'UMF' Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- EA200N: ALS laboratory procedures and methods used for the identification and quantitation of asbestos are consistent with AS4964-2004 and the requirements of the 2013 NEPM for Assessment of Site Contamination
- EA200: For samples larger than 30g, the <2mm fraction may be sub-sampled prior to trace analysis as outlined in ISO23909:2008(E) Sect 6.3.2-2
- EA200: 'Yes' - Asbestos detected by polarised light microscopy including dispersion staining.

- EA200: 'No*' - No asbestos found, at the reporting limit of 0.1g/kg, by polarised light microscopy including dispersion staining. Asbestos material was detected and positively identified at concentrations estimated to be below 0.1g/kg.
- EA200: 'No' - No asbestos found at the reporting limit 0.1g/kg, by polarised light microscopy including dispersion staining.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH1 0.1-0.2	BH2 0.2_0.3	BH3 0.8_0.9	BH4 0.4_0.5	BH5 0.3_0.4
			Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit	ES2509920-001	ES2509920-002	ES2509920-003	ES2509920-004	ES2509920-005
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	15.7	15.4	17.2	17.1	13.8
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos Type	1332-21-4	-	--	-	-	-	-	-
Asbestos (Trace)	1332-21-4	-	-	No	No	No	No	No
Sample weight (dry)	----	0.01	g	516	578	528	576	647
Synthetic Mineral Fibre	----	-	--	No	No	No	No	No
Organic Fibre	----	-	--	No	No	No	No	No
APPROVED IDENTIFIER:	----	-	--	J. WILLIAMS	J. WILLIAMS	J. WILLIAMS	J. WILLIAMS	J. WILLIAMS
EA200N: Asbestos Quantification (non-NATA)								
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
ø Weight Used for % Calculation	----	0.0001	kg	0.516	0.578	0.528	0.576	0.647
ø Fibrous Asbestos >7mm	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	7	<5	8	7	<5
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	13	18	21	13	8
Copper	7440-50-8	5	mg/kg	22	33	23	38	18
Lead	7439-92-1	5	mg/kg	30	18	25	33	36
Nickel	7440-02-0	2	mg/kg	4	15	16	5	4
Zinc	7440-66-6	5	mg/kg	20	72	56	52	53
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH1 0.1-0.2	BH2 0.2_0.3	BH3 0.8_0.9	BH4 0.4_0.5	BH5 0.3_0.4
				Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		ES2509920-001	ES2509920-002	ES2509920-003	ES2509920-004	ES2509920-005
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH1 0.1-0.2	BH2 0.2_0.3	BH3 0.8_0.9	BH4 0.4_0.5	BH5 0.3_0.4
				Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		ES2509920-001	ES2509920-002	ES2509920-003	ES2509920-004	ES2509920-005
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH1 0.1-0.2	BH2 0.2_0.3	BH3 0.8_0.9	BH4 0.4_0.5	BH5 0.3_0.4
				Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		ES2509920-001	ES2509920-002	ES2509920-003	ES2509920-004	ES2509920-005
					Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued									
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg		<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH1 0.1-0.2	BH2 0.2_0.3	BH3 0.8_0.9	BH4 0.4_0.5	BH5 0.3_0.4
				Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		ES2509920-001	ES2509920-002	ES2509920-003	ES2509920-004	ES2509920-005
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	**100**
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	**100**
^ >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	%		**94.2**	**82.5**	**101**	**87.1**	**109**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**105**	**94.3**	**117**	**96.3**	**127**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH1 0.1-0.2	BH2 0.2_0.3	BH3 0.8_0.9	BH4 0.4_0.5	BH5 0.3_0.4
				Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		ES2509920-001	ES2509920-002	ES2509920-003	ES2509920-004	ES2509920-005
					Result	Result	Result	Result	Result
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		123	110	132	96.3	140
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		97.4	90.8	97.3	87.4	98.8
2-Chlorophenol-D4	93951-73-6	0.5	%		95.6	92.6	93.6	88.0	93.6
2.4.6-Tribromophenol	118-79-6	0.5	%		82.0	76.9	82.0	74.7	79.0
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		101	99.0	99.9	95.9	101
Anthracene-d10	1719-06-8	0.5	%		102	99.1	101	96.4	102
4-Terphenyl-d14	1718-51-0	0.5	%		93.6	90.0	92.8	87.6	92.6
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		79.7	103	86.1	82.7	85.1
Toluene-D8	2037-26-5	0.2	%		100	83.5	112	95.1	77.4
4-Bromofluorobenzene	460-00-4	0.2	%		111	116	117	111	114

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH6 1.4_1.5	BH7 0.3_0.4	BH8 0.8_0.9	BH9 1.2_1.3	BH10 0.6_0.7
			Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit	ES2509920-006	ES2509920-007	ES2509920-008	ES2509920-009	ES2509920-010
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	6.5	15.0	9.1	17.6	10.0
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos Type	1332-21-4	-	--	-	-	-	-	-
Asbestos (Trace)	1332-21-4	-	-	No	No	No	No	No
Sample weight (dry)	----	0.01	g	556	626	665	612	672
Synthetic Mineral Fibre	----	-	--	No	No	No	No	No
Organic Fibre	----	-	--	No	No	No	No	No
APPROVED IDENTIFIER:	----	-	--	J. WILLIAMS	J. WILLIAMS	J. WILLIAMS	J. WILLIAMS	J. WILLIAMS
EA200N: Asbestos Quantification (non-NATA)								
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
ø Weight Used for % Calculation	----	0.0001	kg	0.556	0.626	0.665	0.612	0.672
ø Fibrous Asbestos >7mm	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	7	<5	<5	6
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	21	13	7	10	24
Copper	7440-50-8	5	mg/kg	22	20	32	33	24
Lead	7439-92-1	5	mg/kg	12	31	17	31	19
Nickel	7440-02-0	2	mg/kg	4	6	3	5	22
Zinc	7440-66-6	5	mg/kg	30	72	40	39	39
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	0.4	0.2
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH6 1.4_1.5	BH7 0.3_0.4	BH8 0.8_0.9	BH9 1.2_1.3	BH10 0.6_0.7
				Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		ES2509920-006	ES2509920-007	ES2509920-008	ES2509920-009	ES2509920-010
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ **Total Chlordane (sum)**	----	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	**0.07**
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	**0.07**
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH6 1.4_1.5	BH7 0.3_0.4	BH8 0.8_0.9	BH9 1.2_1.3	BH10 0.6_0.7
				Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		ES2509920-006	ES2509920-007	ES2509920-008	ES2509920-009	ES2509920-010
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH6 1.4_1.5	BH7 0.3_0.4	BH8 0.8_0.9	BH9 1.2_1.3	BH10 0.6_0.7
				Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		ES2509920-006	ES2509920-007	ES2509920-008	ES2509920-009	ES2509920-010
					Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued									
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg		<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH6 1.4_1.5	BH7 0.3_0.4	BH8 0.8_0.9	BH9 1.2_1.3	BH10 0.6_0.7
				Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		ES2509920-006	ES2509920-007	ES2509920-008	ES2509920-009	ES2509920-010
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	<10	<10	<10	<10
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	<10	<10	<10	<10
>C10 - C16 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
>C16 - C34 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	<50	<50	<50	<50
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	<50	<50	<50	<50
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	108-88-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of BTEX	----	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ Total Xylenes	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	91-20-3	1	mg/kg		<1	<1	<1	<1	<1
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		**108**	**84.9**	**66.7**	**106**	**107**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**118**	**92.6**	**67.1**	**113**	**93.4**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH6 1.4_1.5	BH7 0.3_0.4	BH8 0.8_0.9	BH9 1.2_1.3	BH10 0.6_0.7
				Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		ES2509920-006	ES2509920-007	ES2509920-008	ES2509920-009	ES2509920-010
					Result	Result	Result	Result	Result
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		121	97.4	77.0	122	82.7
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		95.2	94.8	95.0	93.6	97.0
2-Chlorophenol-D4	93951-73-6	0.5	%		93.7	91.5	91.2	92.6	96.5
2.4.6-Tribromophenol	118-79-6	0.5	%		80.7	77.4	76.3	75.2	75.5
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		101	99.0	95.8	99.0	99.3
Anthracene-d10	1719-06-8	0.5	%		102	99.5	96.4	100	111
4-Terphenyl-d14	1718-51-0	0.5	%		93.6	89.9	87.4	92.1	94.0
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		85.7	92.2	88.4	122	84.6
Toluene-D8	2037-26-5	0.2	%		105	100.0	90.9	94.6	79.3
4-Bromofluorobenzene	460-00-4	0.2	%		115	111	104	122	91.1

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH11 0.2_0.3	BH12 1.0_1.1	BH13 0.2_0.3	BH14 0.4_0.5	BH15 0.5_0.6
			Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit	ES2509920-011	ES2509920-012	ES2509920-013	ES2509920-014	ES2509920-015
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	27.8	14.3	21.2	17.2	21.4
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos Type	1332-21-4	-	--	-	-	-	-	-
Asbestos (Trace)	1332-21-4	-	-	No	No	No	No	No
Sample weight (dry)	----	0.01	g	358	556	460	636	746
Synthetic Mineral Fibre	----	-	--	No	No	No	No	No
Organic Fibre	----	-	--	No	No	No	No	No
APPROVED IDENTIFIER:	----	-	--	J. WILLIAMS	J. WILLIAMS	J. WILLIAMS	J. WILLIAMS	J. WILLIAMS
EA200N: Asbestos Quantification (non-NATA)								
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
ø Weight Used for % Calculation	----	0.0001	kg	0.358	0.556	0.460	0.636	0.746
ø Fibrous Asbestos >7mm	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	6	11	10	16
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	21	55	16	17	4
Copper	7440-50-8	5	mg/kg	31	29	30	42	39
Lead	7439-92-1	5	mg/kg	19	16	74	66	9
Nickel	7440-02-0	2	mg/kg	17	52	5	10	3
Zinc	7440-66-6	5	mg/kg	64	55	47	28	29
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH11 0.2_0.3	BH12 1.0_1.1	BH13 0.2_0.3	BH14 0.4_0.5	BH15 0.5_0.6
				Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		ES2509920-011	ES2509920-012	ES2509920-013	ES2509920-014	ES2509920-015
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ **Total Chlordane (sum)**	----	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH11 0.2_0.3	BH12 1.0_1.1	BH13 0.2_0.3	BH14 0.4_0.5	BH15 0.5_0.6
				Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		ES2509920-011	ES2509920-012	ES2509920-013	ES2509920-014	ES2509920-015
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH11 0.2_0.3	BH12 1.0_1.1	BH13 0.2_0.3	BH14 0.4_0.5	BH15 0.5_0.6
				Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		ES2509920-011	ES2509920-012	ES2509920-013	ES2509920-014	ES2509920-015
					Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued									
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg		<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH11 0.2_0.3	BH12 1.0_1.1	BH13 0.2_0.3	BH14 0.4_0.5	BH15 0.5_0.6
				Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		ES2509920-011	ES2509920-012	ES2509920-013	ES2509920-014	ES2509920-015
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		**100**	<100	<100	<100	<100
C29 - C36 Fraction	----	100	mg/kg		**130**	<100	<100	<100	<100
^ C10 - C36 Fraction (sum)	----	50	mg/kg		**230**	<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		**180**	<100	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		**100**	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		**280**	<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	%		**80.6**	**95.0**	**97.6**	**116**	**102**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**76.5**	**95.1**	**98.2**	**112**	**99.1**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH11 0.2_0.3	BH12 1.0_1.1	BH13 0.2_0.3	BH14 0.4_0.5	BH15 0.5_0.6
				Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		ES2509920-011	ES2509920-012	ES2509920-013	ES2509920-014	ES2509920-015
					Result	Result	Result	Result	Result
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		92.6	100	97.9	115	102
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		95.2	83.1	95.1	88.3	93.1
2-Chlorophenol-D4	93951-73-6	0.5	%		93.6	80.5	92.5	88.1	90.2
2.4.6-Tribromophenol	118-79-6	0.5	%		77.5	65.0	76.4	70.6	67.5
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		96.1	81.4	96.1	96.6	95.8
Anthracene-d10	1719-06-8	0.5	%		97.0	83.0	96.8	97.8	97.1
4-Terphenyl-d14	1718-51-0	0.5	%		88.5	88.3	87.7	89.6	89.2
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		76.3	81.8	81.8	90.9	86.6
Toluene-D8	2037-26-5	0.2	%		84.5	76.5	73.0	102	124
4-Bromofluorobenzene	460-00-4	0.2	%		74.4	104	91.5	113	112

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH16 0.7_0.8	BH17 0.9_1.0	BH18 0.3_0.4	BH19 0.3_0.4	BH20 1.4_1.5
			Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit	ES2509920-016	ES2509920-017	ES2509920-018	ES2509920-019	ES2509920-020
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	17.2	47.6	13.6	14.9	18.3
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos Type	1332-21-4	-	--	-	-	-	-	-
Asbestos (Trace)	1332-21-4	-	-	No	No	No	No	No
Sample weight (dry)	----	0.01	g	645	452	484	804	664
Synthetic Mineral Fibre	----	-	--	No	No	No	No	No
Organic Fibre	----	-	--	No	No	No	No	No
APPROVED IDENTIFIER:	----	-	--	J. WILLIAMS	J. WILLIAMS	J. WILLIAMS	J. WILLIAMS	J. WILLIAMS
EA200N: Asbestos Quantification (non-NATA)								
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
ø Weight Used for % Calculation	----	0.0001	kg	0.645	0.452	0.484	0.804	0.664
ø Fibrous Asbestos >7mm	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	15	6	7	<5	10
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	16	17	20	61	15
Copper	7440-50-8	5	mg/kg	41	33	18	48	46
Lead	7439-92-1	5	mg/kg	35	33	16	7	81
Nickel	7440-02-0	2	mg/kg	4	13	14	56	12
Zinc	7440-66-6	5	mg/kg	119	84	21	41	69
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	2.4	<0.1	<0.1	<0.1	0.4
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH16 0.7_0.8	BH17 0.9_1.0	BH18 0.3_0.4	BH19 0.3_0.4	BH20 1.4_1.5
				Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		ES2509920-016	ES2509920-017	ES2509920-018	ES2509920-019	ES2509920-020
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ **Total Chlordane (sum)**	----	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH16 0.7_0.8	BH17 0.9_1.0	BH18 0.3_0.4	BH19 0.3_0.4	BH20 1.4_1.5
				Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		ES2509920-016	ES2509920-017	ES2509920-018	ES2509920-019	ES2509920-020
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH16 0.7_0.8	BH17 0.9_1.0	BH18 0.3_0.4	BH19 0.3_0.4	BH20 1.4_1.5
				Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		ES2509920-016	ES2509920-017	ES2509920-018	ES2509920-019	ES2509920-020
					Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued									
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg		<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH16 0.7_0.8	BH17 0.9_1.0	BH18 0.3_0.4	BH19 0.3_0.4	BH20 1.4_1.5
				Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		ES2509920-016	ES2509920-017	ES2509920-018	ES2509920-019	ES2509920-020
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<100	<100	<100	<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	**120**	<100	<100	<100
>C34 - C40 Fraction	----	100	mg/kg		<100	<100	<100	<100	<100
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	**120**	<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	%		**129**	**95.7**	**94.0**	**95.4**	**93.4**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**130**	**84.0**	**88.0**	**87.8**	**82.5**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH16 0.7_0.8	BH17 0.9_1.0	BH18 0.3_0.4	BH19 0.3_0.4	BH20 1.4_1.5
				Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		ES2509920-016	ES2509920-017	ES2509920-018	ES2509920-019	ES2509920-020
					Result	Result	Result	Result	Result
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		138	100	91.2	88.9	89.6
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		95.4	96.9	93.4	94.5	90.4
2-Chlorophenol-D4	93951-73-6	0.5	%		90.5	92.0	92.4	91.7	89.1
2.4.6-Tribromophenol	118-79-6	0.5	%		80.7	80.4	75.0	74.2	70.8
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		96.7	98.4	97.7	99.1	95.0
Anthracene-d10	1719-06-8	0.5	%		95.7	98.1	97.7	99.2	96.0
4-Terphenyl-d14	1718-51-0	0.5	%		88.9	89.5	88.7	90.5	86.5
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		112	69.9	76.8	92.0	89.6
Toluene-D8	2037-26-5	0.2	%		67.7	70.4	105	105	93.8
4-Bromofluorobenzene	460-00-4	0.2	%		114	118	111	116	107

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	BH21 0.3_0.4	BH22 0.3_0.4	BH23 0.5_0.6	D1	D2
			Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit	ES2509920-021	ES2509920-022	ES2509920-023	ES2509920-024	ES2509920-025
				Result	Result	Result	Result	Result
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	4.8	11.9	17.6	17.6	17.7
EA200: AS 4964 - 2004 Identification of Asbestos in Soils								
Asbestos Detected	1332-21-4	0.1	g/kg	No	No	No	No	No
Asbestos Type	1332-21-4	-	--	-	-	-	-	-
Asbestos (Trace)	1332-21-4	-	-	No	No	No	No	No
Sample weight (dry)	----	0.01	g	858	510	634	601	548
Synthetic Mineral Fibre	----	-	--	No	No	No	No	No
Organic Fibre	----	-	--	No	No	No	No	No
APPROVED IDENTIFIER:	----	-	--	J. WILLIAMS	J. WILLIAMS	J. WILLIAMS	J. WILLIAMS	J. WILLIAMS
EA200N: Asbestos Quantification (non-NATA)								
ø Asbestos (Fines and Fibrous <7mm)	1332-21-4	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
ø Asbestos (Fines and Fibrous FA+AF)	----	0.001	% (w/w)	<0.001	<0.001	<0.001	<0.001	<0.001
ø Weight Used for % Calculation	----	0.0001	kg	0.858	0.510	0.634	0.601	0.548
ø Fibrous Asbestos >7mm	----	0.0004	g	<0.0004	<0.0004	<0.0004	<0.0004	<0.0004
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	5	<5	6	7
Cadmium	7440-43-9	1	mg/kg	<1	<1	<1	<1	<1
Chromium	7440-47-3	2	mg/kg	88	11	10	21	18
Copper	7440-50-8	5	mg/kg	29	27	16	25	19
Lead	7439-92-1	5	mg/kg	7	20	16	26	18
Nickel	7440-02-0	2	mg/kg	122	5	8	17	5
Zinc	7440-66-6	5	mg/kg	44	37	46	53	17
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
EP068A: Organochlorine Pesticides (OC)								

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH21 0.3_0.4	BH22 0.3_0.4	BH23 0.5_0.6	D1	D2
				Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		ES2509920-021	ES2509920-022	ES2509920-023	ES2509920-024	ES2509920-025
					Result	Result	Result	Result	Result
EP068A: Organochlorine Pesticides (OC) - Continued									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-BHC	319-85-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
delta-BHC	319-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor	76-44-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Aldrin	309-00-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ **Total Chlordane (sum)**	----	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Dieldrin	60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDE	72-55-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin	72-20-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ **Endosulfan (sum)**	115-29-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDD	72-54-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Endosulfan sulfate	1031-07-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
4.4`-DDT	50-29-3	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Endrin ketone	53494-70-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Methoxychlor	72-43-5	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
^ **Sum of Aldrin + Dieldrin**	309-00-2/60-57-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
^ **Sum of DDD + DDE + DDT**	72-54-8/72-55-9/50-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP068B: Organophosphorus Pesticides (OP)									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH21 0.3_0.4	BH22 0.3_0.4	BH23 0.5_0.6	D1	D2
				Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		ES2509920-021	ES2509920-022	ES2509920-023	ES2509920-024	ES2509920-025
					Result	Result	Result	Result	Result
EP068B: Organophosphorus Pesticides (OP) - Continued									
Dichlorvos	62-73-7	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Demeton-S-methyl	919-86-8	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Monocrotophos	6923-22-4	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	60-51-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Diazinon	333-41-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion-methyl	298-00-0	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	121-75-5	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenthion	55-38-9	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorpyrifos	2921-88-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Parathion	56-38-2	0.2	mg/kg		<0.2	<0.2	<0.2	<0.2	<0.2
Pirimphos-ethyl	23505-41-1	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Chlorfenvinphos	470-90-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Bromophos-ethyl	4824-78-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Fenamiphos	22224-92-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Prothiofos	34643-46-4	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Ethion	563-12-2	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Carbophenothion	786-19-6	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
Azinphos Methyl	86-50-0	0.05	mg/kg		<0.05	<0.05	<0.05	<0.05	<0.05
EP075(SIM)A: Phenolic Compounds									
Phenol	108-95-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Chlorophenol	95-57-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2-Methylphenol	95-48-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
3- & 4-Methylphenol	1319-77-3	1	mg/kg		<1	<1	<1	<1	<1
2-Nitrophenol	88-75-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dimethylphenol	105-67-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4-Dichlorophenol	120-83-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH21 0.3_0.4	BH22 0.3_0.4	BH23 0.5_0.6	D1	D2
				Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		ES2509920-021	ES2509920-022	ES2509920-023	ES2509920-024	ES2509920-025
					Result	Result	Result	Result	Result
EP075(SIM)A: Phenolic Compounds - Continued									
2.6-Dichlorophenol	87-65-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pentachlorophenol	87-86-5	2	mg/kg		<2	<2	<2	<2	<2
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthylene	208-96-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Acenaphthene	83-32-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluorene	86-73-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Phenanthrene	85-01-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Anthracene	120-12-7	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Fluoranthene	206-44-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Pyrene	129-00-0	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Chrysene	218-01-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	<0.5	<0.5	<0.5	<0.5
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		**0.6**	**0.6**	**0.6**	**0.6**	**0.6**
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		**1.2**	**1.2**	**1.2**	**1.2**	**1.2**
EP080/071: Total Petroleum Hydrocarbons									

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH21 0.3_0.4	BH22 0.3_0.4	BH23 0.5_0.6	D1	D2
				Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		ES2509920-021	ES2509920-022	ES2509920-023	ES2509920-024	ES2509920-025
					Result	Result	Result	Result	Result
EP080/071: Total Petroleum Hydrocarbons - Continued									
C6 - C9 Fraction	----	10	mg/kg		<10	<10	<10	<10	<10
C10 - C14 Fraction	----	50	mg/kg		<50	<50	<50	<50	<50
C15 - C28 Fraction	----	100	mg/kg		<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	%		**95.6**	**121**	**122**	**118**	**110**
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		**90.9**	**105**	**99.7**	**107**	**93.3**

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	BH21 0.3_0.4	BH22 0.3_0.4	BH23 0.5_0.6	D1	D2
				Sampling date / time	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00	05-Apr-2025 00:00
Compound	CAS Number	LOR	Unit		ES2509920-021	ES2509920-022	ES2509920-023	ES2509920-024	ES2509920-025
					Result	Result	Result	Result	Result
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		71.4	78.1	79.0	87.6	71.5
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		93.2	91.5	93.1	90.4	93.7
2-Chlorophenol-D4	93951-73-6	0.5	%		99.9	96.8	99.5	97.2	97.9
2.4.6-Tribromophenol	118-79-6	0.5	%		73.4	74.3	85.6	79.0	75.6
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		113	112	112	107	112
Anthracene-d10	1719-06-8	0.5	%		106	109	103	102	108
4-Terphenyl-d14	1718-51-0	0.5	%		91.9	94.7	89.8	87.4	91.4
EP080S: TPH(V)/BTEX Surrogates									
1.2-Dichloroethane-D4	17060-07-0	0.2	%		95.7	109	111	98.5	108
Toluene-D8	2037-26-5	0.2	%		94.9	99.9	100	87.9	99.2
4-Bromofluorobenzene	460-00-4	0.2	%		102	99.2	98.9	89.0	97.4

Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Sample ID	R1	----	----	----	----
				Sampling date / time	05-Apr-2025 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2509920-026	--------	--------	--------	--------
					Result	----	----	----	----
EG020T: Total Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		<0.001	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		<0.001	----	----	----	----
Copper	7440-50-8	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		<0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		<0.005	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	*Sample ID - Sampling date / time*	*Analytical Results*
EA200: AS 4964 - 2004 Identification of Asbestos in Soils		
EA200: Description	BH1 0.1-0.2 - 05-Apr-2025 00:00	A soil sample.
EA200: Description	BH2 0.2_0.3 - 05-Apr-2025 00:00	A soil sample.
EA200: Description	BH3 0.8_0.9 - 05-Apr-2025 00:00	A soil sample.
EA200: Description	BH4 0.4_0.5 - 05-Apr-2025 00:00	A soil sample.
EA200: Description	BH5 0.3_0.4 - 05-Apr-2025 00:00	A soil sample.
EA200: Description	BH6 1.4_1.5 - 05-Apr-2025 00:00	A soil sample.
EA200: Description	BH7 0.3_0.4 - 05-Apr-2025 00:00	A soil sample.
EA200: Description	BH8 0.8_0.9 - 05-Apr-2025 00:00	A soil sample.
EA200: Description	BH9 1.2_1.3 - 05-Apr-2025 00:00	A soil sample.
EA200: Description	BH10 0.6_0.7 - 05-Apr-2025 00:00	A soil sample.
EA200: Description	BH11 0.2_0.3 - 05-Apr-2025 00:00	A soil sample.
EA200: Description	BH12 1.0_1.1 - 05-Apr-2025 00:00	A soil sample.
EA200: Description	BH13 0.2_0.3 - 05-Apr-2025 00:00	A soil sample.
EA200: Description	BH14 0.4_0.5 - 05-Apr-2025 00:00	A soil sample.
EA200: Description	BH15 0.5_0.6 - 05-Apr-2025 00:00	A soil sample.
EA200: Description	BH16 0.7_0.8 - 05-Apr-2025 00:00	A soil sample.
EA200: Description	BH17 0.9_1.0 - 05-Apr-2025 00:00	A soil sample.
EA200: Description	BH18 0.3_0.4 - 05-Apr-2025 00:00	A soil sample.
EA200: Description	BH19 0.3_0.4 - 05-Apr-2025 00:00	A soil sample.
EA200: Description	BH20 1.4_1.5 - 05-Apr-2025 00:00	A soil sample.
EA200: Description	BH21 0.3_0.4 - 05-Apr-2025 00:00	A soil sample.
EA200: Description	BH22 0.3_0.4 - 05-Apr-2025 00:00	A soil sample.
EA200: Description	BH23 0.5_0.6 - 05-Apr-2025 00:00	A soil sample.
EA200: Description	D1 - 05-Apr-2025 00:00	A soil sample.
EA200: Description	D2 - 05-Apr-2025 00:00	A soil sample.

Surrogate Control Limits

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

Inter-Laboratory Testing

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

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

(SOIL) EA200N: Asbestos Quantification (non-NATA)

QUALITY CONTROL REPORT

Work Order	: **ES2509920**	Page	: 1 of 25
Client	: **ECON Environmental Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: Con Kariotoglou	Contact	: Customer Services ES
Address	: 1 St Aidans Avenue Oatlands 2117	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +61-2-8784 8555
Project	: PYMBLE	Date Samples Received	: 07-Apr-2025
Order number	: 25-1971	Date Analysis Commenced	: 08-Apr-2025
C-O-C number	: ----	Issue Date	: 14-Apr-2025
Sampler	: Con Kariotoglou		
Site	: ----		
Quote number	: EN/222		
No. of samples received	: 26		
No. of samples analysed	: 26		

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

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

This Quality Control Report contains the following information:

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

Signatories

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

Signatories	*Position*	*Accreditation Category*
Ankit Joshi	Senior Chemist - Inorganics	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
John Williams	Lab Technician	Newcastle - Asbestos, Mayfield West, NSW

General Comments

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

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

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

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC
* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 6500677)									
ES2509920-001	BH1 0.1-0.2	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	13	19	36.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	4	8	72.6	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	7	8	17.5	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	22	38	54.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	30	40	29.5	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	20	48	80.7	No Limit
ES2509920-011	BH11 0.2_0.3	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	21	19	8.4	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	17	14	16.3	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	31	25	21.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	19	21	12.9	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	64	61	5.4	0% - 50%
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 6500680)									
ES2509920-021	BH21 0.3_0.4	EG005T: Nickel	7440-02-0	2	mg/kg	122	123	1.0	0% - 20%
ES2509920-021	BH21 0.3_0.4	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	88	98	10.1	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	29	25	13.6	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	7	<5	30.5	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 6500680) - continued									
ES2509920-021	BH21 0.3_0.4	EG005T: Zinc	7440-66-6	5	mg/kg	44	42	6.6	No Limit
ES2509962-006	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	19	20	9.1	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	21	22	0.0	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	12	12	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	28	27	4.5	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	16	15	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	52	56	7.7	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6495553)									
ES2509180-001	Anonymous	EA055: Moisture Content	----	0.1 (1.0)*	%	15.2	15.1	0.7	0% - 50%
ES2509962-003	Anonymous	EA055: Moisture Content	----	0.1 (1.0)*	%	14.5	14.6	0.0	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6500685)									
ES2509920-002	BH2 0.2_0.3	EA055: Moisture Content	----	0.1 (1.0)*	%	15.4	16.9	9.4	0% - 50%
ES2509920-010	BH10 0.6_0.7	EA055: Moisture Content	----	0.1 (1.0)*	%	10.0	13.6	30.6	0% - 50%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6500686)									
ES2509920-023	BH23 0.5_0.6	EA055: Moisture Content	----	0.1 (1.0)*	%	17.6	17.8	0.0	0% - 50%
ES2509962-008	Anonymous	EA055: Moisture Content	----	0.1 (1.0)*	%	20.0	18.6	6.9	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 6500678)									
ES2509920-001	BH1 0.1-0.2	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2509920-011	BH11 0.2_0.3	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 6500679)									
ES2509920-021	BH21 0.3_0.4	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2509962-006	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 6493293)									
ES2509920-001	BH1 0.1-0.2	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2509920-011	BH11 0.2_0.3	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	0.2	0.2	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 6493309)									
ES2509906-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2509919-005	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 6493292)									
ES2509920-001	BH1 0.1-0.2	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 6493292) - continued									
ES2509920-001	BH1 0.1-0.2	EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2509920-011	BH11 0.2_0.3	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 6493308)									
ES2509906-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 6493308) - continued									
ES2509906-001	Anonymous	EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2509919-005	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 6493308) - continued									
ES2509919-005	Anonymous	EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 6493292)									
ES2509920-001	BH1 0.1-0.2	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2509920-011	BH11 0.2_0.3	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 6493292) - continued									
ES2509920-011	BH11 0.2_0.3	EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 6493308)									
ES2509906-001	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
ES2509919-005	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 6493308) - continued									
ES2509919-005	Anonymous	EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 6493291)									
ES2509920-001	BH1 0.1-0.2	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
ES2509920-011	BH11 0.2_0.3	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
EP075(SIM)A: Phenolic Compounds (QC Lot: 6493307)									
ES2509906-001	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP075(SIM)A: Phenolic Compounds (QC Lot: 6493307) - continued									
ES2509906-001	Anonymous	EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
ES2509919-005	Anonymous	EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	<1	0.0	No Limit
		EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	<2	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 6493291)									
ES2509920-001	BH1 0.1-0.2	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 6493291) - continued									
ES2509920-001	BH1 0.1-0.2	EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES2509920-011	BH11 0.2_0.3	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 6493307)									
ES2509906-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 6493307) - continued									
ES2509906-001	Anonymous	EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
ES2509919-005	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6493282)									
ES2509920-001	BH1 0.1-0.2	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2509920-011	BH11 0.2_0.3	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6493284)									
ES2509880-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2509919-003	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6493290)									
ES2509920-001	BH1 0.1-0.2	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2509920-011	BH11 0.2_0.3	EP071: C15 - C28 Fraction	----	100	mg/kg	100	140	29.8	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	130	170	26.2	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6493306)									

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 6493306) - continued									
ES2509906-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2509919-005	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6493282)									
ES2509920-001	BH1 0.1-0.2	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2509920-011	BH11 0.2_0.3	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6493284)									
ES2509880-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2509919-003	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6493290)									
ES2509920-001	BH1 0.1-0.2	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2509920-011	BH11 0.2_0.3	EP071: >C16 - C34 Fraction	----	100	mg/kg	180	230	28.2	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	100	140	26.9	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 6493306)									
ES2509906-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
ES2509919-005	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080: BTEXN (QC Lot: 6493282)									
ES2509920-001	BH1 0.1-0.2	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES2509920-011	BH11 0.2_0.3	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EP080: BTEXN (QC Lot: 6493282) - continued									
ES2509920-011	BH11 0.2_0.3	EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
EP080: BTEXN (QC Lot: 6493284)									
ES2509880-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES2509919-003	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Laboratory Duplicate (DUP) Report					
				LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG020T: Total Metals by ICP-MS (QC Lot: 6498834)									
ES2509478-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.0	No Limit
ES2509947-001	Anonymous	EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit
		EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Copper	7440-50-8	0.001	mg/L	0.002	0.002	0.0	No Limit
		EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.0	No Limit
		EG020A-T: Zinc	7440-66-6	0.005	mg/L	0.012	0.011	12.5	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 6498832)									
ES2509478-003	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit

Sub-Matrix: **WATER**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 6498832) - continued									
ES2509947-001	Anonymous	EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.0	No Limit

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

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

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6500677)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	103	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	74.1	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	110	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	104	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	98.9	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	96.6	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	91.4	66.0	133
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6500680)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	105	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	84.6	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	113	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	106	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	98.7	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	101	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	94.8	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6500678)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	94.2	70.0	125
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6500679)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	85.6	70.0	125
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 6493293)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	99.9	62.0	126
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 6493309)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	99.8	62.0	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 6493292)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	81.0	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	83.3	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	81.8	67.0	119
EP068: gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	84.7	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	76.0	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	81.6	67.0	115

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP068A: Organochlorine Pesticides (OC) (QCLot: 6493292) - continued								
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	82.3	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	82.6	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	83.0	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	85.0	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	82.2	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	80.5	66.0	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	83.4	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	81.4	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	84.3	69.0	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	80.5	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	84.1	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	82.8	62.0	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	85.7	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	85.1	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	78.8	54.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 6493308)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	79.5	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	87.7	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	76.6	67.0	119
EP068: gamma-BHC - (Lindane)	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	86.7	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	77.3	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	81.0	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	84.2	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	82.2	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	80.8	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	83.6	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	84.7	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	84.2	66.0	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	83.0	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	97.7	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	82.0	69.0	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	84.1	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	84.6	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	92.8	62.0	124

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP068A: Organochlorine Pesticides (OC) (QCLot: 6493308) - continued								
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	86.8	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	87.8	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	86.1	54.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 6493292)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	87.2	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.6	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	94.3	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	82.4	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	85.5	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	80.5	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	83.3	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	81.3	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	82.9	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	81.8	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	76.5	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	86.0	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	83.2	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	84.3	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	80.1	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	83.2	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	76.8	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	83.9	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	54.7	41.0	123
EP068B: Organophosphorus Pesticides (OP) (QCLot: 6493308)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	78.3	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	101	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	82.8	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	93.0	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	86.6	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	82.2	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	76.1	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	81.5	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	81.1	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	80.9	76.0	118

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report	Laboratory Control Spike (LCS) Report		
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
				Result	Concentration	LCS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 6493308) - continued								
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	78.5	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	85.0	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	85.6	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	79.7	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	92.9	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	84.8	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	81.8	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	95.9	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	61.6	41.0	123
EP075(SIM)A: Phenolic Compounds (QCLot: 6493291)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	6 mg/kg	95.3	71.0	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	6 mg/kg	93.3	72.0	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	6 mg/kg	89.2	71.0	123
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	12 mg/kg	89.3	67.0	127
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	6 mg/kg	77.3	54.0	114
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	6 mg/kg	89.0	68.0	126
EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	6 mg/kg	89.0	66.0	120
EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	6 mg/kg	88.7	70.0	120
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	6 mg/kg	87.5	70.0	116
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	6 mg/kg	76.8	54.0	114
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	6 mg/kg	74.6	60.0	114
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	12 mg/kg	47.5	10.0	80.0
EP075(SIM)A: Phenolic Compounds (QCLot: 6493307)								
EP075(SIM): Phenol	108-95-2	0.5	mg/kg	<0.5	6 mg/kg	117	71.0	125
EP075(SIM): 2-Chlorophenol	95-57-8	0.5	mg/kg	<0.5	6 mg/kg	116	72.0	124
EP075(SIM): 2-Methylphenol	95-48-7	0.5	mg/kg	<0.5	6 mg/kg	104	71.0	123
EP075(SIM): 3- & 4-Methylphenol	1319-77-3	1	mg/kg	<1	12 mg/kg	115	67.0	127
EP075(SIM): 2-Nitrophenol	88-75-5	0.5	mg/kg	<0.5	6 mg/kg	90.0	54.0	114
EP075(SIM): 2.4-Dimethylphenol	105-67-9	0.5	mg/kg	<0.5	6 mg/kg	105	68.0	126
EP075(SIM): 2.4-Dichlorophenol	120-83-2	0.5	mg/kg	<0.5	6 mg/kg	112	66.0	120
EP075(SIM): 2.6-Dichlorophenol	87-65-0	0.5	mg/kg	<0.5	6 mg/kg	101	70.0	120
EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	0.5	mg/kg	<0.5	6 mg/kg	92.8	70.0	116
EP075(SIM): 2.4.6-Trichlorophenol	88-06-2	0.5	mg/kg	<0.5	6 mg/kg	110	54.0	114
EP075(SIM): 2.4.5-Trichlorophenol	95-95-4	0.5	mg/kg	<0.5	6 mg/kg	108	60.0	114

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075(SIM)A: Phenolic Compounds (QCLot: 6493307) - continued								
EP075(SIM): Pentachlorophenol	87-86-5	2	mg/kg	<2	12 mg/kg	66.9	10.0	80.0
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6493291)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	97.1	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	93.2	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	94.2	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	96.0	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	96.2	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	96.1	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	96.7	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	97.6	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	90.1	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	92.9	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	97.2	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	91.5	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	86.1	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	86.0	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	83.7	63.0	121
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6493307)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	104	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	118	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	117	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	107	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	111	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	124	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	122	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	107	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	111	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	105	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	114	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	105	61.0	121

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6493307) - continued								
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	103	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	104	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6493282)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	96.3	72.2	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6493284)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	93.5	72.2	131
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6493290)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	93.1	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	86.1	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	87.2	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6493306)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	99.1	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	99.2	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	97.8	71.0	129
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6493282)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	85.6	72.4	133
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6493284)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	100	72.4	133
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6493290)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	91.9	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	86.0	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	86.6	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6493306)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	101	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	97.4	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	97.8	63.0	131
EP080: BTEXN (QCLot: 6493282)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	84.6	76.0	124
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	98.8	78.5	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	91.3	77.4	121
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	97.0	78.2	121
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	101	81.3	121
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	83.5	78.8	122

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080: BTEXN (QCLot: 6493284)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	98.2	76.0	124
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	90.3	78.5	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	91.1	77.4	121
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	95.6	78.2	121
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	89.2	81.3	121
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	91.4	78.8	122

Sub-Matrix: **WATER**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG020T: Total Metals by ICP-MS (QCLot: 6498834)								
EG020A-T: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	99.0	82.0	114
EG020A-T: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	94.4	84.0	112
EG020A-T: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	96.5	86.0	116
EG020A-T: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	98.0	83.0	118
EG020A-T: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	94.7	85.0	115
EG020A-T: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	95.2	84.0	116
EG020A-T: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	97.5	79.0	117
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6498832)								
EG035T: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	86.9	77.0	111

Matrix Spike (MS) Report

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

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6500677)							
ES2509920-001	BH1 0.1-0.2	EG005T: Arsenic	7440-38-2	50 mg/kg	100	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	98.4	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	101	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	103	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	102	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	98.2	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	100	66.0	133

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6500680)							
ES2509920-021	BH21 0.3_0.4	EG005T: Arsenic	7440-38-2	50 mg/kg	91.3	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	87.1	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	75.1	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	94.2	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	88.7	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	79.2	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	91.2	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6500678)							
ES2509920-001	BH1 0.1-0.2	EG035T: Mercury	7439-97-6	5 mg/kg	95.1	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6500679)							
ES2509920-021	BH21 0.3_0.4	EG035T: Mercury	7439-97-6	5 mg/kg	97.2	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 6493293)							
ES2509920-001	BH1 0.1-0.2	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	104	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 6493309)							
ES2509906-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	108	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 6493292)							
ES2509920-001	BH1 0.1-0.2	EP068: gamma-BHC - (Lindane)	58-89-9	0.5 mg/kg	84.8	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	92.1	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	76.7	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	102	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	78.0	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	81.5	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 6493308)							
ES2509906-001	Anonymous	EP068: gamma-BHC - (Lindane)	58-89-9	0.5 mg/kg	87.6	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	82.4	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	82.1	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	76.6	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	101	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	99.9	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 6493292)							
ES2509920-001	BH1 0.1-0.2	EP068: Diazinon	333-41-5	0.5 mg/kg	100	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	88.9	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	78.4	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	92.9	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	87.4	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 6493308)							

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 6493308) - continued							
ES2509906-001	Anonymous	EP068: Diazinon	333-41-5	0.5 mg/kg	103	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	98.4	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	84.8	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	77.3	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	75.5	70.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 6493291)							
ES2509920-001	BH1 0.1-0.2	EP075(SIM): Phenol	108-95-2	10 mg/kg	94.8	70.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	89.6	70.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	86.4	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	88.0	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	73.2	20.0	130
EP075(SIM)A: Phenolic Compounds (QCLot: 6493307)							
ES2509906-001	Anonymous	EP075(SIM): Phenol	108-95-2	10 mg/kg	109	70.0	130
		EP075(SIM): 2-Chlorophenol	95-57-8	10 mg/kg	111	70.0	130
		EP075(SIM): 2-Nitrophenol	88-75-5	10 mg/kg	96.1	60.0	130
		EP075(SIM): 4-Chloro-3-methylphenol	59-50-7	10 mg/kg	85.6	70.0	130
		EP075(SIM): Pentachlorophenol	87-86-5	10 mg/kg	71.4	20.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6493291)							
ES2509920-001	BH1 0.1-0.2	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	88.8	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	95.2	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 6493307)							
ES2509906-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	88.8	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	115	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6493282)							
ES2509920-001	BH1 0.1-0.2	EP080: C6 - C9 Fraction	----	32.5 mg/kg	117	60.4	142
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6493284)							
ES2509880-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	77.7	60.4	142
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6493290)							
ES2509920-001	BH1 0.1-0.2	EP071: C10 - C14 Fraction	----	480 mg/kg	123	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	104	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	119	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 6493306)							
ES2509906-001	Anonymous	EP071: C10 - C14 Fraction	----	480 mg/kg	112	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	104	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	106	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6493282)							

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6493282) - continued							
ES2509920-001	BH1 0.1-0.2	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	114	61.1	142
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6493284)							
ES2509880-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	77.0	61.1	142
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6493290)							
ES2509920-001	BH1 0.1-0.2	EP071: >C10 - C16 Fraction	----	860 mg/kg	104	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	114	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	105	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 6493306)							
ES2509906-001	Anonymous	EP071: >C10 - C16 Fraction	----	860 mg/kg	96.2	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	105	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	111	52.0	132
EP080: BTEXN (QCLot: 6493282)							
ES2509920-001	BH1 0.1-0.2	EP080: Benzene	71-43-2	2.5 mg/kg	105	62.1	122
		EP080: Toluene	108-88-3	2.5 mg/kg	108	66.6	119
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	116	67.4	123
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	119	66.4	121
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	108	70.7	121
		EP080: Naphthalene	91-20-3	2.5 mg/kg	111	61.1	115
EP080: BTEXN (QCLot: 6493284)							
ES2509880-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	75.7	62.1	122
		EP080: Toluene	108-88-3	2.5 mg/kg	73.2	66.6	119
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	80.2	67.4	123
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	80.6	66.4	121
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	80.2	70.7	121
		EP080: Naphthalene	91-20-3	2.5 mg/kg	84.3	61.1	115

Sub-Matrix: **WATER**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	Matrix Spike (MS) Report: SpikeRecovery(%) MS	Acceptable Limits (%) Low	Acceptable Limits (%) High
EG020T: Total Metals by ICP-MS (QCLot: 6498834)							
ES2509478-003	Anonymous	EG020A-T: Arsenic	7440-38-2	1 mg/L	96.1	70.0	130
		EG020A-T: Cadmium	7440-43-9	0.25 mg/L	94.6	70.0	130
		EG020A-T: Chromium	7440-47-3	1 mg/L	98.4	70.0	130
		EG020A-T: Copper	7440-50-8	1 mg/L	98.4	70.0	130
		EG020A-T: Lead	7439-92-1	1 mg/L	109	70.0	130
		EG020A-T: Nickel	7440-02-0	1 mg/L	96.7	70.0	130

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020T: Total Metals by ICP-MS (QCLot: 6498834) - continued							
ES2509478-003	Anonymous	EG020A-T: Zinc	7440-66-6	1 mg/L	97.2	70.0	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6498832)							
ES2509478-001	Anonymous	EG035T: Mercury	7439-97-6	0.01 mg/L	88.9	70.0	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2509920**	Page	: 1 of 13
Client	: **ECON Environmental Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: Con Kariotoglou	Telephone	: +61-2-8784 8555
Project	: PYMBLE	Date Samples Received	: 07-Apr-2025
Site	: ----	Issue Date	: 14-Apr-2025
Sampler	: Con Kariotoglou	No. of samples received	: 26
Order number	: 25-1971	No. of samples analysed	: 26

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

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

Summary of Outliers

Outliers : Quality Control Samples

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

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

Outliers : Analysis Holding Time Compliance

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

Outliers : Frequency of Quality Control Samples

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

Analysis Holding Time Compliance

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

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

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

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

Matrix: **SOIL**

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

Method / 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 0.1-0.2, BH11 0.2_0.3	**05-Apr-2025**	**----**	----	----	**08-Apr-2025**	19-Apr-2025	✓
Soil Glass Jar - Unpreserved (EA055)							
BH2 0.2_0.3, BH3 0.8_0.9, BH4 0.4_0.5, BH5 0.3_0.4, BH6 1.4_1.5, BH7 0.3_0.4, BH8 0.8_0.9, BH9 1.2_1.3, BH10 0.6_0.7, BH12 1.0_1.1, BH13 0.2_0.3, BH14 0.4_0.5, BH15 0.5_0.6, BH16 0.7_0.8, BH17 0.9_1.0, BH18 0.3_0.4, BH19 0.3_0.4, BH20 1.4_1.5, D1, D2, BH21 0.3_0.4, BH22 0.3_0.4, BH23 0.5_0.6	**05-Apr-2025**	**----**	----	----	**10-Apr-2025**	19-Apr-2025	✓
EA200: AS 4964 - 2004 Identification of Asbestos in Soils							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200)							
BH1 0.1-0.2, BH2 0.2_0.3, BH3 0.8_0.9, BH4 0.4_0.5, BH5 0.3_0.4, BH6 1.4_1.5, BH7 0.3_0.4, BH8 0.8_0.9, BH9 1.2_1.3, BH10 0.6_0.7, BH11 0.2_0.3, BH12 1.0_1.1, BH13 0.2_0.3, BH14 0.4_0.5, BH15 0.5_0.6, BH16 0.7_0.8, BH17 0.9_1.0, BH18 0.3_0.4, D1, D2, BH19 0.3_0.4, BH20 1.4_1.5, BH21 0.3_0.4, BH22 0.3_0.4, BH23 0.5_0.6	**05-Apr-2025**	**----**	----	----	**09-Apr-2025**	02-Oct-2025	✓

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
EA200N: Asbestos Quantification (non-NATA)							
Snap Lock Bag - Friable Asbestos/PSD Bag (EA200N)							
BH1 0.1-0.2, BH2 0.2_0.3, BH3 0.8_0.9, BH4 0.4_0.5, BH5 0.3_0.4, BH6 1.4_1.5, BH7 0.3_0.4, BH8 0.8_0.9, BH9 1.2_1.3, BH10 0.6_0.7, BH11 0.2_0.3, BH12 1.0_1.1, BH13 0.2_0.3, BH14 0.4_0.5, BH15 0.5_0.6, BH16 0.7_0.8, BH17 0.9_1.0, BH18 0.3_0.4, D1, D2, BH19 0.3_0.4, BH20 1.4_1.5, BH21 0.3_0.4, BH22 0.3_0.4, BH23 0.5_0.6	**05-Apr-2025**	**----**	----	**----**	**09-Apr-2025**	02-Oct-2025	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
BH1 0.1-0.2, BH2 0.2_0.3, BH3 0.8_0.9, BH4 0.4_0.5, BH5 0.3_0.4, BH6 1.4_1.5, BH7 0.3_0.4, BH8 0.8_0.9, BH9 1.2_1.3, BH10 0.6_0.7, BH11 0.2_0.3, BH12 1.0_1.1, BH13 0.2_0.3, BH14 0.4_0.5, BH15 0.5_0.6, BH16 0.7_0.8, BH17 0.9_1.0, BH18 0.3_0.4, D1, D2, BH19 0.3_0.4, BH20 1.4_1.5, BH21 0.3_0.4, BH22 0.3_0.4, BH23 0.5_0.6	**05-Apr-2025**	**11-Apr-2025**	02-Oct-2025	✓	**11-Apr-2025**	02-Oct-2025	✓

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 0.1-0.2, BH2 0.2_0.3, BH3 0.8_0.9, BH4 0.4_0.5, BH5 0.3_0.4, BH6 1.4_1.5, BH7 0.3_0.4, BH8 0.8_0.9, BH9 1.2_1.3, BH10 0.6_0.7, BH11 0.2_0.3, BH12 1.0_1.1, BH13 0.2_0.3, BH14 0.4_0.5, BH15 0.5_0.6, BH16 0.7_0.8, BH17 0.9_1.0, BH18 0.3_0.4, D1, D2, BH19 0.3_0.4, BH20 1.4_1.5, BH21 0.3_0.4, BH22 0.3_0.4, BH23 0.5_0.6	**05-Apr-2025**	**11-Apr-2025**	03-May-2025	✓	**14-Apr-2025**	03-May-2025	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066)							
BH21 0.3_0.4, BH22 0.3_0.4, BH23 0.5_0.6, D1, D2	**05-Apr-2025**	**08-Apr-2025**	19-Apr-2025	✓	**10-Apr-2025**	18-May-2025	✓
Soil Glass Jar - Unpreserved (EP066)							
BH1 0.1-0.2, BH2 0.2_0.3, BH3 0.8_0.9, BH4 0.4_0.5, BH5 0.3_0.4, BH6 1.4_1.5, BH7 0.3_0.4, BH8 0.8_0.9, BH9 1.2_1.3, BH10 0.6_0.7, BH11 0.2_0.3, BH12 1.0_1.1, BH13 0.2_0.3, BH14 0.4_0.5, BH15 0.5_0.6, BH16 0.7_0.8, BH17 0.9_1.0, BH18 0.3_0.4, BH19 0.3_0.4, BH20 1.4_1.5	**05-Apr-2025**	**08-Apr-2025**	19-Apr-2025	✓	**11-Apr-2025**	18-May-2025	✓

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) BH1 0.1-0.2, BH2 0.2_0.3, BH3 0.8_0.9, BH4 0.4_0.5, BH5 0.3_0.4, BH6 1.4_1.5, BH7 0.3_0.4, BH8 0.8_0.9, BH9 1.2_1.3, BH11 0.2_0.3, BH12 1.0_1.1, BH13 0.2_0.3, BH14 0.4_0.5, BH15 0.5_0.6, BH16 0.7_0.8, BH17 0.9_1.0, BH18 0.3_0.4, BH19 0.3_0.4, BH20 1.4_1.5	**05-Apr-2025**	**08-Apr-2025**	19-Apr-2025	✓	**10-Apr-2025**	18-May-2025	✓
Soil Glass Jar - Unpreserved (EP068) BH21 0.3_0.4, BH22 0.3_0.4, BH23 0.5_0.6, D1, D2	**05-Apr-2025**	**08-Apr-2025**	19-Apr-2025	✓	**11-Apr-2025**	18-May-2025	✓
Soil Glass Jar - Unpreserved (EP068) BH10 0.6_0.7	**05-Apr-2025**	**08-Apr-2025**	19-Apr-2025	✓	**14-Apr-2025**	18-May-2025	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068) BH1 0.1-0.2, BH2 0.2_0.3, BH3 0.8_0.9, BH4 0.4_0.5, BH5 0.3_0.4, BH6 1.4_1.5, BH7 0.3_0.4, BH8 0.8_0.9, BH9 1.2_1.3, BH11 0.2_0.3, BH12 1.0_1.1, BH13 0.2_0.3, BH14 0.4_0.5, BH15 0.5_0.6, BH16 0.7_0.8, BH17 0.9_1.0, BH18 0.3_0.4, BH19 0.3_0.4, BH20 1.4_1.5	**05-Apr-2025**	**08-Apr-2025**	19-Apr-2025	✓	**10-Apr-2025**	18-May-2025	✓
Soil Glass Jar - Unpreserved (EP068) BH21 0.3_0.4, BH22 0.3_0.4, BH23 0.5_0.6, D1, D2	**05-Apr-2025**	**08-Apr-2025**	19-Apr-2025	✓	**11-Apr-2025**	18-May-2025	✓
Soil Glass Jar - Unpreserved (EP068) BH10 0.6_0.7	**05-Apr-2025**	**08-Apr-2025**	19-Apr-2025	✓	**14-Apr-2025**	18-May-2025	✓

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075(SIM)A: Phenolic Compounds							
Soil Glass Jar - Unpreserved (EP075(SIM))							
BH1 0.1-0.2, BH2 0.2_0.3, BH3 0.8_0.9, BH4 0.4_0.5, BH5 0.3_0.4, BH6 1.4_1.5, BH7 0.3_0.4, BH8 0.8_0.9, BH9 1.2_1.3, BH11 0.2_0.3, BH12 1.0_1.1, BH13 0.2_0.3, BH14 0.4_0.5, BH15 0.5_0.6, BH16 0.7_0.8, BH17 0.9_1.0, BH18 0.3_0.4, BH19 0.3_0.4, BH20 1.4_1.5	**05-Apr-2025**	**08-Apr-2025**	19-Apr-2025	✓	**09-Apr-2025**	18-May-2025	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
BH10 0.6_0.7, BH21 0.3_0.4, BH22 0.3_0.4, BH23 0.5_0.6, D1, D2	**05-Apr-2025**	**08-Apr-2025**	19-Apr-2025	✓	**10-Apr-2025**	18-May-2025	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
BH1 0.1-0.2, BH2 0.2_0.3, BH3 0.8_0.9, BH4 0.4_0.5, BH5 0.3_0.4, BH6 1.4_1.5, BH7 0.3_0.4, BH8 0.8_0.9, BH9 1.2_1.3, BH11 0.2_0.3, BH12 1.0_1.1, BH13 0.2_0.3, BH14 0.4_0.5, BH15 0.5_0.6, BH16 0.7_0.8, BH17 0.9_1.0, BH18 0.3_0.4, BH19 0.3_0.4, BH20 1.4_1.5	**05-Apr-2025**	**08-Apr-2025**	19-Apr-2025	✓	**09-Apr-2025**	18-May-2025	✓
Soil Glass Jar - Unpreserved (EP075(SIM))							
BH10 0.6_0.7, BH21 0.3_0.4, BH22 0.3_0.4, BH23 0.5_0.6, D1, D2	**05-Apr-2025**	**08-Apr-2025**	19-Apr-2025	✓	**10-Apr-2025**	18-May-2025	✓

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 (EP080)							
BH1 0.1-0.2, BH2 0.2_0.3, BH3 0.8_0.9, BH4 0.4_0.5, BH5 0.3_0.4, BH6 1.4_1.5, BH9 1.2_1.3, BH10 0.6_0.7, BH11 0.2_0.3, BH12 1.0_1.1, BH13 0.2_0.3, BH15 0.5_0.6, BH16 0.7_0.8, BH17 0.9_1.0, BH18 0.3_0.4, BH21 0.3_0.4, BH22 0.3_0.4, BH23 0.5_0.6, D1, D2	**05-Apr-2025**	**08-Apr-2025**	19-Apr-2025	✓	**09-Apr-2025**	19-Apr-2025	✓
Soil Glass Jar - Unpreserved (EP071)							
BH2 0.2_0.3, BH3 0.8_0.9, BH4 0.4_0.5, BH5 0.3_0.4, BH6 1.4_1.5, BH7 0.3_0.4, BH8 0.8_0.9, BH9 1.2_1.3, BH10 0.6_0.7, BH11 0.2_0.3, BH12 1.0_1.1, BH13 0.2_0.3, BH14 0.4_0.5, BH15 0.5_0.6, BH16 0.7_0.8, BH17 0.9_1.0, BH18 0.3_0.4, BH19 0.3_0.4, BH20 1.4_1.5	**05-Apr-2025**	**08-Apr-2025**	19-Apr-2025	✓	**10-Apr-2025**	18-May-2025	✓
Soil Glass Jar - Unpreserved (EP071)							
BH7 0.3_0.4, BH8 0.8_0.9, BH14 0.4_0.5, BH19 0.3_0.4, BH20 1.4_1.5, D2	**05-Apr-2025**	**08-Apr-2025**	19-Apr-2025	✓	**11-Apr-2025**	18-May-2025	✓

Matrix: **SOIL**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
BH1 0.1-0.2, BH2 0.2_0.3, BH3 0.8_0.9, BH4 0.4_0.5, BH5 0.3_0.4, BH6 1.4_1.5, BH9 1.2_1.3, BH10 0.6_0.7, BH11 0.2_0.3, BH12 1.0_1.1, BH13 0.2_0.3, BH15 0.5_0.6, BH16 0.7_0.8, BH17 0.9_1.0, BH18 0.3_0.4, BH21 0.3_0.4, BH22 0.3_0.4, BH23 0.5_0.6, D1, D2	**05-Apr-2025**	**08-Apr-2025**	19-Apr-2025	✓	**09-Apr-2025**	19-Apr-2025	✓
Soil Glass Jar - Unpreserved (EP071)							
BH2 0.2_0.3, BH3 0.8_0.9, BH4 0.4_0.5, BH5 0.3_0.4, BH6 1.4_1.5, BH7 0.3_0.4, BH8 0.8_0.9, BH9 1.2_1.3, BH10 0.6_0.7, BH11 0.2_0.3, BH12 1.0_1.1, BH13 0.2_0.3, BH14 0.4_0.5, BH15 0.5_0.6, BH16 0.7_0.8, BH17 0.9_1.0, BH18 0.3_0.4, BH19 0.3_0.4, BH20 1.4_1.5	**05-Apr-2025**	**08-Apr-2025**	19-Apr-2025	✓	**10-Apr-2025**	18-May-2025	✓
Soil Glass Jar - Unpreserved (EP071)							
BH7 0.3_0.4, BH8 0.8_0.9, BH14 0.4_0.5, BH19 0.3_0.4, BH20 1.4_1.5, D2	**05-Apr-2025**	**08-Apr-2025**	19-Apr-2025	✓	**11-Apr-2025**	18-May-2025	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
BH1 0.1-0.2, BH2 0.2_0.3, BH3 0.8_0.9, BH4 0.4_0.5, BH5 0.3_0.4, BH6 1.4_1.5, BH9 1.2_1.3, BH10 0.6_0.7, BH11 0.2_0.3, BH12 1.0_1.1, BH13 0.2_0.3, BH15 0.5_0.6, BH16 0.7_0.8, BH17 0.9_1.0, BH18 0.3_0.4, BH21 0.3_0.4, BH22 0.3_0.4, BH23 0.5_0.6, D1, D2	**05-Apr-2025**	**08-Apr-2025**	19-Apr-2025	✓	**09-Apr-2025**	19-Apr-2025	✓
Soil Glass Jar - Unpreserved (EP080)							
BH7 0.3_0.4, BH8 0.8_0.9, BH14 0.4_0.5, BH19 0.3_0.4, BH20 1.4_1.5	**05-Apr-2025**	**08-Apr-2025**	19-Apr-2025	✓	**11-Apr-2025**	19-Apr-2025	✓

Matrix: **WATER**

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

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020T: Total Metals by ICP-MS							
Clear Plastic Bottle - Natural (EG020A-T)							
R1	**05-Apr-2025**	**09-Apr-2025**	02-Oct-2025	✓	**09-Apr-2025**	02-Oct-2025	✓
EG035T: Total Recoverable Mercury by FIMS							
Clear Plastic Bottle - Natural (EG035T)							
R1	**05-Apr-2025**	**----**	----	----	**11-Apr-2025**	03-May-2025	✓

Quality Control Parameter Frequency Compliance

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

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	6	51	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	4	36	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	4	34	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	4	34	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	4	40	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	5	40	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	4	36	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	4	38	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	2	36	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	34	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	34	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	36	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	38	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	2	36	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	34	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	34	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	36	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	38	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	2	36	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	2	34	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	2	34	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	40	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	36	5.56	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	38	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard

Matrix: **WATER**

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

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

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Total Mercury by FIMS	EG035T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-MS - Suite A	EG020A-T	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Asbestos Identification in Soils	EA200	SOIL	AS 4964 Method for the qualitative identification of asbestos in bulk samples Analysis by Polarised Light Microscopy including dispersion staining
Asbestos Classification and Quantitation per NEPM 2013	* EA200N	SOIL	Asbestos Classification and Quantitation per NEPM with Confirmation of Identification by AS 4964 - Gravimetric determination of Asbestos Containing Material, Fibrous Asbestos, Asbestos Fines and sample weight and calculation of percentage concentrations per NEPM protocols. Asbestos (Fines and Fibrous FA+AF) is reported as the equivalent weight in the sample received after accounting for sub-sampling (where applicable for the <7mm and/or <2mm fractions).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3).
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.
Total Metals by ICP-MS - Suite A	EG020A-T	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.

Analytical Methods	Method	Matrix	Method Descriptions
Total Mercury by FIMS	EG035T	WATER	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the unfiltered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3).

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.
Digestion for Total Recoverable Metals	EN25	WATER	In house: Referenced to USEPA SW846-3005. Method 3005 is a Nitric/Hydrochloric acid digestion procedure used to prepare surface and ground water samples for analysis by ICPAES or ICPMS. This method is compliant with NEPM Schedule B(3)

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2509920**

Client	: **ECON Environmental Pty Ltd**	Laboratory	: Environmental Division Sydney
Contact	: Con Kariotoglou	Contact	: Customer Services ES
Address	: 1 St Aidans Avenue Oatlands 2117	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: info@econenvironmental.com.au	E-mail	: ALSEnviro.Sydney@ALSGlobal.com
Telephone	: ----	Telephone	: +61-2-8784 8555
Facsimile	: ----	Facsimile	: +61-2-8784 8500
Project	: PYMBLE	Page	: 1 of 3
Order number	: 25-1971	Quote number	: ES2020ECONEV0001 (EN/222)
C-O-C number	: ----	QC Level	: NEPM 2013 B3 & ALS QC Standard
Site	: ----		
Sampler	: Con Kariotoglou		

Dates

Date Samples Received	: 07-Apr-2025 09:00	Issue Date	: 07-Apr-2025
Client Requested Due Date	: 14-Apr-2025	Scheduled Reporting Date	: **14-Apr-2025**

Delivery Details

Mode of Delivery	: Client Drop Off	Security Seal	: Intact.
No. of coolers/boxes	: 2	Temperature	: 15.8'c, 16.2'c, 16.8'c - Ice Bricks present
Receipt Detail	: hard esky's	No. of samples received / analysed	: 26 / 26

General Comments

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

Sample Container(s)/Preservation Non-Compliances

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

Method Sample ID	Sample Container Received	Preferred Sample Container for Analysis
Total Mercury by FIMS : EG035T		
R1	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Unfiltered
Total Metals by ICP-MS - Suite A : EG020A-T		
R1	- Clear Plastic Bottle - Natural	- Clear Plastic Bottle - Nitric Acid; Unfiltered

Summary of Sample(s) and Requested Analysis

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

Matrix: **SOIL**

Laboratory sample ID	Sampling date / time	Sample ID	SOIL - EA055-103 Moisture Content	SOIL - EA200F Asbestos Quantitation (FA+AF) in Soil by	SOIL - S-19 TRH/BTEXN/PAH/Ph/OC/OP/PCB/8 metals
ES2509920-001	05-Apr-2025 00:00	BH1 0.1-0.2	✓	✓	✓
ES2509920-002	05-Apr-2025 00:00	BH2 0.2_0.3	✓	✓	✓
ES2509920-003	05-Apr-2025 00:00	BH3 0.8_0.9	✓	✓	✓
ES2509920-004	05-Apr-2025 00:00	BH4 0.4_0.5	✓	✓	✓
ES2509920-005	05-Apr-2025 00:00	BH5 0.3_0.4	✓	✓	✓
ES2509920-006	05-Apr-2025 00:00	BH6 1.4_1.5	✓	✓	✓
ES2509920-007	05-Apr-2025 00:00	BH7 0.3_0.4	✓	✓	✓
ES2509920-008	05-Apr-2025 00:00	BH8 0.8_0.9	✓	✓	✓
ES2509920-009	05-Apr-2025 00:00	BH9 1.2_1.3	✓	✓	✓
ES2509920-010	05-Apr-2025 00:00	BH10 0.6_0.7	✓	✓	✓
ES2509920-011	05-Apr-2025 00:00	BH11 0.2_0.3	✓	✓	✓
ES2509920-012	05-Apr-2025 00:00	BH12 1.0_1.1	✓	✓	✓
ES2509920-013	05-Apr-2025 00:00	BH13 0.2_0.3	✓	✓	✓
ES2509920-014	05-Apr-2025 00:00	BH14 0.4_0.5	✓	✓	✓
ES2509920-015	05-Apr-2025 00:00	BH15 0.5_0.6	✓	✓	✓
ES2509920-016	05-Apr-2025 00:00	BH16 0.7_0.8	✓	✓	✓
ES2509920-017	05-Apr-2025 00:00	BH17 0.9_1.0	✓	✓	✓
ES2509920-018	05-Apr-2025 00:00	BH18 0.3_0.4	✓	✓	✓
ES2509920-019	05-Apr-2025 00:00	BH19 0.3_0.4	✓	✓	✓
ES2509920-020	05-Apr-2025 00:00	BH20 1.4_1.5	✓	✓	✓
ES2509920-021	05-Apr-2025 00:00	BH21 0.3_0.4	✓	✓	✓
ES2509920-022	05-Apr-2025 00:00	BH22 0.3_0.4	✓	✓	✓
ES2509920-023	05-Apr-2025 00:00	BH23 0.5_0.6	✓	✓	✓
ES2509920-024	05-Apr-2025 00:00	D1	✓	✓	✓
ES2509920-025	05-Apr-2025 00:00	D2	✓	✓	✓

Matrix: **WATER**

Laboratory sample ID	Sampling date / time	Sample ID	WATER - W-02T 8 metals (Total)
ES2509920-026	05-Apr-2025 00:00	R1	✓

Proactive Holding Time Report

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

Requested Deliverables

Con Kariotoglou

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

Inter-Laboratory Testing

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

(SOIL) EA200N: Asbestos Quantification (non-NATA)

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

CHAIN OF

ALS Environmental

CLIENT: ECON Environmental Pty Ltd	TURNAROUND REQUIREMENTS : ☐ Standard TAT (List due date): 14.04.2025	FOR LABORATORY USE ONLY (Circle)	
OFFICE: 1 St Aidans Avenue, Oatlands NSW 2117	(Standard TAT may be longer for some tests e.g. Ultra Trace Organics) ☐ Non Standard or urgent TAT (List due date):	Custody seal intact?	Yes No N/A
PROJECT: PYMBLE	ALS QUOTE NO.: ECONEV	Free ice / frozen ice bricks present upon arrival?	Yes No N/A
ORDER NUMBER: 25-1971	COC SEQUENCE NUMBER (Circle) COC: 1 2 3 4 5 6 7	Random Sample Temperature on Receipt	°C
PROJECT MANAGER: Con Kariotoglou CONTACT PH: 0452 654 982	OF: 1 2 3 4 5 6 7	Other comments:	
SAMPLER: Con Kariotoglou SAMPLER MOBILE: 0452 654 982	RELINQUISHED BY:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
COC emailed to ALS? (YES) EDD FORMAT (or default):	Con Kariotoglou			
Email Reports to (will default to PM if no other addresses are listed) info@econenvironmental.com.au	DATE/TIME	DATE/TIME	DATE/TIME	DATE/TIME
Email Invoice to (will default to PM if no other addresses are listed) info@econenvironmental.com.au	05.04.2025	7/4/25 9a		

COMMENTS/SPECIAL HANDLING/STORAGE OR DISPOSAL:

ALS USE	SAMPLE DETAILS MATRIX: SOLID (S) WATER (W)			CONTAINER INFORMATION	ANALYSIS REQUIRED including SUITES (NB. Suite Codes must be listed to attract suite price) Where Metals are required, specify Total (unfiltered bottle required) or Dissolved (field filtered bottle required)								Additional Information
LAB ID	SAMPLE ID	DATE / TIME	MATRIX	TYPE & PRESERVATIVE *(refer to codes below)*	TOTAL CONTAINERS	S-19	Asbestos EA200F (%w/w)	Heavy Metals (S2)					Comments on likely contaminant levels, dilutions, or samples requiring specific QC analysis etc
1	BH1 0.1-0.2	05.04.2025	S		2	√	√						sieved
2	BH2 0.2-0.3	05.04.2025	S		2	√	√						sieved
3	BH3 0.8-0.9	05.04.2025	S		2	√	√						sieved
4	BH4 0.4-0.5	05.04.2025	S		2	√	√						sieved
5	BH5 0.3-0.4	05.04.2025	S		2	√	√						sieved
6	BH6 1.4-1.5	05.04.2025	S		2	√	√						sieved
7	BH7 0.3-0.4	05.04.2025	S		2	√	√						sieved
8	BH8 0.8-0.9	05.04.2025	S		2	√	√						sieved
9	BH9 1.2-1.3	05.04.2025	S		2	√	√						sieved
10	BH10 0.6-0.7	05.04.2025	S		2	√	√						sieved
11	BH11 0.2-0.3	05.04.2025	S		2	√	√						sieved
12	BH12 1.0-1.1	05.04.2025	S		2	√	√						sieved
13	BH13 0.2-0.3	05.04.2025	S		2	√	√						sieved
14	BH14 0.4-0.5	05.04.2025	S		2	√	√						sieved
15	BH15 0.5-0.6	05.04.2025	S		2	√	√						sieved
16	BH16 0.7-0.8	05.04.2025	S		2	√	√						sieved
17	BH17 0.9-1.0	05.04.2025	S		2	√	√						sieved
18	BH18 0.3-0.4	05.04.2025	S		2	√	√						sieved
19	BH19 0.3-0.4	05.04.2025	S		2	√	√						sieved
20	BH20 1.4-1.5	05.04.2025	S		2	√	√						sieved
21	BH21 0.3-0.4	05.04.2025	S		2	√	√						sieved
22	BH22 0.3-0.4	05.04.2025	S		2	√	√						sieved
23	BH23 0.5-0.6	05.04.2025	S		2	√	√						sieved
24	D1	05.04.2025	S		2	√	√						sieved
25	D2	05.04.2025	S		2	√	√						sieved
26	R1	05.04.2025	W		1			√					
				TOTAL	51	25	25	1					

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 VOA; SG = Sulphuric Preserved Amber Glass

Environmental Division
Sydney
Work Order Reference
ES2509920

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