Coleman & Adams
ENVIRONMENTAL

Remediation and Validation Report
810 Pacific Hwy, Gordon NSW
AKA Contractors Pty Ltd

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Coleman Adams Environmental

● Environmental Investigations ● Risk Assessment ● Project Management

STAGE 4 REMEDIATION AND VALIDATION REPORT

810 PACIFIC HIGHWAY,

GORDON NSW

PREPARED FOR AKA CONTRACTORS PTY LTD

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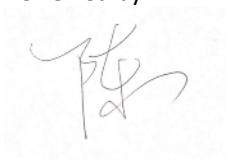

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List of Abbreviations

A list of the common abbreviations used throughout this report is provided below.

ACM Asbestos Containing Material
AEC Area of Environmental Concern
AGST Above Ground Storage Tank
AHD Australian Height Datum
BGL Below ground level
CAE Coleman and Adams Environmental Pty Ltd
CSM Conceptual site model
BTEX Benzene, toluene, ethylbenzene and xylenes
B(a)P Benzo(a)pyrene
CCA Copper Chromate Arsenate
COPC Contaminants of Potential Concern
DEC NSW Department of Environment and Conservation
DECCW NSW Department of Environment, Climate Change and Water
DQI Data quality indicator
DQOs Data Quality Objectives
DWE NSW Department of Water and Energy
EPA NSW Environment Protection Authority
ESA Environmental Site Assessment
ha Hectare
HIL Health based investigation level
LOR Limit of Reporting
OEH Office of Environment and Heritage
PAHs Polycyclic aromatic hydrocarbons
PID Photo-ionisation Detector
PCB Polychlorinated Biphenyl
PQL Practical Quantitation Limit
QA/QC Quality Assurance/Quality Control
RPD Relative Percentage Difference
SAQP Sampling, Analysis and Quality Plan
TRH Total Recoverable Hydrocarbons (previously Total Petroleum Hydrocarbons)
TSS Total Suspended Solids
UST Underground Storage Tank
VOC Volatile Organic Compound

Executive Summary

This executive summary presents a synopsis of a Stage 4 Remediation and Validation Report, for 810 Pacific Highway, Gordon NSW (the site). The area of investigation is currently occupied by a multi-storey concrete commercial structure, with the outer portions of the site covered by light vegetation with underlying fill, impacted by anthropogenic material.

The site is legally defined as Lot 12 in Deposited Plan 631351 and is bounded by commercial and residential properties to the north, Pacific Highway followed by commercial properties to the east, commercial and residential properties to the south and residential properties to the west. The site encompasses a total area of approximately 2396.79m^2.

Review of previous site investigations determined the recommendations for contamination requiring remediation and the proposed strategy are as follows:

- AEC-1 PAH Hot Spot Location - PAH impacted material (AEC1)- Sample location TP101 obtained from within 3.0mBGL identified PAH impacted fill material. Hot Spot excavation works will be undertaken at the identified location (see figure attached in Appendix A, red area).

- AEC-2 Heavy Metal, TRH and PAH Impacted Hot Spot Locations – Heavy Metals, TRH and PAH impacted material (AEC2)- Sample locations TP108, BH105 and BH105 obtained from within 0.3m, 3.0m and 4.4m BGL respectively identified contamination within imported fill material. Hot Spot excavation works will be undertaken at the identified location (see figure attached in Appendix A, green area).

Coleman and Adams Environmental therefore conducted material testing of site material, post removal of identified impacted material, to determine the presence of contamination in order to determine the suitability of the site for the proposed land use.

A search of the NSW EPA Contaminated Land Management record of notices for the Gordon area indicated no notices have been issued to the subject site. Furthermore, the listed sites on the register are situated at such a distance (greater than 200m), that they are not believed to have provided a potential contamination risk to the subject property.

A search of the POEO public register of licensed and delicensed premises (DECC) indicated the subject site was not listed. Furthermore, the listed sites on the register are situated at such a distance (greater than 200m), that they are not believed to have provided a potential contamination risk to the subject property.

Fifty (50) soil samples and two (2) asbestos ID samples were recovered and sent to a NATA accredited laboratory for analysis. Test results revealed levels of contaminants remaining onsite are below the adopted assessment criteria in accordance with the proposed land use:

- HIL-B – Residential with minimal accessible soil;
- HSL-B – Residential with minimal accessible soil;
- EIL – Urban residential and public open space;
- ESL – Urban residential and public open space;
- Management Limits for TPH.

The results of the chemical and physical analysis indicate that the AECs previously identified have been successfully remediated in accordance with the RAP and NEPM, and the site does not present a risk to human health or the environment in a ‘Residential B’ setting.

This report is the outcome of the Site Remediation and Validation Investigation with laboratory testing undertaken. The data quality objectives of the report have been fulfilled. Therefore, the findings of this report, and the results of the chemical analyses indicate the site is suitable for the proposed land use in a 'Residential'('B') setting, and does not require any additional ongoing site monitoring or additional remediation works.

1.0 INTRODUCTION

1.1 Overview

Coleman and Adams Environmental Pty Ltd (CAE) have undertaken a Stage 4 Site Remediation and Validation Investigation with laboratory testing and analysis as requested by AKA Contractors Pty Ltd (client), at the site; 810 Pacific Highway, Gordon NSW (the site), in accordance with the National Environmental Protection (Assessment of Site Contamination) Measure 1999 as amended 2013 and the Remedial Action Plan (RAP) prepared by EI Australia (E26674.E06.Rev0).

At the time of the CAE investigation, the site was occupied by a multi-storey concrete commercial structure, with the outer portions of the site comprising exposed fill soils and light vegetation. The exposed surface material within the area of investigation contained anthropogenic inclusions consistent with historic fill placement, including concrete, brick, metal and bitumen fragments, as noted during intrusive investigation works.

The Investigation was to ascertain whether the site presents a risk to human health and/or the environment arising from any past/present activities at the site, post-remediation of identified areas of environmental concern (AECs), in accordance with the RAP and the following regulatory requirements:

- Contaminated Land Management Act 1997,
- State Environmental Planning Policy No.55 – Remediation of Land 1998,
- State Environmental Planning Policy (Resilience and Hazards) 2021
- Guidelines for Consultants Reporting on Contaminated Sites 2020,
- Guidelines for the NSW Site Auditor Scheme, 3rd Edition 2017,
- National Environmental Protection (Assessment of Site Contamination) Measure 1999 as amended 2013,
- Guidelines for Assessing Service Stations. NSW Environment Protection Authority (EPA) 1994,
- National Environmental Protection (Assessment of Site Contamination) Measure 1999 as amended 2013,
- NSW EPA: Waste Classification Guidelines Part1: Classifying Waste 2014
- Australian Standard AS 4482.1 Guide to the sampling and investigation of potentially contaminated soil. Part 1: Non-volatile and semi-volatile compounds
- Australian Standard AS 4482.2 Guide to the sampling and investigation of potentially contaminated soil. Part 2: Volatile substances
- Guidelines for the Assessment and Management of Groundwater Contamination (NSW DEC, 2007)

CAE were engaged to undertake remediation validation works associated with two identified Areas of Environmental Concern (AECs) at the site, being:

- **AEC-1** – PAH-impacted fill at TP101, identified during the Detailed Gap Investigation (DGSI), and
- **AEC-2** – Heavy metals, TRH and PAH impacts associated with historic fill within the central-eastern portion of the site, including test locations TP108, BH105 and BH105 (EI Australia, 2025).

Remediation of the impacted soil was undertaken by the client in accordance with the RAP, with CAE subsequently completing validation sampling of the excavation bases and walls to confirm that impacted material had been successfully removed.

This Stage 4 Site Remediation and Validation Investigation Report documents the findings of the validation work undertaken by CAE, including laboratory analysis results and assessment of the remaining onsite material against the adopted assessment criteria for the proposed land use.

1.2 Previous Investigations

CAE were made aware that previous site investigations have been undertaken to identify the presence and extent of contaminants at the site and underlying soil/groundwater conditions. The aim of the investigations was to identify any potential contamination and, if identified, assess the potential impact on the environment, site inhabitants and surrounding area. The investigations undertaken are as follows:

- **Stage 2 Environmental Site Assessment**, 810 Pacific Highway, Gordon NSW, prepared by EIS (JK Geotechnics), 2016.
- **Geotechnical Investigation**, 810 Pacific Highway, Gordon NSW, prepared by JK Geotechnics, 2016.
- **Geotechnical Investigation**, Proposed Multi-Storey Development, prepared by Geotechnics Pty Ltd, 2022.
- **EI Australia**, Detailed Gap Investigation: 810 Pacific Highway, Gordon NSW (Ref: E26674.E03, April 2025).
- **EI Australia**, Remedial Action Plan (RAP): 810 Pacific Highway, Gordon NSW (Ref: E26674.E06, April 2025).
- **Coleman & Adams Environmental**, Waste Classification Assessment – Stockpiled Material: 810 Pacific Highway, Gordon NSW (Ref: CAE1534.1.rev01, 28/10/2025).
- **Coleman & Adams Environmental**, Waste Classification Assessment – Stockpiled Material: 810 Pacific Highway, Gordon NSW (Ref: CAE1534.2, 02/10/2025).

1.3 Summary of Previous Investigations and CoPCs

The previous investigations identified the presence of imported fill of unknown quality across the site, including deep heterogeneous fill in the north-eastern portion of the site containing brick, concrete, metal, plastic and bitumen fragments. Historical commercial use, including a former service station and mechanical workshop, resulted in localised petroleum hydrocarbon impacts and minor metal exceedances within natural soils.

The Stage 2 ESA (2016) identified potential contamination risks associated with former fuel handling infrastructure, workshop activities, hazardous building materials and general fill. Subsequent geotechnical investigations (2016, 2022) confirmed variable fill depths and provided additional information on groundwater conditions. The EI Australia Data Gap Investigation (2025) identified carcinogenic PAH exceedances in fill at TP101 and isolated TRH and metal detections within the southern and central-eastern portions of the site. Groundwater results indicated hydrocarbons associated with natural shale rather than contamination.

The Remedial Action Plan (EI Australia, 2025) consolidated these findings, identifying AEC-1 (PAH-impacted fill at TP101) and AEC-2 (combined metals, TRH and PAH impacts in the central-eastern portion of the site) and establishing remedial and validation requirements. CAE waste classification assessments (2025) characterised stockpiled material generated during works, classifying materials as Restricted Solid Waste or General Solid Waste in accordance with the NSW EPA Waste Classification Guidelines (2014).

2.0 SCOPE OF WORK

The scope of work for this Stage 4 Site Remediation and Validation Investigation was developed in accordance with the Remedial Action Plan (EI Australia, 2025) and the results of previous investigations. The purpose of the works was to confirm that identified Areas of Environmental Concern (AECs) had been appropriately remediated and that remaining soil onsite is suitable for the proposed land use.

The following scope of work was conducted by CAE:

- Desktop study to assist in identification of potential contamination issues.
- Review of previous site investigations.
- Data from Environment Protection Authority.
- Data from the Protection of the Environment Operations Public Register (POEO).
- Review of soils and geological maps.
- Site Inspections by a representative from CAE to ascertain current activities, and any visible signs of contamination arising from past/current site use.
- Site walkover and assessment of previously identified AEC locations and exposed soil.
- Inspection and sampling within the proximity of previously identified AEC locations.
- Chemical analysis by a NATA accredited laboratory.
- Assessment of the results of the chemical analysis against the appropriate guidelines.
- Preparation of a Site Remediation and Validation Investigation Report detailing findings and recommendations in general accordance with the RAP and National Environment Protection Council (NEPC) National Environment Protection Measure (Assessment of Site Contamination) 2013 (NEMP ASC 2013) and NSW Office of Environment and Heritage Guidelines for Consultants Reporting on Contaminated Sites (OEH 2011).

2.1 Objectives of the Investigation

The objectives of the investigation are as follows:

- To determine whether onsite material meets National Environment Protection Council (NEPC) National Environment Protection Measure (Assessment of Site Contamination) 2013 and remedial action plan assessment criteria;
- If the samples obtained during the investigation fail to meet the assessment criteria, provide guidance for remediation of impacted soils.

This Stage 4 Site Remediation and Validation Investigation Report has been prepared to address the above objectives, with the following scope of work undertaken:

- Review of historical and previous investigation information relating to the site and surrounding area;

- Preparation of a Conceptual Site Model (CSM) for the onsite material and subsequent material assessment;
- Identification of data gaps and data quality issues;
- Collection of soil samples to identify contamination, if present, and provide comment to the extent of the contamination;
- Preparation of the Data Quality Objectives (DQO) and Quality Assurance/Quality Control (QA/QC) documentation in accordance with NEPM (NEPC 2013) and the RAP as required; and
- Provide a statement of whether the site, from the data obtained, has been successfully remediated and is suitable for the proposed land use.

3.0 SITE DESCRIPTION

The site is located at 810 Pacific Highway, Gordon NSW, within the Ku-ring-gai Local Government Area. The site comprises Lot 12 DP 631351 and is situated on the eastern side of the Pacific Highway. Surrounding land use is predominantly commercial, with mixed-use and residential properties located further east of the site. The site encompasses a total area of approximately 2396.79m^2.

At the time of the investigation, the site consisted of a partially demolished multi-storey concrete building with exposed fill soils surrounding the structure. Surface soils contained anthropogenic inclusions including brick, concrete, metal, plastic and bitumen fragments, consistent with previous investigations identifying imported fill of variable composition.

Subsurface conditions identified in earlier investigations comprise variable fill materials overlying natural residual clays and silts derived from weathered shale. Bedrock consists of shale of the Ashfield Shale formation. Fill depths vary across the site, with deeper fill recorded in the north-eastern portion.

3.1 Topography

The site area of investigation has an approximate height of 120-128m above Australian Height Datum (AHD) and slopes west toward nearby residential land, with surface water flowing toward the nearby residential land.

3.2 Geology

The site is underlain by the Ashfield Shale of the Wianamatta Group, comprising dark grey to black shale and laminite. Previous investigations identified variable imported fill overlying natural residual clays and silts derived from weathered shale. Fill depths vary across the site, with deeper fill recorded in the north-eastern portion. Bedrock was encountered at depth consistent with the regional geological profile.

3.3 Hydrogeology

Groundwater was encountered at depths of approximately 2.7–5.8 m below ground level in previous investigations. Groundwater flow is expected to follow the natural topographic gradient, trending towards the west. Groundwater results indicated the presence of naturally occurring hydrocarbons associated with the underlying shale, with no evidence of free-phase product. No groundwater remediation was required.

3.4 Surface Water Flows

Surface water flows across the site follow the general topographic gradient from east to west toward Radford Place and residential properties. No surface water bodies were present onsite during the investigation. Stormwater runoff is directed to existing hardstand areas and road drainage infrastructure surrounding the site.

3.5 Acid Sulfate Soils

NSW Office of Environment and Heritage eSPADE tool Acid Sulfate Soil risk maps indicate that the subject site is situated in an area of 'No Known Occurrence'. Previous investigations did not identify any indicators of actual or potential acid sulfate soils, and no acid sulfate soil management requirements were identified for the proposed works.

4.0 SITE HISTORY

In order to ascertain the site history, a documentary review of past and present land use at the subject site and the surrounding area have been undertaken.

Historical aerial photographs and previous investigations indicate that the site has been used for various commercial activities since at least the 1940s.

The Stage 2 ESA (EIS, 2016) reported that the site may have operated as a service station and mechanics workshop in the 1950s, with the potential presence of underground and aboveground storage tanks. Additional commercial activities, including mechanical repairs, welding and battery services, were reported to have occupied the site between 1941 and 1976. These uses presented a potential source of petroleum hydrocarbon and metal contamination.

4.1 Search of Contaminated Land Management Register (NSW EPA)

A search of the NSW EPA Contaminated Land Management record of notices for the Gordon area indicated no notices have been issued to the subject site. Furthermore, the listed sites on the register are situated at such a distance (greater than 200m), that they are not believed to have provided a potential contamination risk to the subject property.

4.2 Search of Protection of the Environment Operations Public Register (POEO) of Licensed and Delicensed Premises

A search of the POEO public register of licensed and delicensed premises (DECC) indicated the subject site is not listed. Furthermore, the listed sites on the register are situated at such a distance (greater than 200m), that they are not believed to have provided a potential contamination risk to the subject property.

5.0 PRELIMINARY CONCEPTUAL SITE MODEL

5.1 Sources of Contamination

From a review of previous investigations relating to the site (EI Australia DGI and RAP), contamination has been identified within imported fill material at two primary areas of environmental concern. Localised PAH, TRH and metal exceedances were detected at discrete depths within fill, and carcinogenic PAHs were identified at TP101.

Onsite Sources of Contamination:

- AEC-1, carcinogenic PAH impacted fill at TP101 at approximately 3.0mBGL; and
- AEC-2 heavy metal, TRH and PAH impacted fill associated with imported fill within the central-eastern portion of the site, including TP108 (0.3mBGL), BH105 (3.0 BGL) and BH105 (4.4mBGL).

5.1.1 Contaminants of Potential Concern (CoPC)

Contaminants of Potential Concern (CoPC) associated with the soil material onsite are:

- Primary source (soils) – Overlying fill material – PAHs.
- Primary source (soils) – Overlying fill material – Heavy Metals, TRHs.

5.2 Potential Pathways

The pathways through which contaminants may reach receptors are in part dependent by the nature and behavior of the contaminant. Considering the potential contamination sources and the likely subsurface conditions to be encountered, the following potential pathways have been identified, taking into account the development plan:

- Direct dermal contact;
- Incidental ingestion;
- Inhalation of particulate matter (dust);
- Inhalation of vapours; and
- Dissolution or suspension (leaching) from soils to groundwater; and
- Ecological exposure to impacted soil and groundwater
- Ingestion of impacted biota (terrestrial or aquatic);

5.3 Receptors

The potential receptors for the contaminants of concern are:

- Site workers (acute / short term risks);
- Future site users (including residential);
- Residents and land users near the site;
- Recipients receiving material transported from site; and

- Groundwater and adjacent easement which feed to Nattai River.

5.4 Preliminary Conceptual Model

The identified potential contaminant sources, pathways and receptors have been assessed to establish plausible pollutant linkages:

- Dermal contact with impacted soils from exported material recipients;
- Dermal contact with impacted soils during construction by site workers;
- Dermal contact with impacted groundwater/surface water during construction by site workers;
- Incidental ingestion of impacted soils during construction by site workers;
- Incidental ingestion of impacted groundwater/surface water during construction by site workers;
- Inhalation of particulate matter (asbestos or contaminated soil) by future site users and from exported material recipients;
- Inhalation of particulate matter (asbestos or contaminated soil) during construction by site workers;
- Inhalation of volatile contaminant/s from soil/groundwater by future site users (indoor and outdoor) and from exported material recipients;
- Inhalation of volatile contaminant/s from soil/groundwater by site workers during construction (indoor and outdoor);
- Pollution of surface water and subsequent receiving water bodies could occur as a result of leachable contaminants impacting generated surface water.

In summary, a number of potential pollutant linkages are present, which require further assessment.

Local stormwater systems are not considered to contribute to potential contamination migration from the identified site contaminants as, from previous site investigations, contaminants contained to within discrete fill horizons and are to be remediated during this investigation.

6.0 DATA GAP ANALYSIS

Data gaps identified during site investigation works have been incorporated and presented below:

- During intrusive works at BH104, excavation to 0.2 m below the depth of the reported B(a)P impact could not be completed due to a concrete slab extending to the site boundary. Further excavation would have undermined the adjacent footpath and potentially the Pacific Highway, as the location was within the zone of influence of the proposed hot spot excavation.

The B(a)P concentration at BH104 was low and, when assessed using the 95% UCL statistical calculation, remained within the adopted site acceptance criteria; however, further inspection and assessment of this location will be undertaken during proposed bulk excavation works as a due diligence measure.

- No other significant data gaps were identified, as the imported fill within AEC-1 and AEC-2 has been assessed and remediated in general accordance with the RAP and NEPM.

The data gaps identified are relatively minor and do not affect the conclusions of this Stage 4 Remediation and Validation Report. Any additional information obtained during future excavation will be used to confirm the suitability of material to remain onsite or to classify any surplus material for offsite disposal.

7.0 DATA QUALITY OBJECTIVES

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

Step 1 – State The Problem

Step 1 comprises a summary of new environmental data required and identifies the resources required resolve onsite contamination where encountered. From past site investigations, the problem at the site, is the contamination identified in the surface material and overlying fill material from previous site operations and potential contamination of groundwater from potential leachable contaminants.

Additionally, as is the goal of this investigation, the analysis of validated material post remediation is to determine if remaining onsite material has been adequately assessed in accordance with NEPM and the RAP, and is suitable for the proposed development.

Step 2 – Identify The Decision

This step comprises the identification of decisions that need to be made about the proposed remaining onsite material, and the new environmental data required to make them.

- Have the identified areas of contamination been treated in accordance with the RAP before any construction works commence?
- After site excavation works, does the remaining onsite material contain levels of contaminants below the adopted assessment criteria?
- If contaminants are present in soil above the relevant guideline criteria does a complete source – exposure pathway – receptor link exist, or will exist during and following the proposed development works?
- Following potential conformance with NEPM assessment criteria, has the remediated material been analysed in accordance with NEPM and the RAP?
- What further investigation or remediation works should be carried out to remove/manage the identified complete source – exposure pathway – receptor linkages?

Step 3 – Identify Inputs into The Decision

This step involves the identification of the information required to support any decision and whether any new environmental data will be required. Relevant inputs include:

- Relevant existing soil data from previous environmental site assessments and investigations;
- New soil laboratory analytical data collected, field observations and measurements made during field work;
- Potential receptors impacted onsite and by offsite contamination migration;
- Exposure pathways for onsite and offsite contamination as a result of proposed site works and existing site contamination;
- The contaminants of concern are as follows:
    - PAHs
    - TRHs and Heavy Metals impacted soil.
- Adopted assessment criteria presented in the National Environment Protection Council (NEPC) National Environment Protection Measure (Assessment of Site Contamination) 2013 criteria relevant for the proposed site works are presented in Section 11.

Step 4 – Define the Study Boundaries

This step involves the spatial and temporal aspects of the environmental media that the data must represent to support the decision(s).

- Lateral – The physical site boundaries and investigation area at 810 Pacific Highway, Gordon NSW, Lot 12 in Deposited Plan 631351, as shown on Figure 1.
- Vertical – Based on the depth of excavations at the site, estimated to be maximum 3.2m below existing surface level, or as determined based upon visual/olfactory assessment of material;
- Temporal – The proposed validation works involves the collection of sampling at the judgmentally based locations. As a result, it will be representative of a single moment in time and as such, will be subject to climatic and anthropogenic activities at the particular sampling location(s).

Step 5 – Develop The Analytical Approach

This step comprises defining relevant parameters, specifying appropriate actions/methodology to be taken during site works and reporting procedures, and material analysis relating to material conformance.

A decision on the acceptance of the analytical data will be made on the basis of:

- Only qualified and trained staff are to undertake sampling and investigations;
- Accuracy of analytical data obtained during onsite sampling;
- Accurate description of material sampled, including sample location and sample number identified within reports;
- That data is representative of material analysed;
- Inclusion of chain of custody documents and laboratory data from NATA accredited laboratories;

- Confirmation that test reports and analytical data from samples obtained comply with test methods, requirements and sampling procedures in accordance with NEPM; and
- Completeness of the amount of useable data from data collection activity.

- To conclude the decision, the assessment decision rules must be met. The results of sampling and analysis of soil must meet the following criteria:
  - National Environment Protection Council (NEPC) National Environment Protection Measure (Assessment of Site Contamination) 2013;
  - The calculated 95% Upper Confidence Level value (95% UCL) for material analysed do not identify concentrations in excess of the adopted assessment criteria; and
  - Any material disposed offsite has been classified in accordance with NSW EPA Waste Classification Guidelines (2014).

Step 6 – Specify Performance or Acceptance Criteria

This step involves specifying the decision-maker's acceptable limits on decision errors.

The acceptable limits on decision errors to be applied in the investigation have been developed based on Data Quality Indicators of precision, accuracy, representativeness, comparability and completeness in accordance with the National Environment Protection Council (NEPC) National Environment Protection Measure (Assessment of Site Contamination) 2013.

In determining if data supplied has met the requirements of section 9.0, the following will be assessed:

- Document completeness in accordance with section 9.0;
- Samples are collected in accordance with relevant procedures and by appropriately qualified personnel;
- The calculated 95% Upper Confidence Level value (95%UCL) for COPCs concentrations in analysed samples to remain onsite, should not exceed the adopted assessment criteria;
- No single analytical result for a COPC in material to remain onsite should exceed the adopted assessment criteria;
- Dataset standard deviation is to be less than half adopted assessment criteria value;
- Test reports are to comply with test methods, requirements and sampling procedures defined in the remedial action plan.
- Review of laboratory QA/QC data to confirm suitability of analytical data supplied; and
- Inconsistencies and/or non-conformances with approved test methods, including but not limited to material preparation and sampling, sample handling and holding times or any other input that may affect the outcome conformance with NEPM are to be documented and the client notified, with corrective action taken as appropriate.

Step 7 – Develop the Plan for Obtaining Data

The optimized program for the fieldwork for obtaining suitable data to meet the DQO is achieved by the following:

- Only competent experienced environmental consultants are to undertake field investigations, remediation and validation assessments;
- Detailed review of previous investigations, familiarity with their findings and outcomes, as well as familiarity with the RAP;
- Only NATA accredited laboratories are to be used in obtaining data from samples collected;
- Evaluation of laboratory Data Quality Indicators to assess reliability of data;
- Appropriate QA/QC samples collected in accordance with the National Environment Protection Council (NEPC) National Environment Protection Measure (Assessment of Site Contamination) 2013;
- Prepare a RAP, if appropriate, in the event of unexpected finds or new contaminants are identified.

8.0 FIELDWORK PROGRAMME

8.1 Pre-Approved Planning

Staff attending site were made familiar with relevant assessment criteria and previous site investigations, and NEPM to provide guidance on correct procedures relating to the assessment, analysis and classification of onsite material as part of validation works.

8.2 Site Inspection

A site walkover inspection of the entire site and remedial excavations were undertaken as part of the fieldwork programme. The walkover assessment was undertaken to identify:

- Any evidence of contamination identified from past site use;
- Any asbestos containing materials which may be present on surface/exposed material; and
- Any other non-conformance which will prevent the site conforming with the National Environment Protection Council (NEPC) National Environment Protection Measure (Assessment of Site Contamination) 2013.

No non-conformance or contamination was identified during the site inspection, with the exception of previously identified AECs.

8.3 SOIL SAMPLING PROGRAMME

8.3.1 Sample Requirements

AEC-1 – PAH Impacted Hot Spot Location - Samples will be collected from the exposed surface following offsite disposal of PAH impacted material at a minimum sampling frequency of:

- Base of Excavation- 1 sample per 5m^2. Minimum of 2 samples
- Walls of Excavation- 1 sample every 5 lateral meters, with an additional sample collected every 1m in excavation depth

AEC-2 – Heavy Metal, TRH and PAH Impacted Hot Spot Locations - Samples will be collected from the exposed surface following offsite disposal of impacted material at a minimum sampling frequency of:

- Base of Excavation- 1 sample per 5m^2. Minimum of 2 samples
- Walls of Excavation- 1 sample every 5 lateral meters, with an additional sample collected every 1m in excavation depth

Samples are to be collected using new pair of nitrile disposable gloves and analysed for contaminants detailed in section 5.1.1 above to confirm the successful removal of impacted material.

The validation analytical suite for the AECs should include as a minimum the following analytes:

- AEC #1 – PAHs
- AEC #2 – PAHs, TRHs and Heavy Metals

8.3.2 Sample Pattern

Sample locations were selected on a systematic pattern, to ensure representative coverage and suitable assessment of the in-situ material. If contamination, whether by staining, odours or visual indicators was observed, samples were targeted in the identified area to adequately document any contaminants above the adopted assessment criteria and accurately classify the onsite material.

8.3.3 Sample Depth

Samples were collected at 0.2m to 3.2m from exposed surface level.

8.3.4 Field Screening

Field screening of samples was carried out by a combination of olfactory and visual contamination indications such as odours, staining or the presence of asbestos etc. A representative amount of each fresh soil sample was placed into a zip lock plastic bag and the headspace analysed using a photo-ionisation detector (PID) to detect the presence of volatile organic compounds (VOCs BTEX).

8.3.5 Method of Sample Collection

Samples were collected in accordance with AS4482.1-2005 Guide to the Sampling and Investigation of Potentially Contaminated Soil. Care was taken to ensure that representative samples were obtained, and that the integrity was maintained, particularly when dealing with potentially volatile or semi-volatile compounds. Specific sampling procedures for each method of collection are provided below in following sections.

8.3.6 Sample Collection

Material from hot spot excavations were sampled using new nitrile gloves for each sample and placing the soil directly into laboratory supplied containers. Asbestos samples were placed into laboratory prepared asbestos grade bags. Samples were placed into a cooler for transport to Eurofins laboratory.

8.3.7 Decontamination Procedures

Sampling trowel equipment (where used) was decontaminated between sampling events using the following procedure:

1) Soil is removed from the trowel by scrubbing with a brush
2) The trowel is washed with phosphate free detergent in a bucket
3) The trowel is then rinsed in distilled water in another bucket
4) Steps 2 and 3 are to be repeated
5) The trowel is then dried with a clean disposable towel

8.3.8 Sample Containers

Soil sample containers comprised glass jars with Teflon lined lids, supplied by the laboratory, with asbestos samples placed into asbestos grade zip-lock bags. The containers were labelled with the unique project job number, unique sample number, the sampling date & time and the sampler details.

8.3.9 Method of Sample Storage and Handling

The samples were immediately placed in a cooler to keep the samples below a temperature of approximately 4ºC. At the end of each day, the samples in the cooler were transported to the laboratory. If sampling times didn't allow immediate transport to the laboratory, samples were transferred into a designated fridge to maintain the desired sample temperature.

8.3.10 Sample Logging and QA/QC Data

A log and description of samples collected was completed during fieldwork by the qualified environmental consultant. The log records the following data:

- Sample number and location;
- Sample conformance in accordance with NEPM;
- Time and date of sampling; and
- Sampler details.

All samples were classified in the field based on soil/groundwater. Characteristics and obvious signs of contamination, such as discolouration or odour were documented on the sample log where applicable.

All samples were transported to the laboratory under Chain-of Custody (COC) procedures and maintained in an ice-filled cooler. The following details were recorded on the COC form:

- Site identification;
- The sampler;
- Nature of the sample;
- Collection time and date; and
- Analyses to be performed;

8.4 Groundwater Sampling Programme

The Remedial Action Plan (EI Australia, 2025) identifies groundwater impacts based on previous investigations and includes groundwater monitoring requirements as part of the historical site characterisation. The RAP does not require groundwater sampling as part of the validation of soil remediation works. As groundwater was not intercepted during intrusive works completed for this validation assessment, no groundwater sampling was undertaken, and this is consistent with the requirements of the RAP.

9 QUALITY ASSURANCE AND QUALITY CONTROL PROGRAM (QA/QC)

The field sampling was undertaken by a suitably qualified environmental consultant, familiar with the RAP and National Environment Protection Council (NEPC) National Environment Protection Measure (Assessment of Site Contamination) 2013.

Quality Assurance and Quality Control methodology is detailed in:

- Australian Standard AS4482.1:2005 – Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil. Part 1: Non-volatile and Semi-Volatile Compounds;
- Australian Standard AS4482.2:1999 – Guide to the Sampling and Investigation of Potentially Contaminated Soil. Part 2: Volatile Substances.

9.1 FIELD QA/QC PROGRAMME

Field QA/QC consists of the application of documented quality work procedures and the associated receipt of submitted samples.

9.1.1 Field Sampling

The environmental samples collected for the investigation programme are representative samples of soil collected for analysis. Environmental samples are the original samples taken from a particular location. Field QA/QC samples (when collected for chemical analysis) were collected in accordance with NEPM at a rate of:

- 5% of samples as inter-laboratory duplicates;
- 5% of all samples as intra-laboratory duplicates;
- 1 trip blank sample per batch;
- 1 field rinsate sample of field equipment per day of sampling; and
- 1 trip spike sample per batch of volatiles.

Duplicate sample analytical data is to be assessed by calculating the relative percentage difference (RPD) of duplicate samples and comparing them to the below acceptance criteria:

- Results >10 times the practical quantitation limit (PQL)- RPDs <30% (inorganic) and <50% (organic) are acceptable;
- Results between 5-10 times PQL- RPDs <50% (inorganic) and <70% (organic) are acceptable;
- Results between <5 times PQL- RPDs <100% are acceptable; and
- An explanation is to be provided if RPD results are outside the acceptance criteria.

9.2 Duplicate Sampling

Samples collected, comprising asbestos quantitation sampling and minimal heavy metal sampling was all that was required to determine if the area of investigation has been successfully remediated, post-removal of impacted material. Duplicate samples were collected as part of this investigation in accordance with NEPM.

9.3 Reporting Requirements and Record Keeping

The generator of the exported material for offsite disposal must:

- Keep a record of the waste classification report(s) supplied as part of the validation material testing;
- All test results supplied, whether conforming or non-conforming to NEPM;
- Details of where the material was supplied, such as the name and address of the person supplied to.

9.4 LABORATORY QA / QC PROGRAMME

The reliability of test results from the analytical laboratories will be monitored according to the QA/QC data quality indicator (DQI) procedures used by the NATA accredited laboratory. The QA/QC programme employed by the NATA registered laboratories specifies sample tracking procedures, methods of extraction, analysis, practical quantitation limit (PQLs) and Limit of Reporting (LOR) for results. Laboratory QA/QC procedures adopted by the laboratories used in this investigation are summarised below.

The primary laboratory QA/QC results are to be compared to the below acceptance criteria, with non-compliance documented:

RPDs

- Results <5 times the PQL- any RPD is acceptable; and
- Results >5 times the PQL- RPDs 0-50% are acceptable;

LCS Recovery and Matrix Spikes

- 70-130% recovery acceptable for metals and inorganics;
- 60-140% recovery acceptable for organics; and
- 10-140% recovery acceptable for VOCs.

Surrogate Spike Recovery

- 60-140% recovery acceptable for general organics; and
- 10-140% recovery acceptable for VOCs.

Blanks

- All <PQL

9.4.1 Laboratory Duplicate Samples

Internal laboratory duplicates provide data on analytical precision for supplied samples. This is done in order to ensure reliability of data obtained and to provide comment on suitability of analytical data supplied and subsequent material classification.

9.4.2 Laboratory Control Samples

Laboratory control samples consist of a clean matrix (de-ionised water or clean sand) spiked with a known concentration of the analyte being measured. These samples monitor method recovery in clean samples and can also be used to evaluate matrix interference by comparison with matrix spikes. Laboratory control samples may be certified reference materials.

9.4.3 Surrogates

For organic analyses, a surrogate is added to environmental samples at the extraction stage in order to verify method effectiveness. The surrogate is then analysed with the batch of samples. Percent recovery is calculated.

9.4.4 Matrix Spike

A matrix spikes consist of samples spiked with a known concentration of the analyte being measured, in order to identify properties of the matrix that may hinder method effectiveness. Samples are spiked with concentrations equivalent to 5 to 10 times the PQL. Percent recovery is calculated.

Table 2 – RPDs

Laboratory	QC Type	QC Outliners Occur	QC Acceptance Criteria
Eurofins	Laboratory Blanks	No	Achieved
Eurofins	Laboratory Duplicates	Yes, 1	Achieved
Eurofins	Matrix Spikes	No	Achieved
Eurofins	Surrogate Spikes	No	Achieved

If RPDs are in excess of acceptance criteria, the higher concentration is adopted as a conservative measure to identify any contamination present onsite.

9.4.5 Laboratory Accreditation

Eurofins Australia Pty Ltd are accredited by the National Association of Testing Authorities (NATA) for the analysis carried out and are also accredited for compliance with ISO/IEC 17025.

9.4.6 Sample Holding Times

The holding times for samples at Eurofins presented in the table below, along with the allowable holding time, detailed in Schedule B (3) of the National Environment Protection (Assessment of Site Contamination) Measure (NEPM, 2013). Holding times are summarised as follows:

- Heavy Metals- 6 months
- TPH, PAH, BTEX- 14 days
- Mercury- 28 days
- VOCs- 14 days

Table 3 – Holding Times

Laboratory	Analyte	Date Sampled	Date Received	Date of Extraction/ Analysis	Holding Time	Allowable Holding Time
Eurofins	Metals	22-09-25 24-11-25	24-09-25 25-11-25	25-09-25 27-11-25	3 days	6 months*
Eurofins	Total Petroleum Hydrocarbons (TPH), PAH, BTEX	22-09-25 14-10-25 24-11-25	24-09-25 14-10-25 25-11-25	25-09-25 14-10-25 27-11-25	3 days 1 day 3 days	14 days

Note 1: (*) Metals exclude Mercury which has a holding time of 28 days.
Note 2: The soil sample analyses were conducted within the relevant allowable holding time.

9.4.7 Analytical Methods Used and Practical Quantitation Limits

The analytical methods and practical quantitation limits (PQL)/level of reporting (LOR) used by Eurofins are indicated on the test certificates located in Appendix C.

10.0 QUALITY ASSURANCE AND QUALITY CONTROL DATA EVALUATION

Quality Assurance and Quality Control have been achieved through the following procedures.

10.1 Document Completeness

- Preparation of chain of custody records
- Laboratory confirmation of receipt of intact samples and relevant chain of custody
- Laboratory provision of NATA accredited results certificates

10.2 Data Completeness

- Analysis of contaminants of concern
- Duplicate and split samples within RPD recommended by NEPM

10.3 Data Representativeness

This is achieved by the following:

- Representative sampling of potential contaminants based on the site history and site activities
- Sufficient duplicate and split sample numbers complying with NEPM
- Adequate laboratory internal QA and QC methods complying with NEPM

10.4 Data Comparability

- Use of consistent sampling personnel and methodologies
- Use of NATA accredited laboratories
- Use of consistent test methods between selected laboratories
- Use of consistent test methods between samples
- Acceptable RPD between original samples and duplicate and split sample results.

10.5 Data Precision and Accuracy

- The use of NATA accredited laboratories – a requirement of which is adequately trained and experienced staff.
- The use of appropriate and validated laboratory test methods.
- The analysis of duplicate and split samples.
- Acceptable RPD for duplicate and split samples overall.
- Acceptable laboratory performance based on results of blank, matrix spike, control, duplicate and surrogate samples.

10.6 Data Evaluation

Based on the above information regarding quality assurance and quality control, it is considered that the quality objectives for field procedures and laboratory results are reliable for this assessment.

Table 4 – Data Evaluation Summary

Data Quality Objectives	Field Considerations	Laboratory Considerations	QC Acceptance Criteria
Completeness	Achieved	Achieved	Achieved
Comparability	Achieved	Achieved	Achieved
Representativeness	Achieved	Achieved	Achieved
Precision	Achieved	Achieved	Achieved
Accuracy	Achieved	Achieved	Achieved

11.0 BASIS FOR ASSESSMENT CRITERIA

The VAC has been derived from The National Environment Protection Council (NEPC) National Environment Protection Measure (Assessment of Site Contamination) 2013. Additionally, Schedule B1 of NEPM documents the acceptance criteria for asbestos in soil (section 4.7 and 4.8).

The HIL and HSL have been adopted in accordance with NEPM, and are:

- HIL B − Residential with minimal accessible soil;
- HSL B − Residential with minimal accessible soil;
- EIL- Urban residential and public open space;
- ESL – Urban residential and public open space;
- Management Limits for TPH

Table 5 – Basis of Assessment

Contaminant	Assessment Criteria (mg/kg)				Guidelines
	Health Based Investigation/ Screening Level (HIL/HSL'B')	Ecological Investigation Levels (EIL's)	Ecological Screening Levels (ESL)	TPH Management Limits mg/kg	
Inorganics					
(Heavy Metals)					
Arsenic (total)	500	100			NEPM (2013)
Cadmium	150	-			NEPM (2013)
Chromium (VI)	500	415			NEPM (2013)
Copper	30000	830			NEPM (2013)
Lead	1200	1260			NEPM (2013)
Mercury	120	-			NEPM (2013)
Nickel	1200	-			NEPM (2013)
Zinc	60000	-			NEPM (2013)
Organics					
TPH					
C^6-C^{10}/C^{10}-C^{16}	50/280		180/120	800/1000	NSW EPA,
C^{16}-C^{34}/C^{34}-C^{40}	-		1300/5600	3500/10000	DECC 2009 &
Benzene	0.7		65		NEPM (2013)
Toluene	480		105		NEPM (2013)
Ethylbenzene	-		125		NEPM (2013)
Xylene	110		45		NEPM (2013)
Phenol	-				NEPM (2013)
PAH	400				NEPM (2013)
OCP					NEPM (2013)
Aldrin + Dieldrin	10				NEPM (2013)
Chlordane	90				NEPM (2013)
Heptachlor	10				
DDD+DDE+DDT	600				
OPP	-				See Note (a)
Diazinon	-				See Note (a)
Ethion	-				See Note (a)
Fenitrothion	-				
PCB	1				
Asbestos AF/FA	0.001%	-	-		NEPM (2013)
Asbestos Bonded	0.01%	-	-		NEPM (2013)

11.1 Classification for Offsite Disposal

The majority of contaminated sites have the potential to generate materials that are classified as waste under current NSW environmental legislation. The wastes generated on site, if any, must be managed in accordance with Best Industry Practices and current NSW relevant legislation, policies and guidelines. This will depend greatly on the end use of that waste.

All wastes, if required, will be assessed in accordance with the provisions of the POEO Act (1997) and its subordinate regulations, as well as relevant policies and guidelines, to ensure that the proposed handling and end use of such materials are consistent with NSW waste strategies, including the Circular Economy.

Materials being disposed offsite at a landfill facility will be assessed in accordance with EPA Waste Classification Guidelines 2014. Similarly, materials transported from the site for recovery at a resource recovery facility will be classified in accordance with EPA's Waste Classification Guidelines 2014.

Materials for re-use offsite, will be assessed against:

- The NSW EPA Waste Classification Guidelines 2014,
- And, where relevant, a Resource Recovery Order as specify within the Resource Recovery Framework.

12.0 LABORATORY TEST RESULTS

Test results are tabulated and presented below, along with the relevant assessment criteria. Laboratory test certificates are located in Appendix C.

Table 6 – Analysis Solid Samples collected

Contaminant	Maximum Concentration mg/kg	Health Based Investigation Levels/Screening HIL/HSL 'B' mg/kg	Ecological Investigation/ Screening Levels mg/kg	Absolute Maximum Analyte Criteria ENM Order 2014 mg/kg	95% Upper Confidence Limit (UCL)
Arsenic	4.7	500	100	40	4.0
Cadmium	<0.4	150	-	1	<0.4
Chromium	32	500	415	150	25.44
Lead	19	1200	1260	100	17.12
Mercury	0.2	120	-	1	0.15
Nickel	10	1200	-	60	9.26
Zinc	56	60000	-	300	46.63
Copper	15	30000	830	200	13.48
Benzene	<0.1	0.7	65	0.5	<0.1
Toluene	<0.1	480	105	65	<0.1
Xylenes (total)	<0.3	110	45	NA	<0.3
Benzo(a) Pyrene	<0.5	3	0.7	1	<0.5
Polynuclear Aromatic Hydrocarbons (PAH's)	1.3	300	-	40	0.9
Petroleum Hydrocarbon Components – C6-10	<20	50	180	NA	<20
Petroleum Hydrocarbon Components – C10-16	<50	280	120	500	<50
Pentachlorophenol	-	100	-	-	-
Total Cresol	-	400	-	-	-
Aldrin + Dieldrin	<0.05	6	-	-	<0.05
Chlordane	<0.1	50	-	-	<0.1
Heptachlor	<0.05	6	-	-	<0.05
DDD+DDE+DDT	<0.05	240	-	-	<0.05

Table 7: Asbestos Test Results

Samples Collected	Asbestos Detected	Type of Asbestos
1534.6.1 to 1534.6.6	No	NA

12.1 Heavy Metals

Heavy metal concentrations are presented in Table 6. The soil concentrations of all metals were compared to the relevant assessment criteria (HILs B). Metal concentrations were below the HILs A/EIL and site assessment criteria.

12.2 Total Petroleum Hydrocarbons (TPH), Polycyclic Aromatic Hydrocarbons (PAH) and BTEX

The TPH, PAH and BTEX concentrations, presented in Table 6, The first attempt at validation sampling identified further PAH contamination at sample locations 1534.4.6 and 1534.4.7. Additional excavation works and offsite disposal was undertaken, with subsequent samples (1534.4.41 to 1534.4.44) returning results confirming the successful remediation of hot spot excavations. Therefore, the TPH, PAH and BTEX concentrations, present in the soil layers are not considered likely to pose a risk to human health or the environment at the adopted exposure setting.

12.2 Asbestos Test Results

The Asbestos test results are presented in Table 7. No asbestos was detected within the samples obtained from the site, hence indicating the site is not contaminated with asbestos.

13.0 SITE CHARACTERISATION

As presented in Section 12.0 (Laboratory Test Results), the analytical results for the validation samples obtained from the site indicate that concentrations of contaminants of potential concern (CoPCs) remaining within the remediated areas are below the adopted assessment criteria in accordance with the proposed land use.

The analytical results confirm that the remediation of AEC-1 and AEC-2 was successfully completed in accordance with the Remedial Action Plan (EI Australia, 2025). Carcinogenic PAH impacts previously identified at TP101 (AEC-1) were removed, with validation samples indicating no exceedances of the relevant criteria. Heavy metal, TRH and PAH impacts at TP108 and BH105 (AEC-2) were similarly removed, with validation samples confirming compliance with the relevant assessment criteria.

No exceedances of the adopted Health Investigation Levels (HILs), Health Screening Levels (HSLs), Ecological Investigation Levels (EILs) or Ecological Screening Levels (ESLs) were detected in the remediated areas. All remaining onsite material analysed met the criteria for the proposed ‘Residential B’ setting, and no asbestos contamination was detected in any validation samples.

Based on the results of the validation sampling and comparison against the adopted assessment criteria, the remediated areas of the site do not pose a risk to human health or the environment and are suitable for the proposed development.

14.0 ONGOING SITE MONITORING

Based on the validation results presented in this report, no ongoing site monitoring is required. All contaminants of potential concern within AEC-1 and AEC-2 were removed in accordance with the Remedial Action Plan, and validation sampling confirmed that remaining soils meet the adopted assessment criteria for the proposed land use.

During intrusive works at BH104, excavation to the required depth could not be achieved due to a concrete slab extending to the boundary, and further excavation would have undermined the adjacent footpath and potentially the Pacific Highway. The reported B(a)P concentration at this location was low and remained within the adopted site acceptance criteria when applying the 95% UCL statistical calculation. As the material meets the required criteria, no further remediation is warranted; however, this location will be inspected during the proposed bulk excavation works as a due-diligence measure to confirm the absence of deeper impacts.

No additional monitoring or management measures are considered necessary following completion of the remediation and validation works.

15.0 CONCLUSION AND RECOMMENDATIONS

The conclusion of this Stage 4 Remediation and Validation Assessment is as follows:

- Objectives in section 2.0 have been achieved.
- The results of the analyses for the soils on site have indicated no contamination is present.
- The data quality objectives of the report have been fulfilled.

15.1 Remedial Works Undertaken

The AEC assessed during the investigation which have been addressed are:

- AEC-1, PAH impacted soils from sample locations TP101 obtained from within 3.2mBGL. Hot Spot excavation works were undertaken and impacted soil was disposed offsite as Restricted Solid Waste. The walls and base were assessed in accordance with section 8.3.1 above.
- AEC-2, TRH and Heavy Metal impacted soil from sample locations BH105 and TP108 obtained from within 3.2mBGL. Hot Spot excavation works were undertaken and the impacted soil was disposed offsite. The walls and base were assessed in accordance with section 8.3.1 above.

15.2 Staging of Remedial Works

Remedial works undertaken at the site were in general accordance with section 7 of the RAP. The AECs identified were remediated as per the RAP.

15.3 Material Disposal

Excavated material removed from site was taken to:

- BMI Redbank (QLD) - Restricted Solid Waste
- MET Recycling (EPL20948) – General Solid Waste

15.4 Conclusion of Remedial Works Undertaken

Based on the scope of works undertaken, Coleman and Adams are of the opinion that the contaminants identified at the site, post remediation and validation works, pose no risk to human health and/or the environment for the exposure setting; 'Residential' ('B') which is considered suitable for the proposed development.

This report was carried out in accordance with current NSW EPA guidelines; however, it is possible that contaminated soils may be present between sampling locations.

Asbestos assessments, investigations and sampling were conducted by M. Tofler, Licensed Asbestos Assessor (LAA001351), and Jeff Lu (M.E.E.).

16.0 Limitations

CAE has performed its services for this project in accordance with current industry codes and practices. When assessing the nature and extent of contamination, this type of investigation (as per our commission) is not designed or capable of locating all ground conditions, (which can vary even over short distances).

The advice given in this report is based on the assumption that the test results are representative of the overall ground conditions. However, it should be noted that actual conditions in some parts of the site might differ from those found. If excavations reveal ground conditions significantly different from those shown in our findings, CAE must be consulted.

The actual presence of contaminated material at the site may potentially differ from that referred to or inferred herein, since no sampling program, no matter how complete, can reveal all anomalies and hot spots that may be present. Furthermore, our opinions and judgments expressed herein, which are based on our analysis of current industry codes and practices, should not be interpreted as legal opinions.

The scope and the period of CAE services are described in the report and are subject to restrictions and limitations. CAE did not perform a complete assessment of all possible conditions or circumstances that may exist at the Site. If a service is not expressly indicated, do not assume it has been provided. If a matter is not addressed, do not assume that any determination has been made by CAE in regard to it. Where data has been supplied by the client or a third party, it is assumed that the information is correct unless otherwise stated. No responsibility is accepted by CAE for incomplete or inaccurate data supplied by others.

Any drawings or figures presented in this report should be considered only as pictorial evidence of our work. Therefore, unless otherwise stated, any dimensions should not be used for accurate calculations or dimensioning.

Should you have any queries, please do not hesitate to contact the undersigned.

For and on behalf of
Coleman and Adams Environmental Pty Ltd

M.Tofler
Principal
LAA001351

References

Contaminated Sites – Guidelines for Assessing Former Orchards and Market Gardens. Department of Environment and Conservation (NSW) 2005.

Contaminated Sites – Guidelines for Assessing Service Stations. NSW Environment Protection Authority (EPA) 1994

Contaminated Sites – Guidelines for Consultants Reporting on Contaminated Sites. NSW Environment Protection Authority (EPA) 2020.

Contaminated Sites – Sampling Design part 1 – application to land Guidelines. NSW Environment Protection Authority (EPA) 2022

Managing Land Contamination: Planning Guidelines SEPP55 – Remediation of Land - Department of Urban Affairs and Planning and Environment Protection Authority (DUAP and EPA) 1998.

State Environmental Planning Policy No 55 – Remediation of Land – Environmental Planning and Assessment Act 1979

National Environment Protection (Assessment of Site Contamination) Measure – National Environmental Protection Council 2013.

AS4482.1-2005 Guide to the Sampling and Investigation of Potentially Contaminated Soil Part 1

Protection of the Environment Operations Act 1997 – NSW EPA

Contaminated Land Management Act 1997 – NSW EPA

Protection of the Environment Operations (Waste) Regulation 2014 – NSW EPA

Waste Classification Guidelines – Part: Classifying Waste – NSW EPA 2014

Guidelines for the Assessment and Management of Groundwater Contamination – NSW DEC 2007

Protection of the Environment Operations (Underground Petroleum Storage Systems Regulation) 2014 and DECCW (2009) Guidelines for Implementing the POEO (Underground Petroleum Storage Systems) Regulation 2008.

EI Australia Pty Ltd *Remedial Action Plan*: 810 Pacific Hwy, Gordon NSW (Ref E26674.E06.Rev0)

EI Australia Pty Ltd *Data Gap Investigation*: 810 Pacific Hwy, Gordon NSW (Ref E26674.E03.Rev0)

Site Conditions and Removal of Impacted Material

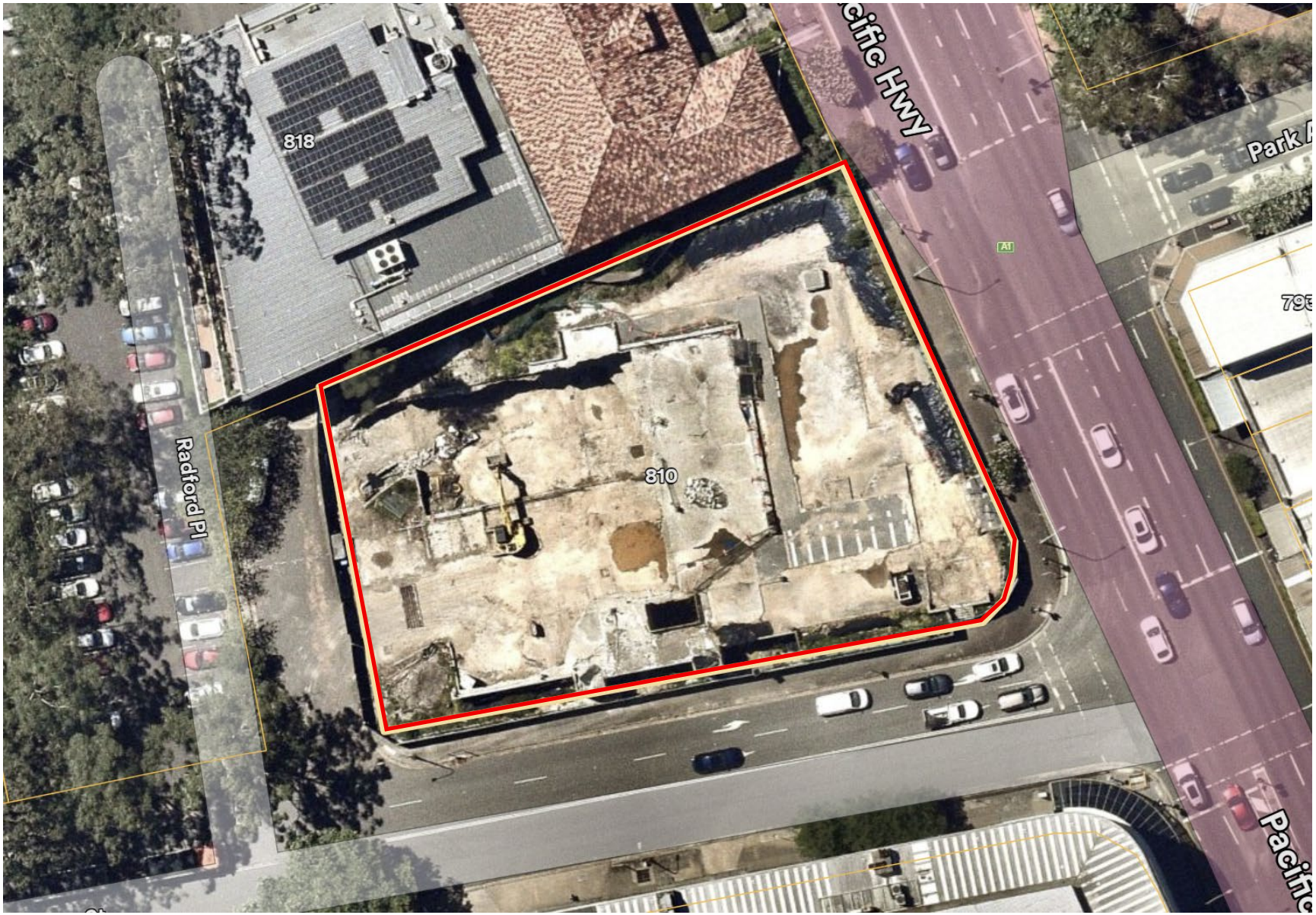
Example of Hot Spot Excavations

Site Conditions Post Removal of AEC Material

APPENDIX A

FIGURES

Bore Hole/Test Pit Locations and Drawings



Coleman & Adams ENVIRONMENTAL	N	Drawn By: MT	810 Pacific Hwy, Gordon NSW	Approximate Site Boundary
Project No. CAE1534		Scale: NTS	Site Layout	
Client: AKA Contractors Pty Ltd				

LEGEND Note: Areas are approximate

- Site Boundary
- Basement Boundary
- TfNSW Dedicated Area for Future Developement
- Soil Vapour Locations (EI, 2025)
- Test Pit Location (EI, 2025)
- Groundwater Monitoring Well Location (EIS, 2016a)
- Groundwater Monitoring Well (JK, 2025)
- Borehole Location (EIS, 2016a)
- Borehole Location (EIS, 2016a)
- Borehole Location (Geotechnique, 2022)

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Ph (02) 9516 0722 Fax (02) 9518 5088

Drawn:	M.O.
Approved:	C.W.
Date:	11/04/2025

AKA Industries Pty Ltd
Data Gap Investigation
810 Pacific Highway, Gordon NSW
Groundwater Contour Figure

Figure: 2

Project: E26674.E03

Coleman & Adams ENVIRONMENTAL	N	Drawn By: MT	810 Pacific Hwy Gordon NSW
Project No. CAE1534		Scale: NTS	Site Layout- EI Previous Investigation
Client: AKA Contractors Pty Ltd			

Coleman & Adams ENVIRONMENTAL	N	Drawn By: JL	810 Pacific Hwy Gordon NSW	Sample Location Hot Spot
Project No. CAE1534		Scale: NTS	Site Layout	
Client: AKA Contractors Pty Ltd				

Coleman Adams Environmental	N	Drawn By: MT	810 Pacific Hwy, Gordon NSW	⊕ Sample Location
Project No. CAE1534.6		Scale: NTS	Site Layout	
Client: AKA Contractors Pty Ltd				

APPENDIX B

LABORATORY DATA SUMMARY

Project Number:	CAE1534
Site Address:	810 Pacific Hwy, Gordon NSW
Client Name:	AKA Contractors Pty Ltd

	1534.4.1	1534.4.2	1534.4.3	1534.4.4	1534.4.5	1534.4.6	1534.4.7	1534.4.8	1534.4.9	1534.4.10
Soil Sample ID										
Benzo(a)Pyrene	0.7	<0.5	<0.5	<0.5	<0.5	1.5	1.2	<0.5	<0.5	<0.5
Total TRH	-	-	-	-	-	-	-	-	-	-
Chromium	-	-	-	-	-	-	-	-	-	-

	1534.4.11	1534.4.12	1534.4.13	1534.4.14	1534.4.14QA	1534.4.14QC	1534.4.15	1534.4.16	1534.4.17	1534.4.18	1534.4.19	1534.4.20
Soil Sample ID												
Benzo(a)Pyrene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total TRH	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	-	-	-	-	-	-	-	-	-	-	-	-

	1534.4.21	1534.4.22	1534.4.23	1534.4.24	1534.4.25	1534.4.26	1534.4.27	1534.4.28	1534.4.29	1534.4.30
Soil Sample ID										
Benzo(a)Pyrene	-	-	-	-	-	-	-	-	-	-
Total TRH	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50
Chromium	-	-	-	-	-	-	-	-	-	-

	1534.4.31	1534.4.32	1534.4.33	1534.4.34	1534.4.34QA	1534.4.34QC	1534.4.35	1534.4.36	1534.4.37	1534.4.38	1534.4.39	1534.4.40
Soil Sample ID												
Benzo(a)Pyrene	-	-	-	-	-	-	-	-	-	-	-	-
Total TRH	<50	<50	<50	<50	<50	<50	-	-	-	-	-	-
Chromium	-	-	-	-	-	-	56	89	62	47	70	120

Project Number:	CAE1534
Site Address:	810 Pacific Hwy, Gordon NSW
Client Name:	AKA Contractors Pty Ltd

	1534.4.41	**1534.4.42**	**1534.4.43**	**1534.4.44**
Soil Sample ID				
Benzo(a)Pyrene	<0.5	<0.5	<0.5	<0.5

Project Number:	CAE1534
Site Address:	810 Pacific Hwy, Gordon NSW
Client Name:	AKA Contractors Pty Ltd

Absolute Maximum Analyte Criteria ENM Order
General Solid Waste
Restricted Solid Waste
Hazardous Waste
HSL/HIL B
EIL/ESLs

Waste Classification	**Heavy Metals (mg/kg)**								**PAH (mg/kg)**		**pH**	**Electrical Conductivity**	**Asbestos**
	Arsenic **As**	Cadmium **Cd**	Chromium **Cr**	Copper **Cu**	Lead **Pb**	Mercury **Hg**	Nickel **Ni**	Zinc **Zn**	Benzo (a) Pyrene	Total PAH		dS/m	
Absolute Maximum Analyte Criteria ENM	40	1	150	200	100	1.0	60	300	1.0	40	4.5-10	3.0	Detect/Non-Detect
General Solid Waste	100	20	100	-	100	4	40	-	0.8	200	-	-	
Restricted Solid Waste	400	80	400	-	400	16	160	-	3.2	800	-	-	
Hazardous Waste	>2000	>400	>7600	-	>6000	>200	>4200	-	>3.2	>800	-	-	
Exceeds HIL B	500	150	500	30000	1200	120	1200	60000	4	400	-	-	
Exceeds EIL/ESL	100	-	415	830	1260	-	-	-	0.7	-	-	-	
Soil Sample ID													
1534.6.1	3.5	<0.4	18	12	16	0.1	7.8	34	<0.5	1.3	7.1	0.32	Non-Detect
1534.6.2	4.7	<0.4	18	13	16	0.2	9.2	56	<0.5	<0.5	8.1	0.33	Non-Detect
1534.6.3	3.0	<0.4	11	8.2	8.5	<0.1	6.7	23	<0.5	<0.5	8.4	0.37	Non-Detect
1534.6.4	3.6	<0.4	23	15	19	<0.1	8.5	46	<0.5	<0.5	8.6	0.26	Non-Detect
1534.6.5	2.8	<0.4	14	11	13	<0.1	7.2	31	<0.5	<0.5	8.7	0.24	Non-Detect
1534.6.6	2.9	<0.4	32	10	12	<0.1	10	30	<0.5	<0.5	8.6	0.23	Non-Detect

Waste Classification	**Petroleum Hydrocarbons (mg/kg)**				**BTEX (mg/kg)**					**Pesticides (** mg/kg)		**PCB**
	C10-C14	C15-C28	C29-C36	Total C10-C36	C6-C9	Benzene	Toluene	Ethyl Benzene	Xylene	OCP	OPP	mg/kg
Absolute Maximum Analyte Criteria ENM Order	-			500	-	0.5	65	25	15	-		
General Solid Waste	-			10000	650	10	288	600	1000	-		
Restricted Solid Waste	-			40000	2600	40	1152	2400	4000	-		
Hazardous Waste	-			>40000	>2600	>40	>1152	>2400	>4000	-		
Exceeds HIL B	-			-	-	0.7	480	-	110	-		1
Exceeds EIL/ESL	-			-	-	65	105	125	45	-		
Soil Sample ID												
1534.6.1	<20	<50	<50	<50	<20	<0.1	<0.1	<0.1	<0.3	-	-	-
1534.6.2	<20	<50	<50	<50	<20	<0.1	<0.1	<0.1	<0.3	<0.1	<2	<0.1
1534.6.3	<20	<50	<50	<50	<20	<0.1	<0.1	<0.1	<0.3	-	-	-
1534.6.4	<20	<50	<50	<50	<20	<0.1	<0.1	<0.1	<0.3	<0.1	<2	<0.1
1534.6.5	<20	<50	54	54	<20	<0.1	<0.1	<0.1	<0.3	-	-	-
1534.6.6	<20	<50	<50	<50	<20	<0.1	<0.1	<0.1	<0.3	<0.1	<2	<0.1

APPENDIX C

LABORATORY TEST CERTIFICATES

CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

☐ Sydney Laboratory
Unit F3 Bld.F 16 Mars Road Lane Cove West NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com

☐ Brisbane Laboratory
Unit 1 21 Smallwood Place Murarrie QLD 4172
07 3902 4600 EnviroSampleQLD@eurofins.com

☐ Perth Laboratory
Unit 2 91 Leach Highway Kewdale WA 6105
08 9251 9600 EnviroSampleWA@eurofins.com

☐ Melbourne Laboratory
6 Monterey Road Dandenong South VIC 3175
03 8564 5000 EnviroSampleVic@eurofins.com

Company	Coleman Adams Environmental	Project №	1534.4	Project Manager	
Address		Project Name		EDD Format (ESdat, EQuIS etc)	
Contact Name	J Chen				
Phone №					
Special Directions					
Purchase Order	NSW-24-0157-COL				
Quote ID №					

Sampler(s)	J Lu				
Handed over by					
Email for Invoice					
Email for Results	enviro@colemanadams.com.au				

Analyses
Where metals are requested please specify Total or 'Filtered'. SUITE codes must be used to attract SUITE pricing.

Containers
Change container type & size if necessary.

Required Turnaround Time (TAT)
Default will be 5 days if not ticked.

♦Surcharge will apply
☐ Overnight (reporting by 9am)♦
☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☑ 5 days (Standard)
☐ Other( )

№	Client Sample ID	Sampled Date/Time dd mm/yy hh:mm	Matrix Solid (S) Water (W)	Benzo (a) Pyrene	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	1534.4.1	22.09.2025	s	✓									
2	1534.4.2	22.09.2025	s	✓									
3	1534.4.3	22.09.2025	s	✓									
4	1534.4.4	22.09.2025	s	✓									
5	1534.4.5	22.09.2025	s	✓									
6	1534.4.6	22.09.2025	s	✓									
7	1534.4.7	22.09.2025	s	✓									
8	1534.4.8	22.09.2025	s	✓									
9	1534.4.9	22.09.2025	s	✓									
10	1534.4.10	22.09.2025	s	✓									
	Total Counts												

Method of Shipment	☐ Courier (#)	☐ Hand Delivered	☐ Postal	Name		Signature		Date		Time	

Laboratory Use Only	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date	24/9	Time	5:35pm	Temperature	13.8C
	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Report №	

Eurofins Environment Testing Australia Pty Ltd

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | Environment Testing Standard Terms and Conditions unless agreed otherwise. A copy is available on request.

2S3000_R10 Modified by: Dr. R Symons Approved by: G. Jackson Approved on: 9 August 2019

#1272453

CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

☐ **Sydney Laboratory** Unit F3 Bld.F 16 Mars Road Lane Cove West NSW 2066 02 9900 8400 EnviroSampleNSW@eurofins.com

☐ **Brisbane Laboratory** Unit 1 21 Smallwood Place Murarrie QLD 4172 07 3902 4600 EnviroSampleQLD@eurofins.com

☐ **Perth Laboratory** Unit 2 91 Leach Highway Kewdale WA 6105 08 9251 9600 EnviroSampleWA@eurofins.com

☐ **Melbourne Laboratory** 6 Monterey Road Dandenong South VIC 3175 03 8564 5000 EnviroSampleVic@eurofins.com

Company	Coleman Adams Environmental	Project №	1534.4	Project Manager	
Address		Project Name		EDD Format (ESdat, EQuIS etc)	
Contact Name	J Chen				
Phone №					
Special Directions					
Purchase Order	NSW-24-0157-COL				
Quote ID №					

Sampler(s)	J Lu
Handed over by	
Email for Invoice	
Email for Results	enviro@colemanadams.com.au

Analyses (Where metals are requested, please specify Total or Filtered. SUITE: only must be used to attract SUITE pricing)

№	Client Sample ID	Sampled Date/Time (dd/mm/yy hh:mm)	Matrix (Soil: S, Water: W)	Benzo (a) Pyrene	Containers (Change container type & size if necessary.) 500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
11	1534.4.11	22.09.2025	s	✓									
12	1534.4.12	22.09.2025	s	✓									
13	1534.4.13	22.09.2025	s	✓									
14	1534.4.14	22.09.2025	s	✓									
15	1534.4.15	22.09.2025	s	✓									
16	1534.4.16	22.09.2025	s	✓									
17	1534.4.17	22.09.2025	s	✓									
18	1534.4.18	22.09.2025	s	✓									
19	1534.4.19	22.09.2025	s	✓									
20	1534.4.20	22.09.2025	s	✓									
	Total Counts												

Required Turnaround Time (TAT) Default will be 5 days if not ticked.

♦Surcharge will apply

- ☐ Overnight (reporting by 9am)♦
- ☐ Same day♦ ☐ 1 day♦
- ☐ 2 days♦ ☐ 3 days♦
- ☑ 5 days (Standard)
- ☐ Other( )

Method of Shipment: ☐ Courier (#) ☐ Hand Delivered ☐ Postal

Name | Signature | Date | Time

Laboratory Use Only

Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Temperature		
Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Report №		

24 85

CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

☐ **Sydney Laboratory** Unit F3 Bld.F 16 Mars Road Lane Cove West NSW 2066 02 9900 8400 EnviroSampleNSW@eurofins.com

☐ **Brisbane Laboratory** Unit 1 21 Smallwood Place Murarrie QLD 4172 07 3902 4600 EnviroSampleQLD@eurofins.com

☐ **Perth Laboratory** Unit 2 91 Leach Highway Kewdale WA 6105 08 9251 9600 EnviroSampleWA@eurofins.com

☐ **Melbourne Laboratory** 6 Monterey Road Dandenong South VIC 3175 03 8564 5000 EnviroSampleVic@eurofins.com

Company	Coleman Adams Environmental	Project №	1534.4	Project Manager	
Address		Project Name		EDD Format (Estat, EQuIS etc.)	
Contact Name	J Chen				
Phone №					
Special Directions					
Purchase Order	NSW-24-0157-COL				
Quote ID №					

Sampler(s)	J Lu	
Handed over by		
Email for Invoice		
Email for Results	enviro@colemanadams.com.au	

Analyses — Where metals are required please specify "Total" or "Filtered". SUITE code must be used to attach SUITE pricing.

Containers — Change container type & size if necessary

Required Turnaround Time (TAT) — Default will be 5 days if not ticked.

♦Surcharge will apply

☐ Overnight (reporting by 9am)♦
☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☑ 5 days (Standard)
☐ Other( )

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S), Water (W)	Total TRH	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
21	1534.4.21	22.09.2025	S	✓									
22	1534.4.22	22.09.2025	S	✓									
23	1534.4.23	22.09.2025	S	✓									
24	1534.4.24	22.09.2025	S	✓									
25	1534.4.25	22.09.2025	S	✓									
26	1534.4.26	22.09.2025	S	✓									
27	1534.4.27	22.09.2025	S	✓									
28	1534.4.28	22.09.2025	S	✓									
29	1534.4.29	22.09.2025	S	✓									
30	1534.4.30	22.09.2025	S	✓									
	Total Counts												

Method of Shipment: ☐ Courier (#) ☐ Hand Delivered ☐ Postal | Name | Signature | Date | Time

Laboratory Use Only							
Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Temperature		
Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Report №		

Eurofins Environment Testing Australia Pty Ltd

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263009_R16 Modified by: Dr R Symons Approved by: C Jackson Approved on: 8 August 2019

CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

☐ **Sydney Laboratory** Unit F3 Bld.F 16 Mars Road Lane Cove West NSW 2066 02 9900 8400 EnviroSampleNSW@eurofins.com

☐ **Brisbane Laboratory** Unit 1 21 Smallwood Place Murarrie QLD 4172 07 3902 4600 EnviroSampleQLD@eurofins.com

☐ **Perth Laboratory** Unit 2 91 Leach Highway Kewdale WA 6105 08 9251 9600 EnviroSampleWA@eurofins.com

☐ **Melbourne Laboratory** 6 Monterey Road Dandenong South VIC 3175 03 8564 5000 EnviroSampleVic@eurofins.com

Company	Coleman Adams Environmental	Project №	1534.4	Project Manager	
Address		Project Name		EDD Format (Esdat, EQuIS etc)	
Contact Name	J Chen				
Phone №					
Special Directions					
Purchase Order	NSW-24-0157-COL				
Quote ID №					

| | | | | |

CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

☐ **Sydney Laboratory** Unit F3 Bld.F 16 Mars Road Lane Cove West NSW 2066 02 9900 8400 EnviroSampleNSW@eurofins.com

☐ **Brisbane Laboratory** Unit 1 21 Smallwood Place Murarrie QLD 4172 07 3902 4600 EnviroSampleQLD@eurofins.com

☐ **Perth Laboratory** Unit 2 91 Leach Highway Kewdale WA 6105 08 9251 9600 EnviroSampleWA@eurofins.com

☐ **Melbourne Laboratory** 6 Monterey Road Dandenong South VIC 3175 03 8564 5000 EnviroSampleVic@eurofins.com

Company	Coleman Adams Environmental	Project №	1534.4	Project Manager	
Address		Project Name		EDD Format (ESdat, EQuIS etc)	
Contact Name	J Chen				
Phone №					
Special Directions					
Purchase Order	NSW-24-0157-COL				
Quote ID №					

Sampler(s)	J Lu				
Handed over by					
Email for Invoice					
Email for Results	enviro@colemanadams.com.au				

Containers (Change container type & size if necessary.)

Required Turnaround Time (TAT) (Default will be 5 days if not ticked.)

♦Surcharge will apply

☐ Overnight (reporting by 9am)♦
☐ Same day♦ ☐ 1 day♦
☐ 2 days♦ ☐ 3 days♦
☑ 5 days (Standard)
☐ Other( )

Analyses (Where multiple analytes are required, please specify TEXT or 'Analyte' SUITE code must be used to attach SUITE group)

№	Client Sample ID	Sampled Date/Time (dd mm/yy hh:mm)	Matrix (Solid (S), Water (W))	Benzo (a) Pyrene	Total TRH	BTEX	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
11	1534.4.14QA	22.09.2025	S	✓											
12	1534.4.14QC	22.09.2025	S	✓											Melbourne Lab
13	1534.4.34QA	22.09.2025	S		✓										
14	1534.4.34QC	22.09.2025	S		✓										Melbourne Lab
15	Trip Blank					✓									
16	Trip Spike					✓									
17															
18															
19															
20															
	Total Counts														

Method of Shipment: ☐ Courier (#) ☐ Hand Delivered ☐ Postal | Name | Signature | Date | Time

Laboratory Use Only

Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Temperature	
Received By	SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature	Date	Time	Report №	

Eurofins Environment Testing Australia Pty Ltd

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | Environment Testing Standard Terms and Conditions unless agreed otherwise. A copy is available on request.

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofinsanz.com

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

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	+61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370 & 2554

Sample Receipt Advice

Company name:	Coleman and Adams Environmental Pty Ltd
Contact name:	Joanna Chen (ALL SRA'S)
Project name:	Not provided
Project ID:	1534.4
Turnaround time:	5 Day
Date/Time received	Sep 24, 2025 5:35 PM
Eurofins reference	1272453

Sample Information

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

Notes

QCs logged in report #1272457
Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

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

Irem Haskara on phone : 61+ 428 995 496 or by email: Irem.Haskara@eurofinsanz.com

Results will be delivered electronically via email to Joanna Chen (ALL SRA'S) - joanna@colemanadams.com.au.

Global Leader - Results you can trust

Coleman and Adams Environmental Pty Ltd
PO Box R1370
The Royal Exchange
NSW 1255

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Joanna Chen (ALL SRA'S)**

Report **1272453-S**
Project name
Project ID 1534.4
Received Date Sep 24, 2025

Client Sample ID			**1534.4.1**	**1534.4.2**	**1534.4.3**	**1534.4.4**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S25-Se0077184**	**S25-Se0077185**	**S25-Se0077186**	**S25-Se0077187**
Date Sampled			**Sep 22, 2025**	**Sep 22, 2025**	**Sep 22, 2025**	**Sep 22, 2025**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene	0.5	mg/kg	0.7	< 0.5	< 0.5	< 0.5
Sample Properties						
% Moisture	1	%	12	14	19	18

Client Sample ID			**1534.4.5**	**1534.4.6**	**1534.4.7**	**1534.4.8**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S25-Se0077188**	**S25-Se0077189**	**S25-Se0077190**	**S25-Se0077191**
Date Sampled			**Sep 22, 2025**	**Sep 22, 2025**	**Sep 22, 2025**	**Sep 22, 2025**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene	0.5	mg/kg	< 0.5	1.5	1.2	< 0.5
Sample Properties						
% Moisture	1	%	18	18	15	17

Client Sample ID			**1534.4.9**	**1534.4.10**	**1534.4.11**	**1534.4.12**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S25-Se0077192**	**S25-Se0077193**	**S25-Se0077194**	**S25-Se0077195**
Date Sampled			**Sep 22, 2025**	**Sep 22, 2025**	**Sep 22, 2025**	**Sep 22, 2025**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Sample Properties						
% Moisture	1	%	15	16	6.3	16

Client Sample ID			1534.4.13	1534.4.14	1534.4.15	1534.4.16
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Se0077196	S25-Se0077197	S25-Se0077198	S25-Se0077199
Date Sampled			Sep 22, 2025	Sep 22, 2025	Sep 22, 2025	Sep 22, 2025
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Sample Properties						
% Moisture	1	%	18	17	13	15

Client Sample ID			1534.4.17	1534.4.18	1534.4.19	1534.4.20
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Se0077200	S25-Se0077201	S25-Se0077202	S25-Se0077203
Date Sampled			Sep 22, 2025	Sep 22, 2025	Sep 22, 2025	Sep 22, 2025
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Sample Properties						
% Moisture	1	%	13	13	14	13

Client Sample ID			1534.4.21	1534.4.22	1534.4.23	1534.4.24
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Se0077204	S25-Se0077205	S25-Se0077206	S25-Se0077207
Date Sampled			Sep 22, 2025	Sep 22, 2025	Sep 22, 2025	Sep 22, 2025
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	10.0	9.9	11	12
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)*[N01]	50	mg/kg	< 50	< 50	< 50	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100

Client Sample ID			1534.4.25	1534.4.26	1534.4.27	1534.4.28
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Se0077208	S25-Se0077209	S25-Se0077210	S25-Se0077211
Date Sampled			Sep 22, 2025	Sep 22, 2025	Sep 22, 2025	Sep 22, 2025
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	12	9.9	9.7	9.6
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)*[N01]	50	mg/kg	< 50	< 50	< 50	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100

Client Sample ID			1534.4.29	1534.4.30	1534.4.31	1534.4.32
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Se0077212	S25-Se0077213	S25-Se0077214	S25-Se0077215
Date Sampled			Sep 22, 2025	Sep 22, 2025	Sep 22, 2025	Sep 22, 2025
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	13	14	11	12
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)*[N01]	50	mg/kg	< 50	< 50	< 50	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	100	< 100	< 100	< 100

Client Sample ID			1534.4.33	1534.4.34	1534.4.35	1534.4.36
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Se0077216	S25-Se0077217	S25-Se0077218	S25-Se0077219
Date Sampled			Sep 22, 2025	Sep 22, 2025	Sep 22, 2025	Sep 22, 2025
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	12	12	20	13
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	-	-
TRH C10-C14	20	mg/kg	< 20	< 20	-	-
TRH C15-C28	50	mg/kg	< 50	< 50	-	-
TRH C29-C36	50	mg/kg	< 50	< 50	-	-
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	-	-
TRH C6-C10	20	mg/kg	< 20	< 20	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	-	-
TRH >C10-C16	50	mg/kg	< 50	< 50	-	-
TRH >C10-C16 less Naphthalene (F2)*[N01]	50	mg/kg	< 50	< 50	-	-
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	-	-
TRH >C16-C34	100	mg/kg	< 100	< 100	-	-
TRH >C34-C40	100	mg/kg	< 100	< 100	-	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	-	-
Heavy Metals						
Chromium	5	mg/kg	-	-	56	89

Client Sample ID			1534.4.37	1534.4.38	1534.4.39	1534.4.40
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-Se0077220	S25-Se0077221	S25-Se0077222	S25-Se0077223
Date Sampled			Sep 22, 2025	Sep 22, 2025	Sep 22, 2025	Sep 22, 2025
Test/Reference	LOR	Unit				
Sample Properties						
% Moisture	1	%	12	19	13	13
Heavy Metals						
Chromium	5	mg/kg	62	47	70	120

Client Sample ID			1534.4.14QA	1534.4.34QA	TRIP SPIKE	TRIP BLANK
Sample Matrix			Soil	Soil	Trip Spike (solid)	Trip Blank (solid)
Eurofins Sample No.			S25-Se0077224	S25-Se0077225	S25-Se0077226	S25-Se0077227
Date Sampled			Sep 22, 2025	Sep 22, 2025	Sep 22, 2025	Sep 22, 2025
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-	-	-
Sample Properties						
% Moisture	1	%	17	12	-	-
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	-	< 20	-	< 20
TRH C10-C14	20	mg/kg	-	< 20	-	-
TRH C15-C28	50	mg/kg	-	< 50	-	-
TRH C29-C36	50	mg/kg	-	< 50	-	-
TRH C10-C36 (Total)	50	mg/kg	-	< 50	-	-
TRH C6-C10	20	mg/kg	-	< 20	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	-	< 20

Client Sample ID			1534.4.14QA	1534.4.34QA	TRIP SPIKE	TRIP BLANK
Sample Matrix			Soil	Soil	Trip Spike (solid)	Trip Blank (solid)
Eurofins Sample No.			S25-Se0077224	S25-Se0077225	S25-Se0077226	S25-Se0077227
Date Sampled			Sep 22, 2025	Sep 22, 2025	Sep 22, 2025	Sep 22, 2025
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH >C10-C16	50	mg/kg	-	< 50	-	-
TRH >C10-C16 less Naphthalene (F2)*[N01]	50	mg/kg	-	< 50	-	-
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	-	< 0.5
TRH >C16-C34	100	mg/kg	-	< 100	-	-
TRH >C34-C40	100	mg/kg	-	< 100	-	-
TRH >C10-C40 (total)*	100	mg/kg	-	< 100	-	-
TRH C6-C10	1	%	-	-	82	-
Total Recoverable Hydrocarbons						
Naphthalene	1	%	-	-	81	-
TRH C6-C9	1	%	-	-	83	-
BTEX						
Benzene	1	%	-	-	85	-
Ethylbenzene	1	%	-	-	81	-
m&p-Xylenes	1	%	-	-	80	-
o-Xylene	1	%	-	-	81	-
Toluene	1	%	-	-	87	-
Xylenes - Total	1	%	-	-	81	-
4-Bromofluorobenzene (surr.)	1	%	-	-	94	-
BTEX						
Benzene	0.1	mg/kg	-	-	-	< 0.1
Toluene	0.1	mg/kg	-	-	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	-	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	-	-	< 0.2
o-Xylene	0.1	mg/kg	-	-	-	< 0.1
Xylenes - Total*	0.3	mg/kg	-	-	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	-	-	97

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Polycyclic Aromatic Hydrocarbons	Sydney	Sep 25, 2025	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Heavy Metals	Sydney	Sep 25, 2025	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Sydney	Sep 24, 2025	14 Days
- Method: LTM-GEN-7080 Moisture			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Sep 25, 2025	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Sep 25, 2025	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Sydney	Sep 25, 2025	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Sep 25, 2025	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Sep 25, 2025	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			

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Company Name: Coleman and Adams Environmental Pty Ltd
Address: PO Box R1370
The Royal Exchange
NSW 1255

Project Name:
Project ID: 1534.4

Order No.: NSW-24-1057-COL
Report #: 1272453
Phone: 0424 639 602
Fax:

Received: Sep 24, 2025 5:35 PM
Due: Oct 1, 2025
Priority: 5 Day
Contact Name: Joanna Chen (ALL SRA'S)

Eurofins Analytical Services Manager : Irem Haskara

Sample Detail						Benzo(a)pyrene	Chromium	Moisture Set	Total Recoverable Hydrocarbons	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	1534.4.1	Sep 22, 2025		Soil	S25-Se0077184	X		X			
2	1534.4.2	Sep 22, 2025		Soil	S25-Se0077185	X		X			
3	1534.4.3	Sep 22, 2025		Soil	S25-Se0077186	X		X			
4	1534.4.4	Sep 22, 2025		Soil	S25-Se0077187	X		X			
5	1534.4.5	Sep 22, 2025		Soil	S25-Se0077188	X		X			
6	1534.4.6	Sep 22, 2025		Soil	S25-Se0077189	X		X			
7	1534.4.7	Sep 22, 2025		Soil	S25-Se0077190	X		X			
8	1534.4.8	Sep 22, 2025		Soil	S25-Se0077191	X		X			
9	1534.4.9	Sep 22, 2025		Soil	S25-Se0077192	X		X			
10	1534.4.10	Sep 22, 2025		Soil	S25-Se0077193	X		X			
11	1534.4.11	Sep 22, 2025		Soil	S25-Se0077194	X		X			
12	1534.4.12	Sep 22, 2025		Soil	S25-Se0077195	X		X			
13	1534.4.13	Sep 22, 2025		Soil	S25-Se0077196	X		X			
14	1534.4.14	Sep 22, 2025		Soil	S25-Se0077197	X		X			

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Company Name: Coleman and Adams Environmental Pty Ltd
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NSW 1255

Project Name:
Project ID: 1534.4

Order No.: NSW-24-1057-COL
Report #: 1272453
Phone: 0424 639 602
Fax:

Received: Sep 24, 2025 5:35 PM
Due: Oct 1, 2025
Priority: 5 Day
Contact Name: Joanna Chen (ALL SRA'S)

Eurofins Analytical Services Manager : Irem Haskara

Sample Detail						Benzo(a)pyrene	Chromium	Moisture Set	Total Recoverable Hydrocarbons	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
15	1534.4.15	Sep 22, 2025		Soil	S25-Se0077198	X		X			
16	1534.4.16	Sep 22, 2025		Soil	S25-Se0077199	X		X			
17	1534.4.17	Sep 22, 2025		Soil	S25-Se0077200	X		X			
18	1534.4.18	Sep 22, 2025		Soil	S25-Se0077201	X		X			
19	1534.4.19	Sep 22, 2025		Soil	S25-Se0077202	X		X			
20	1534.4.20	Sep 22, 2025		Soil	S25-Se0077203	X		X			
21	1534.4.21	Sep 22, 2025		Soil	S25-Se0077204			X	X		
22	1534.4.22	Sep 22, 2025		Soil	S25-Se0077205			X	X		
23	1534.4.23	Sep 22, 2025		Soil	S25-Se0077206			X	X		
24	1534.4.24	Sep 22, 2025		Soil	S25-Se0077207			X	X		
25	1534.4.25	Sep 22, 2025		Soil	S25-Se0077208			X	X		
26	1534.4.26	Sep 22, 2025		Soil	S25-Se0077209			X	X		
27	1534.4.27	Sep 22, 2025		Soil	S25-Se0077210			X	X		
28	1534.4.28	Sep 22, 2025		Soil	S25-Se0077211			X	X		
29	1534.4.29	Sep 22, 2025		Soil	S25-Se0077212			X	X		
30	1534.4.30	Sep 22, 2025		Soil	S25-Se0077213			X	X		
31	1534.4.31	Sep 22, 2025		Soil	S25-Se0077214			X	X		

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Project Name:
Project ID: 1534.4

Order No.: NSW-24-1057-COL
Report #: 1272453
Phone: 0424 639 602
Fax:

Received: Sep 24, 2025 5:35 PM
Due: Oct 1, 2025
Priority: 5 Day
Contact Name: Joanna Chen (ALL SRA'S)

Eurofins Analytical Services Manager : Irem Haskara

Sample Detail						Benzo(a)pyrene	Chromium	Moisture Set	Total Recoverable Hydrocarbons	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
32	1534.4.32	Sep 22, 2025		Soil	S25-Se0077215			X	X		
33	1534.4.33	Sep 22, 2025		Soil	S25-Se0077216			X	X		
34	1534.4.34	Sep 22, 2025		Soil	S25-Se0077217			X	X		
35	1534.4.35	Sep 22, 2025		Soil	S25-Se0077218		X	X			
36	1534.4.36	Sep 22, 2025		Soil	S25-Se0077219		X	X			
37	1534.4.37	Sep 22, 2025		Soil	S25-Se0077220		X	X			
38	1534.4.38	Sep 22, 2025		Soil	S25-Se0077221		X	X			
39	1534.4.39	Sep 22, 2025		Soil	S25-Se0077222		X	X			
40	1534.4.40	Sep 22, 2025		Soil	S25-Se0077223		X	X			
41	1534.4.14QA	Sep 22, 2025		Soil	S25-Se0077224	X		X			
42	1534.4.34QA	Sep 22, 2025		Soil	S25-Se0077225			X	X		
43	TRIP SPIKE	Sep 22, 2025		Trip Spike (solid)	S25-Se0077226						X
44	TRIP BLANK	Sep 22, 2025		Trip Blank (solid)	S25-Se0077227					X	
45	TSL	Sep 23, 2025		Trip Spike (solid)	S25-Se0077228						X
Test Counts						21	6	42	15	1	2

Internal Quality Control Review and Glossary

General

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

Holding Times

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

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

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

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

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

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

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

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Total Recoverable Hydrocarbons							
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Heavy Metals							
Chromium	mg/kg	< 5			5	Pass	
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Benzo(a)pyrene	%	87			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Benzo(a)pyrene	%	90			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C10-C14	%	117			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH >C10-C16	%	113			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	89			70-130	Pass	
TRH C6-C10	%	85			70-130	Pass	
Naphthalene	%	97			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	97			70-130	Pass	
Toluene	%	96			70-130	Pass	
Ethylbenzene	%	109			70-130	Pass	
m&p-Xylenes	%	96			70-130	Pass	
o-Xylene	%	98			70-130	Pass	
Xylenes - Total*	%	97			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Chromium	%	102			80-120	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	84			70-130	Pass	
TRH C6-C10	%	79			70-130	Pass	
Naphthalene	%	102			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	96			70-130	Pass	
Toluene	%	97			70-130	Pass	
Ethylbenzene	%	108			70-130	Pass	
m&p-Xylenes	%	95			70-130	Pass	
o-Xylene	%	98			70-130	Pass	
Xylenes - Total*	%	96			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Benzo(a)pyrene	S25-Se0075752	NCP	%	85			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Benzo(a)pyrene	S25-Se0077195	CP	%	75			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	N25-Se0087042	NCP	%	84			70-130	Pass	
TRH C6-C10	N25-Se0087042	NCP	%	80			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C10-C14	S25-Se0077211	CP	%	81			70-130	Pass	
TRH >C10-C16	S25-Se0077211	CP	%	81			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
Naphthalene	S25-Se0077216	CP	%	83			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S25-Se0077216	CP	%	93			70-130	Pass	
Toluene	S25-Se0077216	CP	%	77			70-130	Pass	
Ethylbenzene	S25-Se0077216	CP	%	86			70-130	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heavy Metals				Result 1					
Chromium	S25-Se0077107	NCP	%	95			75-125	Pass	
Spike - % Recovery									
BTEX				Result 1					
m&p-Xylenes	S25-Se0075749	NCP	%	84			70-130	Pass	
o-Xylene	S25-Se0075749	NCP	%	78			70-130	Pass	
Xylenes - Total*	S25-Se0075749	NCP	%	82			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Benzo(a)pyrene	S25-Se0075668	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S25-Se0076998	NCP	%	4.1	4.5	8.0	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S25-Se0077191	CP	%	17	19	9.0	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Benzo(a)pyrene	S25-Se0077193	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Benzo(a)pyrene	S25-Se0077616	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S25-Se0077201	CP	%	13	10	28	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	N25-Se0079160	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10	N25-Se0079160	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Naphthalene	N25-Se0079160	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C10-C14	S25-Se0077210	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S25-Se0077210	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S25-Se0077210	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C10-C16	S25-Se0077210	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S25-Se0077210	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S25-Se0077210	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S25-Se0077212	CP	%	13	14	7.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S25-Se0075755	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10	S25-Se0075755	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Naphthalene	S25-Se0075755	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C10-C14	S25-Se0077215	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S25-Se0077215	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S25-Se0077215	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C10-C16	S25-Se0077215	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S25-Se0077215	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S25-Se0077215	CP	mg/kg	< 100	< 100	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Chromium	S25-Se0077110	NCP	mg/kg	20	24	14	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S25-Se0077222	CP	%	13	16	24	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S25-Se0075755	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S25-Se0075755	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S25-Se0075755	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S25-Se0075755	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S25-Se0075755	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S25-Se0075755	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.

Authorised by:

Nileshni Goundar	Analytical Services Manager
Mickael Ros	Senior Analyst-Metal
Raymond Siu	Senior Analyst-Volatile
Roopesh Rangarajan	Senior Analyst-Organic
Roopesh Rangarajan	Senior Analyst-Volatile
Ryan Phillips	Senior Analyst-Sample Properties

Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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ABN: 50 005 085 521

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+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	+61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

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NATA# 2377
Site# 2370 & 2554

Sample Receipt Advice

Company name:	Coleman and Adams Environmental Pty Ltd
Contact name:	Joanna Chen (ALL SRA'S)
Project name:	Not provided
Project ID:	1534.4
Turnaround time:	5 Day
Date/Time received	Sep 24, 2025 5:35 PM
Eurofins reference	1272457

Sample Information

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

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

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

Irem Haskara on phone : 61+ 428 995 496 or by email: Irem.Haskara@eurofinsanz.com

Results will be delivered electronically via email to Joanna Chen (ALL SRA'S) - joanna@colemanadams.com.au.

Global Leader - Results you can trust

Coleman and Adams Environmental Pty Ltd
PO Box R1370
The Royal Exchange
NSW 1255

NATA Accredited
Accreditation Number 1261
Site Number 1254

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

Attention: **Joanna Chen (ALL SRA'S)**

Report **1272457-S**
Project name
Project ID 1534.4
Received Date Sep 24, 2025

Client Sample ID			**1534.4.14QC**	**1534.4.34QC**
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**S25-Se0077259**	**S25-Se0077260**
Date Sampled			**Sep 22, 2025**	**Sep 22, 2025**
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-
Sample Properties				
% Moisture	1	%	17	13
Total Recoverable Hydrocarbons				
TRH C6-C9	20	mg/kg	-	< 20
TRH C10-C14	20	mg/kg	-	< 20
TRH C15-C28	50	mg/kg	-	< 50
TRH C29-C36	50	mg/kg	-	< 50
TRH C10-C36 (Total)	50	mg/kg	-	< 50
TRH C6-C10	20	mg/kg	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20
TRH >C10-C16	50	mg/kg	-	< 50
TRH >C10-C16 less Naphthalene (F2)*[N01]	50	mg/kg	-	< 50
Naphthalene[N02]	0.5	mg/kg	-	< 0.5
TRH >C16-C34	100	mg/kg	-	< 100
TRH >C34-C40	100	mg/kg	-	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	< 100

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Polycyclic Aromatic Hydrocarbons	Melbourne	Sep 30, 2025	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
% Moisture	Melbourne	Sep 24, 2025	14 Days
- Method: LTM-GEN-7080 Moisture			
Total Recoverable Hydrocarbons	Melbourne	Sep 30, 2025	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Sep 30, 2025	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 30, 2025	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Sep 30, 2025	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			

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Site# 2370 & 2554

Company Name: Coleman and Adams Environmental Pty Ltd
Address: PO Box R1370
The Royal Exchange
NSW 1255

Project Name:
Project ID: 1534.4

Order No.: NSW-24-1057-COL
Report #: 1272457
Phone: 0424 639 602
Fax:

Received: Sep 24, 2025 5:35 PM
Due: Oct 1, 2025
Priority: 5 Day
Contact Name: Joanna Chen (ALL SRA'S)

Eurofins Analytical Services Manager : Irem Haskara

Sample Detail						Benzo(a)pyrene	Moisture Set	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA # 1261 Site # 1254						X	X	X
External Laboratory								
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**			
1	1534.4.14QC	Sep 22, 2025		Soil	S25-Se0077259	X	X	
2	1534.4.34QC	Sep 22, 2025		Soil	S25-Se0077260		X	X
Test Counts						1	2	1

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Internal Quality Control Review and Glossary

General

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

Holding Times

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

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

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

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

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

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

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

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Benzo(a)pyrene	%	104			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	80			70-130	Pass	
TRH C10-C14	%	89			70-130	Pass	
TRH C6-C10	%	76			70-130	Pass	
TRH >C10-C16	%	92			70-130	Pass	
Naphthalene	%	74			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Benzo(a)pyrene	M25-Se0088268	NCP	%	104			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	M25-Se0089447	NCP	%	100			70-130	Pass	
TRH C10-C14	M25-Se0088252	NCP	%	98			70-130	Pass	
TRH C6-C10	M25-Se0089447	NCP	%	97			70-130	Pass	
TRH >C10-C16	M25-Se0088252	NCP	%	100			70-130	Pass	
Naphthalene	M25-Se0089447	NCP	%	72			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Benzo(a)pyrene	M25-Se0089588	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	M25-Se0081108	NCP	%	12	13	8.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S25-Se0077260	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	M25-Se0088784	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	M25-Se0088784	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	M25-Se0088784	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C6-C10	S25-Se0077260	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	M25-Se0088784	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Naphthalene	S25-Se0077260	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH >C16-C34	M25-Se0088784	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	M25-Se0088784	NCP	mg/kg	< 100	< 100	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.

Authorised by:

Irem Haskara	Analytical Services Manager
Edward Lee	Senior Analyst-Organic
Joseph Edouard	Senior Analyst-Volatile

Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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CHAIN OF CUSTODY RECORD

Eurofins | Environment Testing ABN 50 005 085 521

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☐ **Brisbane Laboratory** Unit 1 21 Smallwood Place Murarrie QLD 4172 07 3902 4600 EnviroSampleQLD@eurofins.com

☐ **Perth Laboratory** Unit 2 91 Leach Highway Kewdale WA 6105 08 9251 9600 EnviroSampleWA@eurofins.com

☐ **Melbourne Laboratory** 6 Monterey Road Dandenong South VIC 3175 03 8564 5000 EnviroSampleVic@eurofins.com

Company	Coleman Adams Environmental	Project №	1534.4	Project Manager	
Address		Project Name		EDD Format (ESdat, EQuIS etc)	
Contact Name	J Chen			Sampler(s)	J Lu
Phone №				Handed over by	
Special Directions				Email for Invoice	
Purchase Order	NSW-24-0157-COL			Email for Results	enviro@colemanadams.com.au
Quote ID №					

Analyses (Where metals are requested please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing.)

Containers (Change container type & size if necessary.)

Required Turnaround Time (TAT) (Default will be 5 days if not ticked.)

♦Surcharge will apply

☐ Overnight (reporting by 9am)♦
☐ Same day♦ ☐ 1 day♦
☑ 2 days♦ ☐ 3 days♦
☐ 5 days (Standard)
☐ Other( )

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	Benzo (a) Pyrene	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	1534.4.41	14.10.2025	s	✓									
2	1534.4.42	14.10.2025	s	✓									
3	1534.4.43	14.10.2025	s	✓									
4	1534.4.44	14.10.2025	s	✓									
5													
6													
7													
8													
9													
10													
	Total Counts												

Method of Shipment: ☐ Courier (#) ☐ Hand Delivered ☐ Postal

Laboratory Use Only				Name		Signature		Date		Time		Temperature	
	Received By	Jessica	SYD | BNE | MEL | PER | ADL | NTL | DRW		Signature		Date	14/10/25	Time	5:00PM	Temperature	9.6°C
	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW		Signature		Date		Time		Report №	

Eurofins Environment Testing Australia Pty Ltd

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | Environment Testing Standard Terms and Conditions unless agreed otherwise. A copy is available on request.

QS3009_R10 Modified by: Dr. R Symons Approved by: G. Jackson Approved on: 8 August 2019

1279647 CM

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofinsanz.com

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

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	+61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370 & 2554

Sample Receipt Advice

Company name:	Coleman and Adams Environmental Pty Ltd
Contact name:	Joanna Chen (ALL SRA'S)
Project name:	Not provided
Project ID:	1534.4
Turnaround time:	2 Day
Date/Time received	Oct 14, 2025 5:00 PM
Eurofins reference	1279647

Sample Information

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

Notes

Contact

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

Irem Haskara on phone : 61+ 428 995 496 or by email: Irem.Haskara@eurofinsanz.com

Results will be delivered electronically via email to Joanna Chen (ALL SRA'S) - joanna@colemanadams.com.au.

Coleman and Adams Environmental Pty Ltd
PO Box R1370
The Royal Exchange
NSW 1255

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention: **Joanna Chen (ALL SRA'S)**

Report **1279647-S**
Project name
Project ID 1534.4
Received Date Oct 14, 2025

Client Sample ID			**1534.4.41**	**1534.4.42**	**1534.4.43**	**1534.4.44**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S25-Oc0040004**	**S25-Oc0040005**	**S25-Oc0040006**	**S25-Oc0040007**
Date Sampled			**Oct 14, 2025**	**Oct 14, 2025**	**Oct 14, 2025**	**Oct 14, 2025**
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Sample Properties						
% Moisture	1	%	19	19	18	19

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Polycyclic Aromatic Hydrocarbons	Sydney	Oct 14, 2025	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
% Moisture	Sydney	Oct 14, 2025	14 Days
- Method: LTM-GEN-7080 Moisture			

eurofins

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

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Site# 18217

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NATA# 2377
Site# 2370 & 2554

Company Name: Coleman and Adams Environmental Pty Ltd
Address: PO Box R1370
The Royal Exchange
NSW 1255

Project Name:
Project ID: 1534.4

Order No.:
Report #: 1279647
Phone: 0424 639 602
Fax:

Received: Oct 14, 2025 5:00 PM
Due: Oct 16, 2025
Priority: 2 Day
Contact Name: Joanna Chen (ALL SRA'S)

Eurofins Analytical Services Manager : Irem Haskara

Sample Detail						Benzo(a)pyrene	Moisture Set
Sydney Laboratory - NATA # 1261 Site # 18217						X	X
External Laboratory							
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**		
1	1534.4.41	Oct 14, 2025		Soil	S25-Oc0040004	X	X
2	1534.4.42	Oct 14, 2025		Soil	S25-Oc0040005	X	X
3	1534.4.43	Oct 14, 2025		Soil	S25-Oc0040006	X	X
4	1534.4.44	Oct 14, 2025		Soil	S25-Oc0040007	X	X
Test Counts						4	4

Internal Quality Control Review and Glossary

General

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

Holding Times

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

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

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

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

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

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

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

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Benzo(a)pyrene	%	99			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Benzo(a)pyrene	S25-Oc0038621	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S25-Oc0040006	CP	%	18	20	9.0	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised by:

Nileshni Goundar	Analytical Services Manager
Roopesh Rangarajan	Senior Analyst-Organic
Ryan Phillips	Senior Analyst-Sample Properties

Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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1297004

CHAIN OF CUSTODY RECORD

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☐ **Melbourne Laboratory** 6 Monterey Road Dandenong South VIC 3175 03 8564 5000 EnviroSampleVic@eurofins.com

Company	Coleman Adams Environmental	Project №	1534.6	Project Manager	
Address		Project Name		EDD Format ESdat EQuIS etc	
Contact Name	J Chen				
Phone №					
Special Directions					
Purchase Order	NSW-24-0157-COL				
Quote ID №					

Sampler(s)					
Handed over by	J Lu				
Email for Invoice					
Email for Results	enviro@colemanadams.com.au				

Analyses — Where metals are requested, please specify "Total" or "Filtered". SUITE code must be used to attract SUITE pricing.

Containers — Change container type & size if necessary.

Required Turnaround Time (TAT) — Default will be 5 days if not ticked.

♦Surcharge will apply

☐ Overnight (reporting by 9am)♦ ☐ Same day♦ ☐ 1 day♦ ☐ 2 days♦ ☐ 3 days♦ ☑ 5 days (Standard) ☐ Other( )

№	Client Sample ID	Sampled Date/Time dd/mm/yy hh:mm	Matrix Solid (S) Water (W)	Eurofins Suit Code R17	OCP/OPP/PCB	Asbestos ID	500mL Plastic	250mL Plastic	125mL Plastic	200mL Amber Glass	40mL VOA vial	500mL PFAS Bottle	Jar (Glass or HDPE)	Other (Asbestos AS4964, WA Guidelines)	Sample Comments / Dangerous Goods Hazard Warning
1	1534.6.1	24.11.2025	S	✓		✓									
2	1534.6.2	24.11.2025	S	✓	✓	✓									
3	1534.6.3	24.11.2025	S	✓		✓									
4	1534.6.4	24.11.2025	S	✓	✓	✓									
5	1534.6.5	24.11.2025	S	✓		✓									
6	1534.6.6	24.11.2025	S	✓	✓	✓									
7															
8															
9															
10															
	Total Counts														

Method of Shipment	☐ Courier (#)	☐ Hand Delivered	☐ Postal	Name		Signature		Date		Time	

Laboratory Use Only	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Temperature	
	Received By		SYD | BNE | MEL | PER | ADL | NTL | DRW	Signature		Date		Time		Report №	

Submission of samples to the laboratory will be deemed as acceptance of Eurofins | Environment Testing Standard Terms and Conditions unless agreed otherwise. A copy is available on request.

Fridi

25/11/25 6-10pm 8-1 of

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofinsanz.com

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

Melbourne	Geelong	Sydney	Canberra	Brisbane	Newcastle
6 Monterey Road	19/8 Lewalan Street	179 Magowar Road	Unit 1,2 Dacre Street	1/21 Smallwood Place	1/2 Frost Drive
Dandenong South	Grovedale	Girraween	Mitchell	Murarrie	Mayfield West
VIC 3175	VIC 3216	NSW 2145	ACT 2911	QLD 4172	NSW 2304
+61 3 8564 5000	+61 3 8564 5000	+61 2 9900 8400	+61 2 6113 8091	+61 7 3902 4600	+61 2 4968 8448
NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261	NATA# 1261
Site# 1254	Site# 25403	Site# 18217	Site# 25466	Site# 20794 & 2780	Site# 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool
WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370 & 2554

Sample Receipt Advice

Company name:	Coleman and Adams Environmental Pty Ltd
Contact name:	Joanna Chen (ALL SRA'S)
Project name:	Not provided
Project ID:	1534.6
Turnaround time:	5 Day
Date/Time received	Nov 25, 2025 6:10 PM
Eurofins reference	1297004

Sample Information

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

Notes

Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

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

Irem Haskara on phone : 61+ 428 995 496 or by email: Irem.Haskara@eurofinsanz.com

Results will be delivered electronically via email to Joanna Chen (ALL SRA'S) - joanna@colemanadams.com.au.

Certificate of Analysis

eurofins | Environment Testing

Coleman and Adams Environmental Pty Ltd
PO Box R1370
The Royal Exchange
NSW 1255

NATA Accredited
Accreditation Number 1261
Site Number 18217

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

Attention:	Joanna Chen (ALL SRA'S)
Report	1297004-AID
Project Name	
Project ID	1534.6
Received Date	Nov 25, 2025
Date Reported	Dec 02, 2025

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004 and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Man-made vitreous fibre (MMVF)	Fibres exhibiting isotropic characteristics, including glass fibres, glass wool, rock wool, slag wool, ceramic fibres and bio-soluble fibres. NOTE: previously known as "synthetic mineral fibre" (SMF). Simple analytical procedures such as polarised light microscopy cannot detect or reliably identify asbestos in some types of commercial products containing asbestos, either because the fibres are below the resolution of optical microscopy or because the matrix material adheres too strongly to the fibres. For these types of products, electron microscopy may be necessary.
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, Australian Standard AS 5370:2024 Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The sample submitted is dried and passed through a 10 mm sieve followed by a 2 mm sieve. All fibrous matter greater than 10 mm and greater than 2 mm and the material passing through the 2 mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 g to 60 g, then a subsampling routine based on ISO 3082:2017(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be subsampled for trace analysis, in accordance with AS 5370:2024*.*
Bonded asbestos-containing material (ACM)	The material is first examined, and any fibres are isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 5370:2024*. *NOTE: Even after disintegration, it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting (LOR)	The performance limitation of the AS 5370:2024* method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory limit of reporting, per se. Examination of large sample size (e.g., 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 5370:2024*, and hence, NATA Accreditation does not cover the performance of this service (non-NATA results are shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964-2004: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos". This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Project Name
Project ID 1534.6
Date Sampled Nov 24, 2025
Report 1297004-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
1534.6.1	25-No0076989	Nov 24, 2025	Approximate Sample 45g Sample consisted of: Brown coarse-grained sandy soil, charcoal like material	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
1534.6.2	25-No0076990	Nov 24, 2025	Approximate Sample 61g Sample consisted of: Brown coarse-grained sandy soil, plant residues and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
1534.6.3	25-No0076991	Nov 24, 2025	Approximate Sample 52g Sample consisted of: Grey coarse-grained sandy soil, plant residues	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
1534.6.4	25-No0076992	Nov 24, 2025	Approximate Sample 77g Sample consisted of: Brown coarse-grained sandy soil, plant residues and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
1534.6.5	25-No0076993	Nov 24, 2025	Approximate Sample 95g Sample consisted of: Brown coarse-grained sandy soil, plant residues and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
1534.6.6	25-No0076994	Nov 24, 2025	Approximate Sample 53g Sample consisted of: Grey coarse-grained sandy soil, plant residues	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Nov 25, 2025	Indefinite

eurofins

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Eurofins ARL Pty Ltd
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Perth
46-48 Banksia Road
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WA 6106
+61 8 6253 4444
NATA# 2377
Site# 2370 & 2554

Company Name: Coleman and Adams Environmental Pty Ltd
Address: PO Box R1370
The Royal Exchange
NSW 1255

Project Name:
Project ID: 1534.6

Order No.: NSW-24-0157-COL
Report #: 1297004
Phone: 0424 639 602
Fax:

Received: Nov 25, 2025 6:10 PM
Due: Dec 2, 2025
Priority: 5 Day
Contact Name: Joanna Chen (ALL SRA'S)

Eurofins Analytical Services Manager : Irem Haskara

Sample Detail						Asbestos - AS4964	Eurofins Suite B15	Moisture Set	ENM Exemption Suite -The excavated natural material order 2014 NSW
Melbourne Laboratory - NATA # 1261 Site # 1254							X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X			
External Laboratory									
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
1	1534.6.1	Nov 24, 2025		Soil	S25-No0076989	X		X	X
2	1534.6.2	Nov 24, 2025		Soil	S25-No0076990	X	X	X	X
3	1534.6.3	Nov 24, 2025		Soil	S25-No0076991	X		X	X
4	1534.6.4	Nov 24, 2025		Soil	S25-No0076992	X	X	X	X
5	1534.6.5	Nov 24, 2025		Soil	S25-No0076993	X		X	X
6	1534.6.6	Nov 24, 2025		Soil	S25-No0076994	X	X	X	X
Test Counts						6	3	6	6

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report in blue indicates data provided by the customer that may impact the results.
5. This report replaces any interim results previously issued.

Holding Times

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

Units

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

Calculations

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

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

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

Terms

%Asbestos	Estimated percentage of asbestos in a given matrix may be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**P_A**). This estimate is not NATA-accredited.
ACM	Asbestos Containing Materials. Asbestos in a non-asbestos matrix is typically presented in bonded (non-friable) condition. For the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material, such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to “non-bonded / friable”.
AFM	Airborne Fibre Monitoring, e.g., by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total %w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004.
COC	Chain of Custody.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004.
Dry	Sample is dried by heating before analysis.
DS	Dispersion Staining. The technique required for unequivocal identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos-containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material previously non-friable and severely degraded. For the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to distinguish visibly and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the NEPM, this includes both AF and FA. It is outside of the laboratory’s remit to assess the degree of friability.
HSG248	UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021), ISBN: 9780616667079.
HSG264	UK HSE HSG264, *Asbestos: The Survey Guide* (2012), ISBN: 9780717665020
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)].
MMVF	Man-Made Vitreous Fibre - exhibiting isotropic characteristics, including glass fibres, glass wool, rock wool, slag wool, ceramic fibres and “bio-soluble fibres. NOTE: previously known as “synthetic mineral fibre” (SMF).
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified per AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004.
PCM	Phase Contrast Microscopy. This is used for fibre counting, according to the MFM.
PLM	Polarised Light Microscopy. It is used for fibre identification and residual analysis according to AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004.
Sampling	Unless otherwise stated, Eurofins are not responsible for sampling equipment or the sampling process.
SRA	Sample Receipt Advice.
Residual Analysis	An analytical procedure is used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix according to AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly Trace Analysis in AS 4964-2004.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
Inconclusive	Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according to AS 5370:2024* Sampling and qualitative identification of asbestos in bulk materials (ISO 22262-1:2012, MOD), formerly AS 4964-2004. It may include (but is not limited to) actinolite, anthophyllite, or tremolite asbestos. SEM/TEM is required for definitive identification.
WA DOH	Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis*
Weighted Average	Combined average %w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**).

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Asbestos Counter/Identifier:

Geronimo Jr Abrot	Senior Analyst-Asbestos

Authorised by:

Sayeed Abu	Senior Analyst-Asbestos

Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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Coleman and Adams Environmental Pty Ltd
PO Box R1370
The Royal Exchange
NSW 1255

NATA Accredited
Accreditation Number 1261
Site Number 1254

Accredited for compliance with ISO/IEC 17025 – Testing
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Attention: **Joanna Chen (ALL SRA'S)**

Report **1297004-S**
Project name
Project ID 1534.6
Received Date Nov 25, 2025

Client Sample ID			**1534.6.1**	**1534.6.2**	**1534.6.3**	**1534.6.4**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S25-No0076989**	**S25-No0076990**	**S25-No0076991**	**S25-No0076992**
Date Sampled			**Nov 24, 2025**	**Nov 24, 2025**	**Nov 24, 2025**	**Nov 24, 2025**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)*[N01]	50	mg/kg	< 50	< 50	< 50	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	65	52	66	53
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			1534.6.1	1534.6.2	1534.6.3	1534.6.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-No0076989	S25-No0076990	S25-No0076991	S25-No0076992
Date Sampled			Nov 24, 2025	Nov 24, 2025	Nov 24, 2025	Nov 24, 2025
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Fluoranthene	0.5	mg/kg	0.7	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	0.6	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	1.3	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	120	95	117	65
p-Terphenyl-d14 (surr.)	1	%	80	117	147	111
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	320	330	370	260
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	7.1	8.1	8.4	8.6
Heavy Metals						
Arsenic	2	mg/kg	3.5	4.7	3.0	3.6
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	18	18	11	23
Copper	5	mg/kg	12	13	8.2	15
Lead	5	mg/kg	16	16	8.5	19
Mercury	0.1	mg/kg	0.1	0.2	< 0.1	< 0.1
Nickel	5	mg/kg	7.8	9.2	6.7	8.5
Zinc	5	mg/kg	34	56	23	46
Sample Properties						
% Moisture	1	%	10.0	9.4	9.9	10
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	< 0.05
a-HCH	0.05	mg/kg	-	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	-	< 0.05
b-HCH	0.05	mg/kg	-	< 0.05	-	< 0.05
d-HCH	0.05	mg/kg	-	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05	-	< 0.05
g-HCH (Lindane)	0.05	mg/kg	-	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	< 0.05
Methoxychlor	0.05	mg/kg	-	< 0.05	-	< 0.05
Toxaphene	0.5	mg/kg	-	< 0.5	-	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	-	< 0.1

Client Sample ID			1534.6.1	1534.6.2	1534.6.3	1534.6.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S25-No0076989	S25-No0076990	S25-No0076991	S25-No0076992
Date Sampled			Nov 24, 2025	Nov 24, 2025	Nov 24, 2025	Nov 24, 2025
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-	< 0.1
Dibutylchlorendate (surr.)	1	%	-	86	-	51
Tetrachloro-m-xylene (surr.)	1	%	-	93	-	55
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	< 0.2	-	< 0.2
Bolstar	0.2	mg/kg	-	< 0.2	-	< 0.2
Chlorfenvinphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Chlorpyrifos	0.2	mg/kg	-	< 0.2	-	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	-	< 0.2	-	< 0.2
Coumaphos	2	mg/kg	-	< 2	-	< 2
Demeton-S	0.2	mg/kg	-	< 0.2	-	< 0.2
Demeton-O	0.2	mg/kg	-	< 0.2	-	< 0.2
Diazinon	0.2	mg/kg	-	< 0.2	-	< 0.2
Dichlorvos	0.2	mg/kg	-	< 0.2	-	< 0.2
Dimethoate	0.2	mg/kg	-	< 0.2	-	< 0.2
Disulfoton	0.2	mg/kg	-	< 0.2	-	< 0.2
EPN	0.2	mg/kg	-	< 0.2	-	< 0.2
Ethion	0.2	mg/kg	-	< 0.2	-	< 0.2
Ethoprop	0.2	mg/kg	-	< 0.2	-	< 0.2
Ethyl parathion	0.2	mg/kg	-	< 0.2	-	< 0.2
Fenitrothion	0.2	mg/kg	-	< 0.2	-	< 0.2
Fensulfothion	0.2	mg/kg	-	< 0.2	-	< 0.2
Fenthion	0.2	mg/kg	-	< 0.2	-	< 0.2
Malathion	0.2	mg/kg	-	< 0.2	-	< 0.2
Merphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Methyl parathion	0.2	mg/kg	-	< 0.2	-	< 0.2
Mevinphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Monocrotophos	2	mg/kg	-	< 2	-	< 2
Naled	0.2	mg/kg	-	< 0.2	-	< 0.2
Omethoate	2	mg/kg	-	< 2	-	< 2
Phorate	0.2	mg/kg	-	< 0.2	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2	-	< 0.2
Pyrazophos	0.2	mg/kg	-	< 0.2	-	< 0.2
Ronnel	0.2	mg/kg	-	< 0.2	-	< 0.2
Terbufos	0.2	mg/kg	-	< 0.2	-	< 0.2
Tetrachlorvinphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Tokuthion	0.2	mg/kg	-	< 0.2	-	< 0.2
Trichloronate	0.2	mg/kg	-	< 0.2	-	< 0.2
Triphenylphosphate (surr.)	1	%	-	96	-	66
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	< 0.1	-	< 0.1
Aroclor-1221	0.1	mg/kg	-	< 0.1	-	< 0.1
Aroclor-1232	0.1	mg/kg	-	< 0.1	-	< 0.1
Aroclor-1242	0.1	mg/kg	-	< 0.1	-	< 0.1
Aroclor-1248	0.1	mg/kg	-	< 0.1	-	< 0.1
Aroclor-1254	0.1	mg/kg	-	< 0.1	-	< 0.1
Aroclor-1260	0.1	mg/kg	-	< 0.1	-	< 0.1
Total PCB*	0.1	mg/kg	-	< 0.1	-	< 0.1
Dibutylchlorendate (surr.)	1	%	-	86	-	51
Tetrachloro-m-xylene (surr.)	1	%	-	93	-	55

Client Sample ID			1534.6.5	1534.6.6
Sample Matrix			Soil	Soil
Eurofins Sample No.			S25-No0076993	S25-No0076994
Date Sampled			Nov 24, 2025	Nov 24, 2025
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons				
TRH C6-C9	20	mg/kg	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50
TRH C29-C36	50	mg/kg	54	< 50
TRH C10-C36 (Total)	50	mg/kg	54	< 50
TRH C6-C10	20	mg/kg	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)*[N01]	50	mg/kg	< 50	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5
TRH >C16-C34	100	mg/kg	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100
BTEX				
Benzene	0.1	mg/kg	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	82	96
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	63	93
p-Terphenyl-d14 (surr.)	1	%	80	77
Conductivity (1:5 aqueous extract at 25 °C as rec.)	10	uS/cm	240	230
pH (1:5 Aqueous extract at 25 °C as rec.)	0.1	pH Units	8.7	8.6

Client Sample ID			1534.6.5	1534.6.6
Sample Matrix			Soil	Soil
Eurofins Sample No.			S25-No0076993	S25-No0076994
Date Sampled			Nov 24, 2025	Nov 24, 2025
Test/Reference	LOR	Unit		
Heavy Metals				
Arsenic	2	mg/kg	2.8	2.9
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	14	32
Copper	5	mg/kg	11	10
Lead	5	mg/kg	13	12
Mercury	0.1	mg/kg	< 0.1	< 0.1
Nickel	5	mg/kg	7.2	10
Zinc	5	mg/kg	31	30
Sample Properties				
% Moisture	1	%	11	10
Organochlorine Pesticides				
Chlordanes - Total	0.1	mg/kg	-	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05
4.4'-DDT	0.05	mg/kg	-	< 0.05
a-HCH	0.05	mg/kg	-	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05
b-HCH	0.05	mg/kg	-	< 0.05
d-HCH	0.05	mg/kg	-	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05
Endosulfan I	0.05	mg/kg	-	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05
Endrin	0.05	mg/kg	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05
g-HCH (Lindane)	0.05	mg/kg	-	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05
Methoxychlor	0.05	mg/kg	-	< 0.05
Toxaphene	0.5	mg/kg	-	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1
Dibutylchlorendate (surr.)	1	%	-	84
Tetrachloro-m-xylene (surr.)	1	%	-	93
Organophosphorus Pesticides				
Azinphos-methyl	0.2	mg/kg	-	< 0.2
Bolstar	0.2	mg/kg	-	< 0.2
Chlorfenvinphos	0.2	mg/kg	-	< 0.2
Chlorpyrifos	0.2	mg/kg	-	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	-	< 0.2
Coumaphos	2	mg/kg	-	< 2
Demeton-S	0.2	mg/kg	-	< 0.2
Demeton-O	0.2	mg/kg	-	< 0.2
Diazinon	0.2	mg/kg	-	< 0.2
Dichlorvos	0.2	mg/kg	-	< 0.2

Client Sample ID			1534.6.5	1534.6.6
Sample Matrix			Soil	Soil
Eurofins Sample No.			S25-No0076993	S25-No0076994
Date Sampled			Nov 24, 2025	Nov 24, 2025
Test/Reference	LOR	Unit		
Organophosphorus Pesticides				
Dimethoate	0.2	mg/kg	-	< 0.2
Disulfoton	0.2	mg/kg	-	< 0.2
EPN	0.2	mg/kg	-	< 0.2
Ethion	0.2	mg/kg	-	< 0.2
Ethoprop	0.2	mg/kg	-	< 0.2
Ethyl parathion	0.2	mg/kg	-	< 0.2
Fenitrothion	0.2	mg/kg	-	< 0.2
Fensulfothion	0.2	mg/kg	-	< 0.2
Fenthion	0.2	mg/kg	-	< 0.2
Malathion	0.2	mg/kg	-	< 0.2
Merphos	0.2	mg/kg	-	< 0.2
Methyl parathion	0.2	mg/kg	-	< 0.2
Mevinphos	0.2	mg/kg	-	< 0.2
Monocrotophos	2	mg/kg	-	< 2
Naled	0.2	mg/kg	-	< 0.2
Omethoate	2	mg/kg	-	< 2
Phorate	0.2	mg/kg	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2
Pyrazophos	0.2	mg/kg	-	< 0.2
Ronnel	0.2	mg/kg	-	< 0.2
Terbufos	0.2	mg/kg	-	< 0.2
Tetrachlorvinphos	0.2	mg/kg	-	< 0.2
Tokuthion	0.2	mg/kg	-	< 0.2
Trichloronate	0.2	mg/kg	-	< 0.2
Triphenylphosphate (surr.)	1	%	-	111
Polychlorinated Biphenyls				
Aroclor-1016	0.1	mg/kg	-	< 0.1
Aroclor-1221	0.1	mg/kg	-	< 0.1
Aroclor-1232	0.1	mg/kg	-	< 0.1
Aroclor-1242	0.1	mg/kg	-	< 0.1
Aroclor-1248	0.1	mg/kg	-	< 0.1
Aroclor-1254	0.1	mg/kg	-	< 0.1
Aroclor-1260	0.1	mg/kg	-	< 0.1
Total PCB*	0.1	mg/kg	-	< 0.1
Dibutylchlorendate (surr.)	1	%	-	84
Tetrachloro-m-xylene (surr.)	1	%	-	93

Sample History

Where samples are submitted/analysed over several days, the last date of extraction is reported.

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Nov 27, 2025	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Nov 27, 2025	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Nov 27, 2025	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Nov 27, 2025	14 Days
- Method: LTM-ORG-2010 BTEX and Volatile TRH			
Polycyclic Aromatic Hydrocarbons	Melbourne	Nov 27, 2025	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Conductivity (1:5 aqueous extract at 25 °C as rec.)	Melbourne	Nov 27, 2025	7 Days
- Method: LTM-INO-4030 Conductivity			
pH (1:5 Aqueous extract at 25 °C as rec.)	Melbourne	Nov 27, 2025	7 Days
- Method: LTM-GEN-7090 pH in soil by ISE			
Metals M8	Melbourne	Nov 27, 2025	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Melbourne	Nov 25, 2025	14 Days
- Method: LTM-GEN-7080 Moisture			
Eurofins Suite B15			
Organochlorine Pesticides	Melbourne	Nov 27, 2025	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8270)			
Organophosphorus Pesticides	Melbourne	Nov 27, 2025	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS (USEPA 8270)			
Polychlorinated Biphenyls	Melbourne	Nov 27, 2025	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water (USEPA 8082)			

eurofins

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Company Name: Coleman and Adams Environmental Pty Ltd
Address: PO Box R1370
The Royal Exchange
NSW 1255

Project Name:
Project ID: 1534.6

Order No.: NSW-24-0157-COL
Report #: 1297004
Phone: 0424 639 602
Fax:

Received: Nov 25, 2025 6:10 PM
Due: Dec 2, 2025
Priority: 5 Day
Contact Name: Joanna Chen (ALL SRA'S)

Eurofins Analytical Services Manager : Irem Haskara

Sample Detail						Asbestos - AS4964	Eurofins Suite B15	Moisture Set	ENM Exemption Suite -The excavated natural material order 2014 NSW
Melbourne Laboratory - NATA # 1261 Site # 1254							X	X	X
Sydney Laboratory - NATA # 1261 Site # 18217						X			
External Laboratory									
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
1	1534.6.1	Nov 24, 2025		Soil	S25-No0076989	X		X	X
2	1534.6.2	Nov 24, 2025		Soil	S25-No0076990	X	X	X	X
3	1534.6.3	Nov 24, 2025		Soil	S25-No0076991	X		X	X
4	1534.6.4	Nov 24, 2025		Soil	S25-No0076992	X	X	X	X
5	1534.6.5	Nov 24, 2025		Soil	S25-No0076993	X		X	X
6	1534.6.6	Nov 24, 2025		Soil	S25-No0076994	X	X	X	X
Test Counts						6	3	6	6

Internal Quality Control Review and Glossary

General

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

Holding Times

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

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours before sample receipt deadlines as stated on the SRA.

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

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

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

Units

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

Terms

APHA	American Public Health Association
CEC	Cation Exchange Capacity
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where moisture has been determined on a solid sample, the result is expressed on a dry weight basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples, these are performed on laboratory-certified clean sands and in the case of water samples, these are performed on de-ionised water.
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC represents the sequence or batch that client samples were analysed within.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a similar compound to the analyte target is reported as percentage recovery. See below for acceptance criteria.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment; however, free tributyltin was measured, and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 6.0
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should only be used as a guide and may be different when site-specific Sampling Analysis and Quality Plan (SAQP) have been implemented.

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is ≤30%; however, the following acceptance guidelines are equally applicable:

Results <10 times the LOR:	No Limit
Results between 10-20 times the LOR:	RPD must lie between 0-50%
Results >20 times the LOR:	RPD must lie between 0-30%

NOTE: pH duplicates are reported as a range, not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS. SVOCs recoveries 20 – 150%, VOC recoveries 50 – 150%

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

QC Data General Comments

1. Where a result is reported as less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown are not data from your samples.
3. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore, laboratory analysis is unlikely to be completed within holding time.Analysis will begin as soon as possible after sample receipt.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery, the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results, a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data; thus, it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Conductivity (1:5 aqueous extract at 25 °C as rec.)	uS/cm	< 10			10	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	104			70-130	Pass	
TRH C10-C14	%	106			70-130	Pass	
TRH C6-C10	%	106			70-130	Pass	
TRH >C10-C16	%	110			70-130	Pass	
Naphthalene	%	126			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	85			70-130	Pass	
Toluene	%	94			70-130	Pass	
Ethylbenzene	%	98			70-130	Pass	
m&p-Xylenes	%	97			70-130	Pass	
Xylenes - Total*	%	97			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	99			70-130	Pass	
Acenaphthylene	%	108			70-130	Pass	
Anthracene	%	105			70-130	Pass	
Benz(a)anthracene	%	89			70-130	Pass	
Benzo(a)pyrene	%	81			70-130	Pass	
Benzo(b&j)fluoranthene	%	97			70-130	Pass	
Benzo(g.h.i)perylene	%	123			70-130	Pass	
Benzo(k)fluoranthene	%	83			70-130	Pass	
Chrysene	%	107			70-130	Pass	
Dibenz(a.h)anthracene	%	116			70-130	Pass	
Fluoranthene	%	87			70-130	Pass	
Fluorene	%	111			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	115			70-130	Pass	
Naphthalene	%	96			70-130	Pass	
Phenanthrene	%	96			70-130	Pass	
Pyrene	%	83			70-130	Pass	
LCS - % Recovery							
Conductivity (1:5 aqueous extract at 25 °C as rec.)	%	90			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	96			70-130	Pass	
4.4'-DDD	%	96			70-130	Pass	
4.4'-DDE	%	96			70-130	Pass	
4.4'-DDT	%	93			70-130	Pass	
a-HCH	%	95			70-130	Pass	
Aldrin	%	95			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
b-HCH	%	99			70-130	Pass	
d-HCH	%	96			70-130	Pass	
Dieldrin	%	93			70-130	Pass	
Endosulfan I	%	98			70-130	Pass	
Endosulfan II	%	101			70-130	Pass	
Endosulfan sulphate	%	95			70-130	Pass	
Endrin	%	97			70-130	Pass	
Endrin aldehyde	%	97			70-130	Pass	
Endrin ketone	%	94			70-130	Pass	
g-HCH (Lindane)	%	95			70-130	Pass	
Heptachlor	%	96			70-130	Pass	
Heptachlor epoxide	%	91			70-130	Pass	
Hexachlorobenzene	%	98			70-130	Pass	
Methoxychlor	%	92			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	107			70-130	Pass	
Dimethoate	%	97			70-130	Pass	
Ethion	%	108			70-130	Pass	
Fenitrothion	%	86			70-130	Pass	
Methyl parathion	%	112			70-130	Pass	
Mevinphos	%	85			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	96			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	96			80-120	Pass	
Cadmium	%	90			80-120	Pass	
Chromium	%	97			80-120	Pass	
Copper	%	97			80-120	Pass	
Lead	%	103			80-120	Pass	
Mercury	%	87			80-120	Pass	
Nickel	%	96			80-120	Pass	
Zinc	%	99			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	M25-No0079867	NCP	%	97			70-130	Pass	
TRH C10-C14	S25-No0077036	NCP	%	82			70-130	Pass	
TRH C6-C10	M25-No0079867	NCP	%	93			70-130	Pass	
TRH >C10-C16	S25-No0077036	NCP	%	77			70-130	Pass	
Naphthalene	M25-No0079867	NCP	%	101			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	M25-No0079867	NCP	%	93			70-130	Pass	
Toluene	M25-No0079867	NCP	%	88			70-130	Pass	
Ethylbenzene	M25-No0079867	NCP	%	94			70-130	Pass	
m&p-Xylenes	M25-No0079867	NCP	%	93			70-130	Pass	
o-Xylene	M25-No0079867	NCP	%	87			70-130	Pass	
Xylenes - Total*	M25-No0079867	NCP	%	91			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Mercury	B25-No0077490	NCP	%	93			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Zinc	B25-No0077490	NCP	%	80			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S25-No0076990	CP	%	96			75-125	Pass	
Cadmium	S25-No0076990	CP	%	95			75-125	Pass	
Chromium	S25-No0076990	CP	%	100			75-125	Pass	
Copper	S25-No0076990	CP	%	94			75-125	Pass	
Lead	S25-No0076990	CP	%	105			75-125	Pass	
Nickel	S25-No0076990	CP	%	99			75-125	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S25-No0076992	CP	%	88			70-130	Pass	
Acenaphthylene	S25-No0076992	CP	%	88			70-130	Pass	
Anthracene	S25-No0076992	CP	%	103			70-130	Pass	
Benz(a)anthracene	S25-No0076992	CP	%	84			70-130	Pass	
Benzo(a)pyrene	S25-No0076992	CP	%	115			70-130	Pass	
Benzo(b&j)fluoranthene	S25-No0076992	CP	%	89			70-130	Pass	
Benzo(g.h.i)perylene	S25-No0076992	CP	%	100			70-130	Pass	
Benzo(k)fluoranthene	S25-No0076992	CP	%	96			70-130	Pass	
Chrysene	S25-No0076992	CP	%	94			70-130	Pass	
Dibenz(a.h)anthracene	S25-No0076992	CP	%	100			70-130	Pass	
Fluoranthene	S25-No0076992	CP	%	91			70-130	Pass	
Fluorene	S25-No0076992	CP	%	95			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S25-No0076992	CP	%	81			70-130	Pass	
Naphthalene	S25-No0076992	CP	%	89			70-130	Pass	
Phenanthrene	S25-No0076992	CP	%	75			70-130	Pass	
Pyrene	S25-No0076992	CP	%	77			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S25-No0076992	CP	%	108			70-130	Pass	
4.4'-DDD	S25-No0076992	CP	%	93			70-130	Pass	
4.4'-DDE	S25-No0076992	CP	%	111			70-130	Pass	
4.4'-DDT	S25-No0076992	CP	%	96			70-130	Pass	
a-HCH	S25-No0076992	CP	%	96			70-130	Pass	
Aldrin	S25-No0076992	CP	%	90			70-130	Pass	
b-HCH	S25-No0076992	CP	%	91			70-130	Pass	
d-HCH	S25-No0076992	CP	%	94			70-130	Pass	
Dieldrin	S25-No0076992	CP	%	99			70-130	Pass	
Endosulfan I	S25-No0076992	CP	%	109			70-130	Pass	
Endosulfan II	S25-No0076992	CP	%	114			70-130	Pass	
Endosulfan sulphate	S25-No0076992	CP	%	82			70-130	Pass	
Endrin	S25-No0076992	CP	%	106			70-130	Pass	
Endrin aldehyde	S25-No0076992	CP	%	93			70-130	Pass	
Endrin ketone	S25-No0076992	CP	%	84			70-130	Pass	
g-HCH (Lindane)	S25-No0076992	CP	%	82			70-130	Pass	
Heptachlor	S25-No0076992	CP	%	91			70-130	Pass	
Heptachlor epoxide	S25-No0076992	CP	%	94			70-130	Pass	
Hexachlorobenzene	S25-No0076992	CP	%	86			70-130	Pass	
Methoxychlor	S25-No0076992	CP	%	92			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S25-No0076992	CP	%	87			70-130	Pass	
Dimethoate	S25-No0076992	CP	%	90			70-130	Pass	
Ethion	S25-No0076992	CP	%	105			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Fenitrothion	S25-No0076992	CP	%	95			70-130	Pass	
Methyl parathion	S25-No0076992	CP	%	87			70-130	Pass	
Mevinphos	S25-No0076992	CP	%	105			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	S25-No0076992	CP	%	94			70-130	Pass	
Aroclor-1260	S25-No0076992	CP	%	92			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S25-No0076989	CP	mg/kg	3.5	4.4	22	30%	Pass	
Cadmium	S25-No0076989	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S25-No0076989	CP	mg/kg	18	22	18	30%	Pass	
Copper	S25-No0076989	CP	mg/kg	12	13	9.0	30%	Pass	
Lead	S25-No0076989	CP	mg/kg	16	54	110	30%	Fail	Q15
Mercury	S25-No0076989	CP	mg/kg	0.1	< 0.1	26	30%	Pass	
Nickel	S25-No0076989	CP	mg/kg	7.8	8.5	9.0	30%	Pass	
Zinc	S25-No0076989	CP	mg/kg	34	40	18	30%	Pass	
Duplicate									
Sample Properties				Result 1	Result 2	RPD			
% Moisture	S25-No0076869	NCP	%	12	13	6.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S25-No0076990	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S25-No0076990	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S25-No0076990	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S25-No0076990	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C6-C10	S25-No0076990	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S25-No0076990	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Naphthalene	S25-No0076990	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH >C16-C34	S25-No0076990	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S25-No0076990	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S25-No0076990	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S25-No0076990	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S25-No0076990	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S25-No0076990	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S25-No0076990	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S25-No0076990	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S25-No0076990	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S25-No0076990	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S25-No0076990	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S25-No0076990	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S25-No0076990	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S25-No0076990	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S25-No0076990	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S25-No0076990	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S25-No0076990	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S25-No0076990	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S25-No0076990	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Naphthalene	S25-No0076990	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S25-No0076990	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S25-No0076990	CP	mg/kg	4.7	4.7	<1	30%	Pass	
Cadmium	S25-No0076990	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S25-No0076990	CP	mg/kg	18	18	1.0	30%	Pass	
Copper	S25-No0076990	CP	mg/kg	13	13	1.0	30%	Pass	
Lead	S25-No0076990	CP	mg/kg	16	16	2.0	30%	Pass	
Mercury	S25-No0076990	CP	mg/kg	0.2	0.2	<1	30%	Pass	
Nickel	S25-No0076990	CP	mg/kg	9.2	9.2	<1	30%	Pass	
Zinc	S25-No0076990	CP	mg/kg	56	56	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S25-No0076990	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S25-No0076990	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S25-No0076990	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S25-No0076990	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S25-No0076990	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S25-No0076990	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S25-No0076990	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S25-No0076990	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S25-No0076990	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S25-No0076990	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S25-No0076990	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S25-No0076990	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S25-No0076990	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S25-No0076990	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S25-No0076990	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S25-No0076990	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S25-No0076990	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S25-No0076990	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S25-No0076990	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S25-No0076990	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S25-No0076990	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S25-No0076990	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Fensulfothion	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S25-No0076990	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S25-No0076990	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S25-No0076990	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S25-No0076990	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	S25-No0076990	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S25-No0076990	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	S25-No0076990	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	S25-No0076990	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	S25-No0076990	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	S25-No0076990	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	S25-No0076990	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S25-No0076992	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C6-C10	S25-No0076992	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Naphthalene	S25-No0076992	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S25-No0076992	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S25-No0076992	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S25-No0076992	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S25-No0076992	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S25-No0076992	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S25-No0076992	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25 °C as rec.)	S25-No0076993	CP	uS/cm	240	230	7.0	30%	Pass	
pH (1:5 Aqueous extract at 25 °C as rec.)	S25-No0076993	CP	pH Units	8.7	8.6	PASS	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Nileshni Goundar	Analytical Services Manager
Carroll Lee	Senior Analyst-Organic
Dylan Jones	Senior Analyst-Organic
Emily Rosenberg	Senior Analyst-Metal
Joseph Edouard	Senior Analyst-Volatile
Mary Makarios	Senior Analyst-Inorganic
Mary Makarios	Senior Analyst-Metal
Sayeed Abu	Senior Analyst-Asbestos
Sheha Prakash	Senior Analyst-Organic

Glenn Jackson
Managing Director

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

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

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APPENDIX D

DISPOSAL DOCKETS

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	12-Nov-25
Time In	10:23 AM
Time Out	10:45 AM
Rego No	XN09IQ
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	28.02t
Tare	12.92t
Net	15.10t
Docket No	253751
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	12-Nov-25
Time In	10:28 AM
Time Out	11:14 AM
Rego No	CH14UP
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	32.32t
Tare	13.66t
Net	18.66t
Docket No	253755
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	12-Nov-25
Time In	12:15 PM
Time Out	12:54 PM
Rego No	XO78IJ
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	33.26t
Tare	12.68t
Net	20.58t
Docket No	253797
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	12-Nov-25
Time In	12:26 PM
Time Out	12:55 PM
Rego No	XN09IQ
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	32.70t
Tare	12.90t
Net	19.80t
Docket No	253800
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	12-Nov-25
Time In	12:40 PM
Time Out	01:11 PM
Rego No	CH14UP
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	32.50t
Tare	13.64t
Net	18.86t
Docket No	253805
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	12-Nov-25
Time In	01:38 PM
Time Out	02:38 PM
Rego No	XP88MX
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	25.36t
Tare	11.42t
Net	13.94t
Docket No	253826
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	12-Nov-25
Time In	02:14 PM
Time Out	02:51 PM
Rego No	XO78IJ
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	32.76t
Tare	12.64t
Net	20.12t
Docket No	253838
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	12-Nov-25
Time In	02:26 PM
Time Out	03:14 PM
Rego No	CH14UP
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	36.38t
Tare	13.64t
Net	22.74t
Docket No	253841
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	12-Nov-25
Time In	02:34 PM
Time Out	03:16 PM
Rego No	XN09IQ
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	31.62t
Tare	12.88t
Net	18.74t
Docket No	253844
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	19-Nov-25
Time In	10:17 AM
Time Out	10:40 AM
Rego No	XO64UD
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	28.82t
Tare	12.78t
Net	16.04t
Docket No	254495
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	19-Nov-25
Time In	10:19 AM
Time Out	10:51 AM
Rego No	XP99IJ
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	36.56t
Tare	14.98t
Net	21.58t
Docket No	254497
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	19-Nov-25
Time In	10:34 AM
Time Out	11:02 AM
Rego No	XO83XJ
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	31.42t
Tare	12.38t
Net	19.04t
Docket No	254509
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	19-Nov-25
Time In	12:15 PM
Time Out	12:44 PM
Rego No	XP99IJ
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	37.54t
Tare	14.96t
Net	22.58t
Docket No	254541
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	19-Nov-25
Time In	12:24 PM
Time Out	01:03 PM
Rego No	XO64UD
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	30.66t
Tare	12.74t
Net	17.92t
Docket No	254546
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	19-Nov-25
Time In	12:34 PM
Time Out	01:21 PM
Rego No	XO83XJ
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	32.58t
Tare	12.32t
Net	20.26t
Docket No	254553
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	19-Nov-25
Time In	02:13 PM
Time Out	03:03 PM
Rego No	XP99IJ
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	40.56t
Tare	15.08t
Net	25.48t
Docket No	254588
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	19-Nov-25
Time In	02:35 PM
Time Out	03:13 PM
Rego No	XP18NB
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	29.72t
Tare	11.80t
Net	17.92t
Docket No	254592
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	19-Nov-25
Time In	02:52 PM
Time Out	03:17 PM
Rego No	XO83XJ
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	30.88t
Tare	12.36t
Net	18.52t
Docket No	254599
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	20-Nov-25
Time In	09:37 AM
Time Out	09:53 AM
Rego No	XP18NB
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	28.70t
Tare	11.88t
Net	16.82t
Docket No	254662
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	26-Nov-25
Time In	07:58 AM
Time Out	08:26 AM
Rego No	XP69KX
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	28.34t
Tare	11.82t
Net	16.52t
Docket No	255177
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	26-Nov-25
Time In	08:06 AM
Time Out	08:43 AM
Rego No	XP65AC
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	30.28t
Tare	11.78t
Net	18.50t
Docket No	255183
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	26-Nov-25
Time In	08:21 AM
Time Out	08:59 AM
Rego No	XP85CC
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	29.80t
Tare	12.92t
Net	16.88t
Docket No	255188
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	26-Nov-25
Time In	08:31 AM
Time Out	09:02 AM
Rego No	XO98MO
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	29.74t
Tare	12.64t
Net	17.10t
Docket No	255194
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	26-Nov-25
Time In	08:35 AM
Time Out	09:04 AM
Rego No	XP12MI
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	30.28t
Tare	13.92t
Net	16.36t
Docket No	255195
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	26-Nov-25
Time In	09:19 AM
Time Out	09:33 AM
Rego No	XN95FY
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	33.30t
Tare	12.86t
Net	20.44t
Docket No	255203
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	26-Nov-25
Time In	10:20 AM
Time Out	10:46 AM
Rego No	XP69KX
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	31.50t
Tare	11.70t
Net	19.80t
Docket No	255232
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	26-Nov-25
Time In	10:24 AM
Time Out	10:49 AM
Rego No	XP65AC
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	31.42t
Tare	11.74t
Net	19.68t
Docket No	255234
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	26-Nov-25
Time In	10:36 AM
Time Out	11:16 AM
Rego No	XP85CC
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	32.34t
Tare	12.92t
Net	19.42t
Docket No	255236
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	26-Nov-25
Time In	10:53 AM
Time Out	11:19 AM
Rego No	XP12MI
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	31.42t
Tare	13.90t
Net	17.52t
Docket No	255241
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	26-Nov-25
Time In	11:02 AM
Time Out	11:37 AM
Rego No	XN95FY
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	29.10t
Tare	12.84t
Net	16.26t
Docket No	255248
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	26-Nov-25
Time In	12:57 PM
Time Out	01:48 PM
Rego No	XN95FY
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	30.06t
Tare	13.00t
Net	17.06t
Docket No	255287
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	26-Nov-25
Time In	02:24 PM
Time Out	02:46 PM
Rego No	XP65AC
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	30.52t
Tare	11.82t
Net	18.70t
Docket No	255314
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	26-Nov-25
Time In	02:45 PM
Time Out	03:20 PM
Rego No	XP69KX
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	28.96t
Tare	12.06t
Net	16.90t
Docket No	255319
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	26-Nov-25
Time In	03:31 PM
Time Out	03:36 PM
Rego No	XN95FY
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	30.82t
Tare	12.86t
Net	17.96t
Docket No	255323
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	26-Nov-25
Time In	03:59 PM
Time Out	04:04 PM
Rego No	XP12MI
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	30.92t
Tare	13.86t
Net	17.06t
Docket No	255326
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	26-Nov-25
Time In	04:07 PM
Time Out	04:11 PM
Rego No	XP85CC
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	26.90t
Tare	12.84t
Net	14.06t
Docket No	255328
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	03-Dec-25
Time In	12:17 PM
Time Out	12:32 PM
Rego No	XP69KX
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	29.82t
Tare	11.94t
Net	17.88t
Docket No	256061
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date	03-Dec-25
Time In	02:15 PM
Time Out	02:46 PM
Rego No	XP69KX
Company	AKA Contractors Australia Pty Ltd
Product	GSW-Non Putrescible - Tip Rate Only
Gross	26.58t
Tare	11.80t
Net	14.78t
Docket No	256104
Description	Gordon - 810 Pacific Hwy

Thank you for your custom

MET Sydney
ABN: 55 618 935 247

EPL No. 20948

Date 03-Dec-25
Time In 12:17 PM
Time Out 12:32 PM
Rego No XP69KX
Company AKA Contractors Australia Pty Ltd
Product GSW-Non Putrescible - Tip Rate Only
Gross 29.82 t
Tare 11.94 t
Net 17.88 t
Docket No 256061
Description Gordon - 810 Pacific Hwy
GREEN WASTE - ADDITIONAL CHARGE

Thank you for your custom

APPENDIX E

PREVIOUS INVESTIGATIONS

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Contamination | Remediation | Geotechnical

SITE 3 GROUP PTY LTD

Remediation Action Plan

810 Pacific Highway, Gordon, NSW

E26674.E06.Rev0
17 April 2025

Document Control

Report Title:	Remediation Action Plan; 810 Pacific Highway, Gordon, NSW
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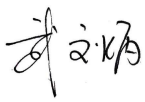	
Cleo Wu Environmental Engineer	**Greg Brickle** Principal Environmental Scientist

Revision	Details	Revision Date	Amended
0	Original	17 April 2025	-

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Executive Summary

EI Australia (EI) was engaged by Site 3 Group Pty Ltd ('the client') to prepare a Remediation Action Plan (RAP) for the property located at 810 Pacific Highway, Gordon, NSW ('the site')

The site is located within the local government area (LGA) of Ku-Ring-Gai Council (Council) (**Figure 1**, **Appendix A**) and is identified as Lot 12, in Deposited Plan (DP) 631351, covering a total area of 2,400 m^2.

At the time of site investigation the site was occupied by a remnant three-storey (derelict / concrete) building, with site surfaces were covered with concrete hardstand (towards Radford Place) and vegetation with soil access towards Pacific Highway.

Council issued a Notice of Determination (NOD) of Development Application (DA) – DA0610/17 (date of determination 12 December 2018 as a deferred commencement). Conditions 6 (Notice of proposed work (contaminated land)) and 19 (Remediation and validation) relate to management of contamination.

This RAP follows previous environmental investigations completed for the site (summarised in **Section 3**), which identified elevated concentrations of contaminants of concern in soil and groundwater exceeding the adopted site criteria, requiring remediation.

The proposed development is demolition of existing structures then construction of a mixed use retail/commercial and residential building overlying a loading dock and a four level basement car park. The retail/commercial component will occupy a single ground floor level, and residential apartments will be provided on levels L1 to L8. The basement footprint will occupy the majority of the site area, with minor setback areas provided at northeast and southeast areas. The site surface profile slopes down by around 8 m from northeast (Pacific Highway) to southwest (Radford Place). The finished floor level (FFL) of basement 4 is RL 107.97 mAHD and the basement FFL will be approximately 20 m below ground level (BGL) in the east of the site and approximately 10 mBGL in the west of the site.

The eastern site boundary will be shifted back from the current alignment along Pacific Highway. The setback area (approximately 3.5m in width) will be dedicated to Transport for NSW (TfNSW) for road widening.

Remediation of identified carcinogenic PAH-impacted fill soils at TP101 was deemed required to render the site suitable for the proposed development.

The purpose of this RAP is to establish a sequential process for remediation and validation works, to support the proposed site redevelopment in compliance with the *State Environment Protection Policy (Resilience and Hazards) 2021* and satisfy conditions 6 and 19 of NOD of DA0610/17 issued by Ku-Ring-Gai Council.

The objectives of this RAP, as outlined in **Section 1.3**, have been addressed and the selected, preferred remedial approach will involve the excavation of impacted materials, followed by waste classification and off-site disposal according to NSW EPA (2014). Alternatively, the remedial approach can be conducted as in-situ waste classification, followed by excavation of impacted materials, bulk load-out, and offsite disposal. It is envisaged that the remediation works will be implemented in stages, as follows:

- **Stage 1 –** Site establishment and preparation;
- **Stage 2 –** Building demolition and post–demolition clearances;

- **Stage 3 –** Additional soil sampling in northeast and south east setbacks and general fill in north east portion

Hold Point

- **Stage 4 –** Waste classification and Off-Site Disposal of Soil
- **Stage 5 –** Due Diligence investigation within TfNSW dedicated area;
- **Stage 6 –** Site validation; and
- **Stage 7 –** Preparation of a Validation Report.

This RAP provides protocols for the appropriate management of any unexpected finds that may be discovered during the course of the remediation works. In addition, should any phase of the validation assessment identify residual contamination requiring additional remediation, the procedures described under the validation sampling, analysis and quality plan (SAQP) (**Section 9**) will be implemented until the remediation goals have been achieved and the site is deemed suitable for its proposed future use.

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1. INTRODUCTION

1.1 Background

EI Australia (EI) was engaged by Site 3 Group Pty Ltd ('the client') to prepare a Remediation Action Plan (RAP) for the property located at 810 Pacific Highway, Gordon, NSW ('the site').

The site is located within the local government area (LGA) of Ku-Ring-Gai Council (Council) (**Figure 1**, **Appendix A**).and is identified as Lot 12, in Deposited Plan (DP) 631351, covering a total area of 2,400 m^2 (**Figure 2**, **Appendix A**).

Council issued a Notice of Determination (NOD) of Development Application (DA) – DA0610/17 (date of determination 12 December 2018 as a deferred commencement). Conditions 6 and 19 relate to management of contamination:

- *Condition 6, Notice of proposed work (contaminated land): A notice of proposed work form must be given to Council's Development Assessment officer, in accordance with SEPP 55, Clause 16.*
- *Condition 19, Remediation and validation: Prior to the commencement of any works, a RAP shall be prepared, subject to the recommendations in Section 10.1 of the Phase II Environmental Site Assessment Report, prepared by EIS, dated 9.12.16. Prior to the commencement of any works other than demolition works, the site shall be remediated in accordance with the RAP and a Validation Report issued by a suitably qualified expert concluding that the site has been appropriately remediated for the approved future use.*

This RAP follows previous environmental investigations completed for the site (summarised in **Section 3**), which identified elevated concentrations of contaminants of concern in soil and groundwater exceeding the adopted site criteria, requiring remediation.

1.2 Proposed Development

The client provided design drawings for the proposed development (ref: PBD Architects, project no. 2432, 5 March 2025; **Appendix B**). The proposed development is demolition of existing structures then construction of a mixed use retail/commercial and residential building overlying a loading dock and a four level basement car park. The retail/commercial component will occupy a single ground floor level, and residential apartments will be provided on levels L1 to L8.

The basement footprint will occupy the majority of the amended site area, with minor setback areas provided along the eastern boundary. The site surface profile slopes down by around 8 m from northeast (Pacific Highway) to southwest (Radford Place). The finished floor level (FFL) of basement 4 is RL 107.97 mAHD. The basement FFL will be approximately 20 m below ground level (BGL) in the east of the site and approximately 10 mBGL in the west of the site. Locally deeper excavations may be required to accommodate footings, service trenches, crane pads and lift overrun pits.

The eastern site boundary will be shifted back from the current alignment along Pacific Highway. The setback area (approximately 3.5m in width) will be dedicated to Transport for NSW (TfNSW) for road widening.

1.3 Objectives

The main objectives of this RAP are to set the validation targets and to document the processes required to remediate the site. These will, in turn, require achieving the following sub-objectives:

- To provide details on how to close any identified data gaps;
- To provide details on the contaminant sources and site impacts;
- To detail the procedures to be implemented for site remediation and validation;
- To demonstrate that the proposed remediation strategy for the site is environmentally justifiable, practical and technically feasible, and that it poses no unacceptable risks to onsite and offsite receptors;
- To define the site acceptance criteria (SAC), which, once achieved, will render the site suitable for its future proposed use.
- To demonstrate that the plans for site management during remediation consider work health and safety, environmental management, and contingent actions that may be triggered should unexpected finds be discovered during the site remediation and validation works.

1.4 Scope of Works

The above objectives will be achieved by completing the following tasks:

- Review of the available data relevant to the remediation of the site, provided by the previous investigation reports;
- Definition of remediation goals and acceptance criteria;
- Evaluation of available remediation options and selection of the most appropriate remedial strategy (or combination of strategies) for the site;
- Description of the remedial works to be carried out in accordance with relevant laws and regulations;
- Provision of information to assist the contractor in the preparation of a Work Health and Safety Plan (WHSP) and other site management/planning documents; and
- Development of a Sampling and Analysis Quality Plan (SAQP) for delineation of hotspot locations and for the post-remedial validation works.

1.5 Regulatory Framework

The following legislation, guidelines and standards were considered during the preparation of this RAP:

Legislation

- *Contaminated Land Management Act 1997* (CLM Act);
- *State Environment Protection Policy (Resilience and Hazards) 2021;*
- *Ku-ring-gai Local Environmental Plan 2015* (LEP 2015);
- *Ku-ring-gai Development Control Plan 2022* (DCP 2022);
- *Water Management Act 2000* (Water Act);

- *Work Health and Safety Act 2011* (WHS Act) and associated regulations and codes of practice.

Guidelines

- ANZG (2018) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*;
- NHMRC (2008) Guidelines for Managing Risks in Recreational Water;
- NHMRC (2024) Australian Drinking Water Guidelines 6, version 3.9;
- NSW EPA (2014) *Waste Classification Guidelines*;
- NSW EPA (2017) *Guidelines for the NSW Site Auditor Scheme*;
- NSW EPA (2020a) *Consultants reporting on contaminated land, Contaminated Land Guidelines*;
- NSW EPA (2022) *Sampling Design Part 1 - Application*;
- NEPC (2013) *National Environment Protection (Assessment of Site Contamination) Amendment Measure*.

1.6 Deviations from RAP

During the course of the remediation programme, it may become necessary to vary the sequence and/or details of the site remediation and validation works to meet site constraints. EI notes that any deviation from the methodology specified in this RAP is to be properly documented and approved, as required under existing guidelines (NSW EPA, 2020a).

Performing remedial works without the supervision of a qualified environmental engineer/scientist may lead to project delays and extra costs, due to additional investigation requirements imposed by an independent consultant, or an NSW EPA accredited auditor appointed to the site ('the Site Auditor'), to confirm the environmental status of the site.

In worst case scenarios, waste materials removed from the site without proper characterisation and/or tracking, may lead to regulatory action and potential penalties, as described under the *Waste Regulation 2014* and the *Contaminated Land Management Act 1997*.

2. SITE DESCRIPTION

2.1 Property Identification, Location, and Physical Setting

The site identification details and associated information are presented in **Table 2-1**.

Table 2-1 Site Identification

Attribute	Description
Street Address	810 Pacific Highway, Gordon, NSW
Location	Approximately 12.5 km north-west of Sydney CBD, bound by Ku-ring-gai Council building (north), Pacific Highway (east), Radford Place (west) and Dumaresq Street (south).
Site Coordinates	South-eastern corner of site (GDA2020-MGA56): ▪ Easting: 328832.104; ▪ Northing: 6263555.701. (Source: http://maps.six.nsw.gov.au)
Site Area	2,400 m^2 (Source: Sixmap 2025)
Lot and DP	Lot 12, in DP 631351
Survey Marks	Three survey marks are located within close proximity (<50m) to the site: ▪ SS166470 F: at the intersection of Park Avenue and Pacific Highway; ▪ SS166471 F: south-east corner of the site; and ▪ SS43490 D: north-west corner of the site. (Source: http://maps.six.nsw.gov.au)
Local Government Area	Ku-Ring-Gai Council
Current Zoning	E1: Local Centre CA: Complex Area (*Ku-ring-gai Local Environmental Plan 2015*)

2.2 Local Land Use

The site is located within an area primarily used for commercial purposes, as described in **Table 2-2**. The local sensitive receptors within close proximity (<100 m) to the site are also identified in this table.

Table 2-2 Local Land Uses

Direction	Land Use Description	Sensitive Receptor (distance from site)
North	Commercial properties (Council offices and a child care) Residential properties	Business users (immediately adjacent to the northern boundary) Residents (<70m) A child care (<30m north)
South	Commercial properties Residential properties	Business users (<20 m south) Residential (<50m south-east)
East	Commercial properties (offices and retail)	Business users (<50m)
West	On-grade carpark Residential properties	Residents (<50 m)

2.3 Regional Setting

The topography, hydrogeology, geology and soil landscape information are summarised in **Table 2-3**.

Table 2-3 Regional Setting

Attribute	Description
Topography	The site is situated on steep terrain, with elevations slope from 128 metre Australian Height Datum (mAHD) in north-east to 120 mAHD in south-west. (https://meconemosaic.au/)
Site Drainage	On-site stormwater is expected to flow to the surrounding municipal collection system.
Regional Geology	A review of eSPADE v2.2 (DCCEEW, 2025) indicates that the site is underlain by Ashfield Shale of the Wianamatta Group, consisted of black to dark grey shale and laminite.
Soil Landscapes	A review of eSPADE v2.2 (DCCEEW, 2025) indicates that the local landscape is gently undulating to rolling low hills on Wianamatta Group shales. Narrow ridges, hillcrests and valleys.
Acid Sulfate Soil (ASS) Risk	A review of eSPADE v2.2 (DCCEEW, 2025) indicates that the site lies within the area of *No Known Occurrence*. *Ku-ring-gai Local Environmental Plan 2015 LEP_001 Acid Sulfate Soils Maps shows* that the site is within a *Class 5* area with respect to ASS, indicating that Council Consent is required for excavation works within 500m of adjacent *Class 1, 2, 3 or 4* land that is below 5 mAHD. A review of eSPADE v2.2 (DCCEEW, 2025) indicates no sites within 500m distance to the site are under *Class 1, 2, 3 or 4*. Therefore, the risk of exposing potential ASS on-site during bulk excavation is considered low.
Nearest Surface Water Feature	Blackbutt Creek is located 850m south-west of the site, connects to Lane Cove River. Given the distance to the site, Blackbutt Creek is not considered as an ecological receptor.
Groundwater Flow Direction	Groundwater flow direction in the area was inferred to be south-westtowards Blackbutt Creek, which is a freshwater ecological environment.

3. PREVIOUS INVESTIGATION

Relevant previous investigations completed at the site include:

- EIS [1] (2016a) *Stage 2 Environmental Site Assessment for Proposed Mixed Use Development, at 810 Pacific Highway, Gordon NSW*, prepared by Environmental Investigation Services Pty Ltd, ref: E29430Krpt2, dated 9 December 2016;
- JK (2016b) *Geotechnical Investigation to ALDI Corporate Property Development Department for proposed Mixed Use Development at 810 Pacific Highway, Gordon NSW*, prepared by JK Geotechnics Pty Ltd, ref: 29430ZN2rpt, dated 16 September 2025; and
- Geotechnics (2022) *Proposed Development 810 – 818 Pacific Highway Gordon Reporting on Geotechnical Investigation,* prepared by Geotechnics Pty Ltd, ref: 20113/1-AA, dated 21 January 2025.

A data gap investigation is currently being prepared for the site by EI Australia. A summary of the impacts and the quality of soil, groundwater and soil vapour is provided in **Section 4**.

A summary of the relevant components of the above reports is provided in **Table 3-1**.

Table 3-1 Summary of Previous Investigations

Assessment Details	Project Tasks and Findings
Stage 2 Environmental Site Assessment (‘*the Stage 2 ESA report*’) – EIS 2016a	
Scope of Works and Key Findings	EIS (2016a) referenced that a Preliminary Environmental Site Assessment (herein refer to as ‘the Preliminary ESA’) was conducted in August 2016 and concluded that a moderate to high contamination risk was present on the site. The EIS developed CSM identified the following areas of environmental concern (AECs) at the site: ▪ Fill materials (Entire Site): fill materials of unknown origin and quality may have been used to establish the existing ground levels. ▪ Service Station Facility: The site may have operated as a service station (and mechanics workshop) in the 1950’s, indicating the potential presence of UST(s) and AST (s) on the site, which could have led to contamination from leakage and spillage of petroleum hydrocarbons. ▪ Past Commercial Activities: former businesses including mechanics workshop / welders / battery service station occupied the site sometime between 1941 and 1976. ▪ Hazardous Building Materials: The on-site building structures were established prior to the 1990’s. Any hazardous building materials were used could pose a potential contamination risk during demolition / development phases. **Note**: The preliminary ESA of EIS was not provided to review however the findings were incorporated into the Stage 2 ESA. The locations of the service station and mechanics workshop, within the subject site were not identified by EIS (2016). Review of aerial photos and mapping data bases determined the following: ▪ The service station/mechanics workshop was likely located in the south-eastern portion of the site and was demolished around 1982. ▪ A multi-storey commercial building was constructed on the site between 1982 and 1991. The building was demolished between 2022 and 2024. The Stage 2 ESA investigation, involved collection of soil samples from nine sampling

[1] EIS a division of JK Geotechnics to provided environmental services.

Assessment Details	Project Tasks and Findings
	points (BH101 to BH109) with a solid flight auger to depths ranging from 0.75 to 6.0 mBGL and analysis for eight priority metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, and zinc), organochlorine pesticides (OCP) / organophosphorus pesticides (OPP), total recoverable hydrocarbons (TRH), polycyclic aromatic hydrocarbons (PAH), benzene, toluene, ethylbenzene, xylenes, and naphthalene, and asbestos. Hydrocarbon odour was noted during drilling of MW5 (Note: EIS (2016) identified monitoring wells MW1 to MW5 as BH1 to BH5). An elevated concentration of petroleum hydrocarbons (as TRH-F1) was found at the natural soil layer at BH105 (2.8-3.0 mBGL) above adopted NEPC (2013) health-based assessment and ecological criteria. Zinc at BH102 (0.0-0.2mBGL) was above the ecological-based assessment criteria. EIS (2016) analytical results have been included in results summary in **Table 2**, **Appendix A**. Four groundwater monitoring wells (MW1, MW2, MW3 and MW5) were installed to depths ranging from 10.70 mBGL to 19.35 mBGL, with the measured standing water level (SWL) ranging from 11.12 to 11.81 mBGL. MW2 was dry during both groundwater sampling events (GME). Two rounds of GMEs were conducted from three installed wells during both the preliminary and *Stage 2 ESA (EIS, 2016a)*. The following groundwater investigation levels (*GILs*) were adopted by EIS (2016a) for the site: ▪ ANZECC Australian Water Quality Guidelines for Freshwater (ANZECC 2000) – trigger values for protection of 95% species; ▪ NHMRC Australian Drinking Water Guidelines (ADWG 2011); ▪ World Health Organisation (WHO) 2008, Petroleum Products in Drinking Water. The analytical results obtained during both GME rounds indicated the elevated concentrations of nickel and zinc (exceeding adopted ecological criterion) were reported in all three groundwater samples. Elevated concentrations of benzene, ethylbenzene, naphthalene and petroleum hydrocarbons (as TRH-F1 and TRH-F2) exceeding the adopted ecological criteria in MW5. EIS (2016a) provided the following recommendations: ▪ Further assessment of the areas beneath the existing buildings. ▪ Preparation of a remedial action plan (RAP) to remediate the identified contamination. ▪ Further characterisation of the nature and extent of the impacts from the volatile contaminants and the results are to inform a quantitative human health risk assessment (HHRA).
Geotechnical Investigation – JK Geotechnics 2016b	
Scope of works and key findings	▪ Six bores (BH1, BH2, BH3, BH4, BH4A and BH5) were drilled to depths between 11.89 mBGL and 19.35 mBGL during the geotechnical investigation. ▪ The subsurface conditions included a layer of fill material comprising silty clay, sand, and clayey sand, encountered beneath a layer of concrete pavement measuring 150-250mm in thickness. The deepest filling material extended to 9.6m below ground level (mBGL) at BH3, which is located uphill along northern boundary of the site. ▪ The natural materials encountered on the site included silty clay of high plasticity on top of weathered shale bedrock. No groundwater seepage was observed during drilling. ▪ Standing water level (SWL) measurement taken on 22 August 2016 ranged from 10.7 to 11.4 mBGL from wells BH1 (MW1), BH3 (MW3) and BH5 (MW5). BH2 (MW2) was dry at the time of measurement.

Assessment Details	Project Tasks and Findings
	▪ Laboratory pH testing of groundwater was conducted at varied depths from tested bores, with measurements ranging from pH 4.5 to 8.6.
Geotechnical Investigation – Geotechnique Pty Ltd 2022	
Scope of works and key findings	▪ One borehole (BH101) was drilled to a depth of 11.3 mBGL. Reported lithology comprised 9.5 m of fill materials (sandy silt / silty clay / sand) overlying bedrock (shale). Borehole BH101 was located in the north-eastern corner of the site. No groundwater seepage was encountered during drilling.

4. CONCEPTUAL SITE MODEL

In accordance with the developed conceptual site model (CSM) from previous investigations and NEPC (2013*) Schedule B2 - Guideline on Site Characterisation*, EI refined the CSM as part of the investigation phase, assessing plausible linkages between potential contaminations sources, exposure pathways and receptors, based on the identified contaminants from the latest investigation (EI, 2025).

4.1 Subsurface Conditions

The site elevation varies from 128 mAHD in the north-east (towards Pacific Highway) to 120 mAHD in the south-west (towards Radford Place), indicating a total surface elevation change of approximately 8 metres.

EIS (2016) completed a site investigation eight boreholes (BH101 to BH108) were drilled at accessible areas of the site which generally the outside perimeter of the existing building.

EI (2025) completed a site investigation in which eight test pits (TP101 to TP108) were excavated to a maximum depth of 4.0 mBGL of fill materials (terminated on the deep fill) in the eastern portion.

With reference to the previous investigations (**Section 3.1**), a layer of deep filling (to a maximum depth of 9.6 mBGL) was observed in the north-eastern portion, and a shallow fill layer (to the maximum depth of 0.2 mBGL) was observed in the western portion. Natural residual clay was encountered at a minimum depth of 3.7 mBGL in the eastern portion and bedrock (shale) was observed at a minimum depth of 0.2 mBGL beneath the concrete hardstand in the western portion.

Fill in the TP101 was observed to have foreign inclusions described as fragments of metal, plastic, brick, concrete and nylon pipe. Bitumen fragments were also observed in fill at TP101 and TP102. Foreign inclusions in fill appear to be limited in extent in the north-eastern portion to the vicinity of TP101, as these were not reported in previous intrusive investigations.

The general site lithology encountered during the data gap investigation (EI, 2025) are divided into two sections for deep and shallow fill layers across eastern and western portions of the site. The north-eastern portion consisted of extensive filling, possibly to raise site levels. The western portion appeared to have been cut into natural ground, with shallow fill and shallow bedrock observed, suggesting that excavation was carried out for previous construction purposes. More details are provided in **Table 4-1**.

Table 4-1 Generalised Subsurface Profile (EI, 2025)

Layer	Description	Minimum / maximum depth of layer (mBGL)
Deep FILL (eastern portion)	Gravelly SAND; brown, fine to medium grained sand, angular to sub-angular gravels, with fragments of metal, plastics, bricks, concrete, nylon pipes. Fibre cement sheeting observed in test pits TP101 and TP102.	3.2 – 4.0
Shallow FILL (western portion)	Gravels and aggregates beneath a layer of concrete slab (0.15-0.2m in thickness)	0.15 – 0.4

Layer	Description	Minimum / maximum depth of layer (mBGL)
NATURAL (eastern portion)	Sandy CLAY; red with grey mottles, medium plasticity, weathered clay, siltstone.	3.5 – 3.7+
BEDROCK (western portion)	SHALE; grey, with red iron.	0.3 – 0.6+

Note 1 **'+'** denotes material detected at refusal on bedrock or at termination depth.

4.2 Soil Impacts

Contaminants identified in the representative soil samples are summarised below (see **Figure A2, Appendix A**). A summary results table are presented in **Tables C1** and **C2**, **Appendix C**:

Human Health:

- Elevated concentrations of carcinogenic PAHs exceeded adopted human health criterion (HIL-B, 4 mg/kg), in at TP101_0.9-1.1 (19 mg/kg) and TP101_2.9-3.0 (6.4 mg/kg).
  - Testing on the samples by toxicity characteristic leaching procedure (TCLP) determined that benzo(a)pyrene (B(a)P) was not leachable. The other analytes defined as carcinogenic PAHs are also likely to be not leachable.
  - Bitumen fragments were also observed in fill at TP101, and may be a source of carcinogenic PAHs. NEPC (2013) (Schedule B1, p49) indicated where the B(a)P occurs in bitumen fragments it is relatively immobile and does not represent a significant health risk.
  - TP101 is located within the basement footprint and soil represented by it will be excavated as surplus material for basement construction.
- Asbestos was not detected at limit of reporting (LOR) of 0.01% w/w in fill at any sampling location investigated by EIS (2016) or EI (2025).

Ecological:

- No exceedance of ecological criteria were reported by EIS (2016) or EI (2025) for locations within proposed deep soil areas.

Note: EIS (2016) reported TRH-F1 (250 mg/kg) in bedrock at location BH105 (2.8 – 3m depth) in the southeast part of the site. EIS (2016) also reported hydrocarbon odour and a PID reading of 1,031 ppm at 3m BGL. BH105 is located within the dedicated area for road widening of the Pacific Highway, and there is no exceedance of the applicable human health criterion (HSL-D).

4.3 Groundwater Impacts

During the GME on 19 March 2025, depth to water was recorded to range from 10.06 mBGL at MW1 (western portion) to 11.47 mBGL at MW5 (eastern portion). Well MW203 (eastern portion) was screened deeper in the formation and depth to water was 18.47mBGL. Groundwater flow direction was inferred to be southwest, towards Blackbutt Creek (850 m from the site).

With reference to **Table C3**, **Appendix C**, contaminant concentrations in groundwater were generally compliant with the adopted criteria, with the exception of the following:

- Cadmium, nickel and zinc were detected in groundwater at concentrations above the adopted criteria, at well MW203. MW203 is screened deep in the formation and is at the up-

gradient boundary. Concentrations of priority metals in site soil were low, indicating that site soil was unlikely to contribute to reported metals in groundwater. The metals reported in groundwater are likely representative of the local disturbed urban background conditions.

- TRH-F1 and TRH-F2 were detected in well MW203, TRH-F2 was detected at MW1 and TRH-F1 and TRH-F2 were detected at MW5, at relatively low concentrations above laboratory LOR.
  - In previous investigation by EIS (2016), TRH-F1 (2,600 ug/L), TRH-F2 (1,000 ug/L), benzene (1,400 ug/L) and ethylbenzene (110 ug/L) were reported in MW5 at higher concentrations. Reported concentrations did not exceed adopted health based criteria (HSL-D). MW5 screen interval is 5.85 m to 19.35 mBGL (**Table 3-2**). This indicates remnant impact o was present in the sub surface in the southeast portion from former service station operations at that time.
  - Detections of lower concentrations of TRH-F1 (310 ug/L), TRH-F2 (290 ug/L), and negligible benzene (1.1 ug/L) and ethylbenzene (0.7 ug/L) at MW5 in most recent investigation (EI 2025) indicate that remnant impact from former service station operations has diminished substantially over time.

Groundwater samples from MW1, MW5 and BH103 were subjected to silica gel clean up, and TRH-F1 and TRH-F2 were reported below LOR. This indicates that hydrocarbons (as TRH-F1, F2) reported in groundwater were naturally occurring. Shale, which is present at the site, is likely to be the natural source of hydrocarbons reported in groundwater.

4.4 Soil Vapour Impacts

Concentrations of BTEXN, TRH and VOCs compounds were reported below the LOR in soil vapour samples.

The risk to human health posed by these compounds in soil vapour can be considered to be low.

4.5 Potential sources, Exposure Pathways and Receptors

Based on previous investigations (**Section 3.1**), the potential contamination sources, exposure pathways and human and environmental receptors that were considered relevant for this RAP are summarised in **Table 4-2.**

4.6 Data Gaps

The refined CSM listed in **Table 4-2** was considered to appropriately identify contamination sources, migration mechanisms and exposure pathways, as well as potential on-site and off-site receptors. However, the following data gaps still require further assessment:

- Further characterisation of fill in the northeast set back area.
- Further characterisation of fill in the southeast setback area, particularly in the vicinity of the palm tree, where access was restricted due to a tree preservation order.
- Clarification of whether infrastructure or remnant impact from the former service station remains in the southeast portion of the site. Note that construction of multi-storey building, (constructed in 1980s and largely demolished between 2022 and 2024) likely removed significant impact if present. Underground services may remain beneath this setback area, and should be managed in accordance with unexpected finds protocol outlined in **Section 8.6**

- Additional characterisation of the dedicated strip to meet Transport for NSW requirements for hand over. A request for a baseline environmental assessment should be made to TfNSW if needed, to support further characterisation of the soils within the area.
- Extent of fill in the vicinity of location TP101 which is potentially classifiable as restricted solid waste due to elevated concentration of B(a)P.
- Characterisation of surplus material for waste classification purposes including
  - The extent of fill containing elevated concentrations of PAHs in the vicinity of TP101;
  - Increasing the sampling frequency for in situ waste classification of surplus material;

Table 4-2 Conceptual Site Model

Potential Sources	Impacted Media	Contaminants of Potential Concern	Transport mechanisms	Exposure pathways	Potential receptors	Source-Pathway-Receptor (SPR) Linkages
Imported fill material Former land use Hazardous building waste	Soil	8 PMs, TRH, BTEX, PAHs, OCPs, OPPs, PCB, PFAS, phenols, VOCs, and asbestos.	Disturbance of surface and subsurface soils during site redevelopment, future site maintenance and future use of the site post redevelopment. Atmospheric dispersion from soil to outdoor and indoor air spaces. Volatilisation of contamination from soil and diffusion to indoor air spaces.	Ingestion Dermal contact Inhalation of particulates Inhalation of vapours	Demolition / construction workers Future site users Adjacent site users	**Post construction** **Set Back Areas** Ingestion & Dermal contact **potentially complete** Investigation to date, limited Further investigation required **Basement footprint**: No source, No pathway **During construction** **Basement Footprint & Set backs** **Potentially complete with a low probability** Elevated concentrations of carcinogenic PAHs exceeding human health criterion reported at one location. Soil represented by it will be excavated as surplus material for proposed basement construction. Construction and intrusive workers are expected to use personal protective equipment (PPE), as per SafeWork NSW regulations.
	Groundwater	Metals, TRH,	Volatilisation of contamination from groundwater to indoor or outdoor air spaces (onsite and offsite). Disturbance of surface and subsurface soils during site redevelopment, future site maintenance and future use of the	Ingestion Dermal contact Volatilisation/Inhalation	Future site users Demolition / construction workers Future intrusive workers	**Post Construction** Ingestion, Dermal contact, Inhalation: No pathway **During construction** **Potentially Complete with a low probability**

Potential Sources	Impacted Media	Contaminants of Potential Concern	Transport mechanisms	Exposure pathways	Potential receptors	Source-Pathway-Receptor (SPR) Linkages
			site post redevelopment.			The proposed development (**Section 1.2**) will involve the construction of a four-level basement, with estimated excavation depths of varying from 10 to 20 mBGL between eastern and western portions. Standing water level (SWL) measurement taken on 19 March 2025 ranged from 10.06 to 18.47 mBGL across the site area. Therefore, groundwater was expected to be intersected during bulk excavation. Temporary dewatering likely required Construction and intrusive workers are expected to use personal protective equipment (PPE), as per SafeWork NSW regulations.
	Soil Vapour	TRH, BTEXN, and VOCs	Volatilisation from contaminated soil or groundwater, forming soil vapour that migrates through the vadose zone. Soil vapour migration (Advection and Diffusion): ▪ Advection: movement driven by pressure differences, e.g. building HVAC systems creating a pressure gradient. ▪ Diffusion: movement from high to low concentration areas, driven by	Direct contact with contaminated soil / groundwater (during excavation or maintenance or landscaped area). Structural joints and cracks. Joints around utility penetrations (e.g. pipes, cables). HVAC systems can create negative		**Incomplete.** Inhalation: No source Concentrations of BTEXN, TRH and VOCs compounds were reported below the LOR in all samples.

Potential Sources	Impacted Media	Contaminants of Potential Concern	Transport mechanisms	Exposure pathways	Potential receptors	Source-Pathway-Receptor (SPR) Linkages
			concentration gradients. Vapour Intrusion into Buildings though cracks in foundations, and utility penetrations	pressure, drawing vapours through joints and cracks into indoor air.		

5. REMEDIATION GOAL AND CRITERIA

5.1 Remediation Goal

The remediation goal is to render the site suitable for its proposed residential future use, in line with *State Environment Protection Policy (Resilience and Hazards) 2021* and Council's contaminated land policy.

5.2 Site Acceptance Criteria (SAC)

Based on the proposed development (**Section 1.2**), on previous investigation results (**Section 3.1**) and on the refined CSM (**Section 4**), the SAC outlined in **Table 5-1** were selected as the most appropriate, with individual criteria values tabulated within **Appendix C**. These were selected from statutory Tier 1 NSW EPA made or approved guidelines, or non-statutory NSW EPA published or endorsed guidelines (where necessary), with due consideration of the exposure scenario that is expected for the site, the likely exposure pathways and the identified potential receptors.

Table 5-1 Site Acceptance Criteria (SAC)

Medium	Guidelines	Rationale
Soil	NEPC (2013) HILs, HSLs, Management Limits for TRH, and EIL / ESL; NSW EPA (2014); and HEPA (2025)	**Soil Health-based Investigation Levels (HILs)** ▪ NEPC (2013) *HIL-B* thresholds for land setting of residential with minimal soil access for development area. Includes set back areas (**Figure 3, Appendix A**) as these will be paved or set in planter boxes limiting sub soil access. ▪ NEPC (2013) *HIL-D* thresholds for land setting of commercial / industrial for the dedicated area. **Soil Health-based Screening Levels (HSLs)** NEPC (2013) soil vapour *HSL-D* thresholds for commercial / industrial land uses were applied to assess potential human health impacts from residual vapours resulting from petroleum, BTEX and naphthalene, as per Section 2.4.8, Schedule B1, NEPC (2013). The most conservative soil texture (sand) has been assumed when selecting the representative lithology for the HSLs. **For asbestos:** ▪ No visible asbestos on soil surface in all areas of the site; and ▪ Absence in the soil samples (<0.01% w/w). **Management Limits for Petroleum Hydrocarbons** Where the HSLs and ESLs for petroleum hydrocarbons were exceeded, sample results were also assessed against the NEPC (2013) *Management Limits* for the F1-F4 TRH fractions, to assess propensity for phase-separated hydrocarbons (PSH), fire and explosive hazards and adverse effects on buried infrastructure, for the land use of residential, parkland, and public open space. **Waste Classification threshold for in-situ soils** The NSW EPA (2014*) Waste Classification Guidelines – Part 1* provides maximum contaminant concentration values with and without corresponding leachability thresholds, to determine the appropriate waste classification for the offsite disposal of excavated soils.

Medium	Guidelines	Rationale
		National Chemicals Working Group of the Heads of EPA Australia and New Zealand (HEPA) PFAS National Environmental Management Plan (3.0) Guidelines Table 5 – Human Health Investigation Levels for Soil, for the land use of residential with minimal opportunities for soil access (HIL B). The direct exposure ecological soil guideline applies specifically to the protection of organism that lives within, or in close contact with soil, such as earthworms and plants. This direct exposure value can be used to assess the possibility of direct harm to these organisms. **Ecological Investigation / Screening Levels (EILs/ESLs)** EILs / ESLs were considered relevant for retained deep soils of the amended site, outside the basement footprint and excluding the dedicated area (**Figure 3**, **Appendix A**). EILs / ESLs only apply to the top 2 m (root zone) for urban residential and public open space. Assumptions of CEC of 7 cmolc/kg and pH of 7, high traffic volume and aged suburb are made to select the most suitable values for EILs.
Groundwater	ANZG (2018) GILs for Marine and Fresh Waters	**Groundwater Investigation Levels (GILs) for Fresh Waters** ANZG (2018) provides GILs for typical, slightly-moderately disturbed aquatic ecosystems, Trigger Values (TVs) for the 95% level of protection of aquatic ecosystems were applied. Regional topography indicated that the inferred groundwater flow is in a south-westerly direction, towards Blackbutt Creek, which is a freshwater ecological environment. For Copper and zinc, NSW EPA site auditors accept one order of magnitude higher than GIL due to elevated regional background levels. In lacking of the criteria for TRH (F1 to F4), the analytical results will be assessed against the Practical Quantification Limit (PQL). **Health-based Screening Levels (HSLs)** The NEPC (2013) groundwater HSLs for vapour intrusion was used to assess potential human health impacts from residual vapours resulting from petroleum, BTEX and naphthalene impacts. The *HSL-D* thresholds for for commercial / industrial land uses were applied as per Section 2.4.8, Schedule B1, NEPC (2013).
	NEMP 3.0 (HEPA, 2025)	**National Chemicals Working Group of the Heads of EPA Australia and New Zealand** PFAS National Environmental Management Plan (3.0) Guidelines Table 8 – Ecological water quality guidelines values for interim fresh – 95% species protection of slightly to moderately disturbed systems.

6. REMEDIATION TECHNOLOGY

6.1 Regulatory Overview

Under the NEPC (2013) *National Environment Protection (Assessment of Site Contamination) Amendment Measure*, the preferred hierarchy for site remediation and/or management is:

- On-site treatment of the contamination so that it is destroyed or the associated risk is reduced to an acceptable level; and
- Off-site treatment of excavated soil, so that the contamination is destroyed or the associated risk is reduced to an acceptable level, after which soil is returned to the site; or, if the above are not practicable:
  - Consolidation and isolation of the soil on-site by containment with a properly designed barrier; or
  - Removal of contaminated material to an approved site or facility, followed, where necessary, by replacement with appropriate material; or
  - Where the assessment indicates remediation would have no net environmental benefit or would have a net adverse environmental effect, implementation of an appropriate management strategy.

When deciding which option to choose, the sustainability (environmental, economic, and social) of each should be considered, in terms of achieving an appropriate balance between the benefits and effects of undertaking the method.

For this site, a number of remediation options were reviewed to examine the suitability of each method, the surrounding properties, geological and hydrogeological limitations and the following considerations:

- Development requirements;
- Prioritisation of works in areas of most concern;
- Material and infrastructure limitations;
- Remedial timeframes;
- Costs;
- Sustainability;
- Work health and safety;
- Effectiveness on achieving appropriate levels / SAC; and
- Regulatory compliance.

6.2 Remediation Technologies Review

A number of soil and groundwater remediation options were reviewed to examine the suitability of each method, with due regard for the surrounding land uses, as well as the (hydro)geological limitations.

A brief discussion on the various remediation technology options is provided in **Table 6-1** along with comments about their suitability for the current site conditions

Table 6-1 Remedial Technology Review - Soils

Remediation Methodology	Description	Advantages	Disadvantages	Suitability
No Action	'No Action' can be considered if: ▪ Exposure to receptors is unlikely; and ▪ Contaminants are not mobile.	No remediation costs. Minimal disturbance to the site. Retains material on site.	May pose limitations on land use options. May require an Environmental Management Plan (EMP) and ongoing monitoring.	Not suitable – risks posed to receptors by contamination were already identified within fill layer.
On-site, ex-situ bioremediation	Excavated soils are stockpiled and aerated, mixed with microorganisms and/or nutrients, above ground.	Cost effective if soils are to be reused on site. No (or lower) disposal costs. Less material to be imported to site. Retains material on site.	Significant area required. Undefined remediation timeframe. Potential for odour problems.	Not suitable – Not applicable for metal impacts in soil.
Consolidation and/or capping	Risk control/minimisation approach, where impacted soils are managed on site by capping the ground surface with a clean, impermeable layer of geofabrics and/or fill material.	Effectively removes risk to human health by eliminating exposure pathways. No (or lower) disposal costs. Less material to be imported to site. Retains material on site.	Detailed capping design required. Would pose limitations on land use. Typically would require an EMP and an asbestos management plan (AMP) if asbestos encountered.	**Potentially Suitable** For any soils to be capped onsite, the analytical results will be assessed against SAC in **Section 5.2**. Note: Cap and contain method within the site would require detailed planning in regards to the capping layers. Capping layer depth, thickness, and permeability to oxygen and water from surface, would need to be addressed to account for different plant species extracting nutrients from different depths. A long term environmental management plan (LTEMP) for the land will be required.
Excavation and off-site disposal	Excavate impacted materials. Transport directly to a licensed landfill facility. Reinstate site (if required) using imported clean fill material.	Fast – impacted material removed immediately. No storage or treatment required. Reduced vapour/odour issues. Minimal design and management costs.	Higher costs. Requires waste classification prior to disposal, including thorough waste records, waste tracking and reporting. Sustainability issues related with disposal to landfill.	**Suitable** – For meeting the key project objective to make the site suitable for the proposed land use. Some impacted soils will be excavated as surplus material during the construction of the basement.

Remediation Methodology	Description	Advantages	Disadvantages	Suitability
Natural attenuation	Allowing the contaminants to biodegrade naturally while systematically monitoring the contamination plume behaviour.	Minimal disturbance (no excavation) Sustainable and cost-effective remediation method.	Longer remediation timeframes. Potential for further impacts on the groundwater aquifer and nearby environmental receptors.	**Suitable** – For petroleum hydrocarbons (TRH) detected at MW203 (south east portion outside of proposed basement boundary), following removal of primary sources (i.e. TRH impacted soils). Investigation to date indicates substantial reduction in petroleum hydrocarbons impacts previously report in the south east portion of the site. Reported concentrations in groundwater are negligible.

6.3 Preferred Remediation Option

Based on the available remedial technologies presented in **Table 6-1**, the proposed site development (residential), the requirement for basement excavation across identified areas of contamination, the potential risks to human health and the environment, as well as the relative cost effectiveness of feasible remedial techniques, the preferred remedial option for the site is:

6.3.1 Contaminant Impacted Soil

- Excavation, followed by off-site disposal of impacted soils to appropriately licensed waste facilities;
- Alternate: Reuse on site if remediation acceptance criteria satisfied.

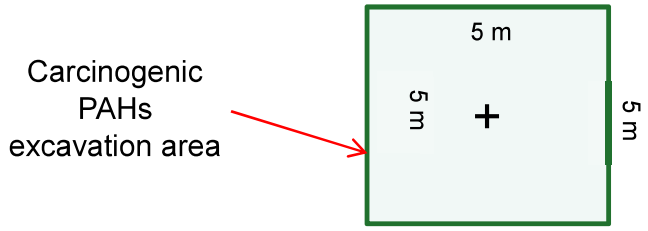
All wastes should be transported to appropriate, NSW EPA-licensed facilities, after classification in accordance with NSW EPA guidelines. All excavated areas (generated during the remediation works) should be validated via base and wall soil sampling. If required, any backfilling should be undertaken using validated, imported (or recovered) excavated natural materials.

Excavation of In-Situ Waste

Elevated concentrations of carcinogenic PAHs exceeded adopted human health criterion (HIL-B, 4 mg/kg), at TP101_0.9-1.1 (19 mg/kg) and TP101_2.9-3.0 (6.4 mg/kg). With respect to waste management, the concentration of B(a)P at depth horizon of 0.9-1.0 from TP101 exceeded SCC1 threshold (10 mg/kg), indicating classification as restricted solid waste (RSW). TCLP1 thresholds were not exceeded in any TP101 samples tested.

The following sequence of works is proposed for the excavation and validation of in-situ carcinogenic PAHs impacted soils identified at test pit TP101, as reported in the Data Gap Investigation (EI, 2025). This remedial activity is subject to further investigation. Note that further investigation is proposed as part of this RAP to determine the extent of elevated concentrations of carcinogenic PAHs reported to a depth of approximately 3 mBGL at TP101. The additional investigation may determine that fill at TP101 can be removed as part of surplus material for basement construction rather than as an isolated remedial excavation described here.

a) Prior to commencing the excavation of the identified carcinogenic PAHs impacted soils, with reference to the architectural plan (**Appendix B**) the environmental consultant must clearly mark and isolate areas identified as TP101. A 5 m by 5 m square *'Carcinogenic PAHs impacted excavation area'* should be marked on the ground at the identified test pit location with the existing ground stake marking the centre of the former test pit positioned at the centre of the square, as illustrated below:



b) Excavate (under supervision by the environmental consultant) TP101 to the depth limit of elevated carcinogenic PAHs and load the excavated materials directly onto the waste transport vehicle.

c) After the completion of the excavation the environmental consultant is to collect one representative validation sample from each wall and the base of the excavation for laboratory analysis for carcinogenic PAHs, to confirm that all impacted materials have been effectively removed.

d) Should elevated concentrations of carcinogenic PAHs (>SCC1 of 10 mg/kg) be identified in the wall/base validation samples, then the excavation is to be extended to chase-out the impacted materials in the direction of the detection and collect new validation samples for laboratory analysis.

e) Repeat the step (d) until the laboratory validation tests confirm that elevated carcinogenic PAHs are no longer present within the excavation area.

6.3.2 Contaminants Impacted Groundwater

Reported concentrations of heavy metals were considered to represent background conditions, typical of an urban industrial environment. No remedial action was required with respect to reported elevated concentrations of heavy metals in groundwater. Management may be required for dewatering and disposal, which is detailed in a separate dewatering management plan (DMP).

TRH impacted groundwater was detected at MW203, this as determined t be naturally occurring, with shale in the subsurface the likely natural source. MW203 is located outside the proposed basement boundary. No remedial action is required.

6.4 Remediation Works Category, Consent and Planning

6.4.1 Consent Requirements

In accordance with *State Environment Protection Policy (Resilience and Hazards) 2021 (SEPP 2021)*, the category of the remediation works defines whether consent is required prior to commencement. Works where there is the potential for significant environmental impact are classed as *Category 1* and require development consent. *Category 2* works pose a low potential for environmental impact and do not therefore require prior consent. The classification outcome for the subject site is outlined in **Table 6-2**.

Table 6-2 Remediation Works Category Information

Significant Environment Impact	Yes/No	Category
Designated Development or State Significant Development	No	2
Critical or threatened species habitat	No	2
Impact on threatened species, populations, ecological communities or their habitats	No	2
In area identified environmental significance such as scenic areas, wetlands (see list*)	No	2
Comply with a policy made under the contaminated land planning guidelines by Council	Yes	2
Is work ancillary to designated development	Yes	2

Notes: * Environmental significance list -coastal protection, conservation or heritage conservation, habitat area, habitat protection area, habitat or wildlife corridor, environment protection, escarpment, escarpment protection or escarpment preservation, floodway, littoral rainforest, nature reserve, scenic area or scenic protection, or wetland.

Based on the above determination, the remediation works for the site are considered Category 2 and will not require specific development consent. Nevertheless, 30 days prior to commencement of remediation, notification to the consent authority (Ku-Ring-Gai Council) will be made as required by Condition 6 of the NOD of DA0610/17 (refer to **Section1.1**). Council has the right of intervention after that time for a breach of the *CLM Act 1997* or non-compliance with *State Environment Protection Policy (Resilience and Hazards) 2021*. The notification will also serve as the basis for updating Council records on properties in the local government area and will:

- Be in writing;

- Provide contact details for the notice;
- Briefly describe the remediation work;
- Show why the work is considered Category 2 remediation work;
- Specify the property description and street address on which the remediation work is to be carried out;
- Provide a location map; and
- Provide estimates for commencement and completion dates of the work.

With reference to Condition 6 of the NOD of DA0610/17 , the following additional information must be submitted with the notice to Council:

- Copies of any preliminary investigation, detailed investigation and remediation action plan for the site; and
- Contact details for the remediation contractor and any other party responsible for ensuring compliance of remediation work with regulatory requirements.

Provision of this RAP, as well as an indication of commencement and completion dates of the works in writing, is usually sufficient to meet the requirements of this notification.

6.4.2 Development Consent and Planning

All works must be in accordance with *Ku-ring-gai Development Control Plan (DCP) 2022* and any specific consent conditions issued for the development.

6.4.3 Planning Requirements

The appointed site contractor must also prepare a site-specific Work Health and Safety Plan (WHSP), covering human / environmental health and safety issues, as well as any other measures required under Council's DA approval and DCPs.

The appointed site contractor must notify Safework NSW in writing at least five days before the remedial work commences.

Construction of the proposed basement is expected to intercept the local groundwater system, therefore temporary groundwater dewatering of the site will be required. A dewatering management plan (DMP) should be prepared prior to the commencement of construction dewatering activities at the site.

6.4.4 Dewatering Treatment (if required)

During the remediation and excavation works, . any dewatering works detailed in a DMP (**Section 6.4.3**) may require approval under the *Water Management Act 2000*, *NSW Aquifer Interference Policy (DPI 2012) and Protection of the Environment operations Act 1997 (POEO 1997).* Treatment of the extracted groundwater might be necessary prior to discharge. Appropriate discharge sources should be considered:

- Sydney Water requirements for discharge of contaminated water to sewer; and/or
- Council requirements for discharge of groundwater to stormwater system.

7. REMEDIATION WORKS

7.1 Remediation Sequence

The previously identified contamination in soils and groundwater (**Section 4.2** and **Section 4.3**) is presented in **Figure A2**, **Appendix A.** The overall site remediation works will therefore include (though not necessarily be limited to):

- **Stage 1 –** Site establishment and preparation;
- **Stage 2 –** Building demolition and post-demolition clearances;
- **Stage 3 –** Additional soil sampling in northeast and south east setbacks and general fill in north east portion

Hold Point

- **Stage 4 –** Waste classification and Off-Site Disposal of Soil;
- **Stage 5 –** Due diligence investigation within TfNSW dedicated area;
- **Stage 6 –** Site validation; and
- **Stage 7 –** Preparation of Validation Report.

7.1.1 Contingent Action

Should additional impacted soils be encountered or unexpected finds be discovered during the course of the remediation program, or should any phase of the validation identify residual, gross contamination requiring additional remediation, the procedures described under the Unexpected Finds Protocol (UFP) (**Section 8.6**) and/or the validation plan (**Section 9**) will be implemented, until the remediation goals have been achieved and the site is deemed suitable for its intended land use.

7.2 Stage 1 – Site Establishment and Preparation

7.2.1 Council Notification

Notice must be given to Council at least 30 days prior to the commencement of remediation works as outlined in **Section 6.4.1.** A list of all required work permits must be obtained from Council and arrangements are to be made to obtain the necessary approvals from the relevant regulatory authorities.

7.2.2 Site Preparation and Planning

The site should be prepared in accordance with the general requirements outlined in **Section 6.4.** Before site works commence, the site contractor will be required to prepare:

- Site specific plans including a work health and safety plan (WHSP);
- Environmental controls, site access, security, fencing and any required warning signage;
- A project plan, outlining engineering design for excavation support (if required), materials handling, traffic management and waste tracking. The project plan should also incorporate a staging plan that will include, but not be limited to:
  - Staging of areas to be excavated;
  - Areas designated for waste segregation, screening and storage (stockpiling);

- Truck movements to allow loading to mitigate impacts to surrounding land users; and
- Details of any required environmental management measures such as sediment control and dust control.

As part of site planning, it is recommended that an initial remediation workshop/induction be conducted by the appointed contractor(s) to further discuss required remedial measures, outline excavation plans, waste classifications, and environmental management requirements. The appointed Environmental Consultant should provide further guidance in relation to environmental management measures to be applied during the remediation and site validation activities.

7.3 Stage 2 – Building Demolition and Post-Demolition Clearances

All demolition works should be undertaken by suitably qualified licensed contractors, in accordance with SafeWork NSW regulations, with appropriate environmental management and occupational health and safety plans and monitoring systems in place. The demolition and disposal works should include:

- mobilisation to site (including community consultation);
- institution of environmental controls and monitoring locations;
- implementation of site security arrangements;
- assessment, removal and disposal of asbestos containing materials (if applicable);
- demolition of buildings to ground level;
- installation of temporary retention systems and diversion of underground services (such as the sewer or other utilities);
- segregation and stockpiling of concrete;
- recycling of reusable demolition materials;
- site monitoring; and
- removal and disposal of rubbish.

Note: Following site demolition and removal of concrete slabs, an inspection of the exposed ground surface must be undertaken by qualified personnel (e.g. Licensed Asbestos Assessor), to confirm the absence of ACM and check for evidence of potential contamination.

7.4 Stage 3 – Additional soil investigation in setbacks and general fill in north east portion

- Data gaps were identified (**Section 4.6**) which will require closure, by completing additional sampling and analysis of site soils to increase sampling density in setback areas and for delineation of TP101 (**Section 6.3.1**) and in situ waste classification purposes. This task will be completed once all site structures and existing slabs are removed from the site but prior to bulk excavation and construction. Additional works required are as follows (refer to **Figure 3**, **Appendix A** for the proposed sampling plan).
  - Generally auger drilling through the fill to the natural layer at additional locations as follows. Auger drilling is recommended for the north east portion as the depth of fill is at least 9.6 mBGL (at MW3):
    - Three loctaions in the northeast set back – by auger drilling

  - One location by test pit or hand auger in the south east set back, subject to access in the vicinity of the palm tree (under tree preservation order).
  - Eight locations by either auger drilling or test pits in the east area within the basement footprint by either auger drilling or test pits. Delineation of carcinogenic PAHs reported at TP101. Incraesed datat desity for in situ waste classification of surplus fill to be excavated for basement construction.

- ***Hold Point 1***: reassessment of site conditions based on observations and analytical results following additional soil characterisation, to determine if specific excavation of soil at TP1010 is required for separate easte classification, and whether any unexpected finds were detected or further remediation is required.
- Visual / olfactory observations are to be recorded, as well as in-field, soil headspace screening for volatile organic compounds (VOCs) to be conducted using a calibrated Photo-Ionisation Detector (PID).
- Test pit/bore logs are to be prepared and included in the waste classification certificates.
- Waste classification of site soils shall be completed in accordance with the NSW EPA (2014) *Waste Classification Guidelines* (refer to **Section 7.5**)

7.5 Stage 4 – Waste Classification and Off-Site Disposal of Impacted Soils

Material handling and management procedures will be implemented as detailed in **Section 8** for any excavated material. Any material designated for offsite disposal must be classified in accordance with NSW EPA (2014).

If specific remedial excavation of fill (elevated B(a)P exceeding SCC1 threshold) at TP101 then soil will be excavated and disposed at a suitably NSW EPA licensed waste management facility. This will also apply to other soil that is found to be not suitable after additional investigation (**Section 7.4**). The general methodology to be used for excavation is as follows:

- Identified hotspots, such as TP101 (if required) are to be excavated, adopting a nominal excavation area of 5m x 5m (initial minimum; equating to an approximate 2.5m radius), removing the entire fill layer. The excavated materials are to be stockpiled separately from all other site fill/soils, or loaded directly onto licensed transport vehicles (tipper trucks), to enable disposal in accordance with the EPA (2014) Waste Classification Guidelines.

Removal of remaining fill – Basement Footprint

- Bulk excavation is required to construct the basement. Material handling and management procedures should be implemented as detailed in this section for any excavated material.
- Following the removal of impacted soils, the remainder of fill soils within the basement footprint should also be excavated as surplus soil and disposed off-site in accordance with corresponding waste classification certificates.
- Following fill removal, visual inspection should be undertaken to verify that fill has been removed and natural soil remains.

The waste classification process will occur as follows:

7.5.1 Waste Classification – In-Situ Fill Materials

- In-situ materials designated for waste classification will be sampled using a regular square-grid systematic pattern (NSW EPA, 2022). For land area is less than 500 m^2, a minimum

eight sampling location is required, and a minimum of 10 samples to allow for the use of 95% UCL statistical calculations of contaminant concentrations to categorise classification.

Note: UCL calculations are not applicable to asbestos characterisation.

- The analytical suite will include six priority metals (arsenic, cadmium, chromium, lead, mercury and nickel), TRH, BTEX, PAH, OCP, OPP, PCB and asbestos, with TCLP testing (as required) and any additional chemicals of potential concern that may be identified during site remediation.
- Preparation of reports detailing the interpreted soil waste classification for the in-situ fill materials to enable appropriate off-site disposal.
- Excavated in-situ fill materials will be handled in accordance with the material management procedures presented in **Section 8.2**.

7.5.2 Management of Bulk Excavations

The general process for conducting appropriate waste characterisation, transport and disposal will be as follows:

- Waste Classification reports must be issued by the Environmental Consultant according to the assessed classification and quantity prior to off-site disposal.
- It is the responsibility of the appointed Site Manager to make arrangements for the Environmental Consultant to assess the need for additional sampling and analysis, to classify any additional spoil that is produced during the construction process.
- The earthworks contractor must identify suitably licenced waste landfill premises for disposal of waste materials and confirm that the premises will accept the waste in accordance with its Environmental Protection License.
- Waste classified soils for disposal shall be loaded onto NSW EPA-licensed waste vehicles for transport to the designated landfill premises.
- The earthworks contractor must supply the individual waste dockets for each waste load to the Environmental Consultant via the Site Manager, in a timely manner. The waste dockets are required for later validation reporting purposes.
- If the fill materials are to be reused on site, they must comply with the SAC presented in **Section 5.2**, to ensure the site remains safe for human health and the environment.

Other important requirements as part of the waste management are as follows:

- Additional waste classification may be necessary for suspicious materials which exhibit odours or appear stained or discoloured. The discovery of such soils should be treated as “unexpected finds” and will trigger application of the Unexpected Finds Protocol provided in **Section 8.6**. In this situation, the Environmental Consultant should be immediately consulted for evaluation and waste characterisation of the materials.
- A site log shall be maintained by the contractor for each discrete excavation (numbered locations) to enable the tracking of disposed loads against on-site origin and location of the materials.
- Transport of contaminated material should be via a clearly designated haul route from the site to the landfill premises that minimises exposure to sensitive communities. The proposed waste transport route should be notified to Council and truck dispatch shall be logged and recorded by the contractor for each load leaving the site.
- Each waste load should be disposed to a licensed waste facility authorised to accept the waste, in accordance with the relevant Waste Classification Reports, and documentation (waste dockets) confirming disposal must be maintained for reporting purposes.

- Environmental controls must be implemented to prevent exposure to workers and the public and are described further in **Section 8** of this RAP.

Removal of asbestos materials (if identified during excavation) from the site should only be carried out by licensed asbestos contractors holding the appropriate SafeWork NSW and NSW EPA licenses, consents and approvals.

7.5.3 Management of VENM

During site works, Virgin Excavated Natural Materials (VENM) may be identified as suitable for off-site re-use. Confirmation of the VENM waste classification must be made with the concurrence of appointed environmental consultant. The re-use of VENM at an off-site location must be approved in writing by the receiving site land owner before it is transported from the site.

Natural soils encountered at the site will be considered pre-classified as VENM according to NSW EPA (2013) *Waste Classification Guidelines* Part 1, pp 4-6. It will then be required to demonstrate that the VENM is not impacted by contamination as follows::

- Site clearance inspection to verify that overlying fill has been removed; and
- Sampling of exposed natural soil and laboratory analysis for identified chemicals of concern (manufactured chemicals) including asbestos according to **Table 8.1**; and
- Meeting criteria of no detections of priority manufactured chemicals and background concentrations for other naturally occurring chemicals (e.g. metals).

Surplus natural soil as VENM will be suitable for offsite reuse. If a VENM classification is not possible for natural soil then a classification of ENM will be considered (Refer to **Section 7.5.4**).

The earthworks contractor must provide the following to the environmental consultant and client for reporting purposes:

- All approval documents and correspondence from the receiving site authority and approver;
- Details of VENM volumes excavated from the site, including the measured depth below existing ground level, or surveyed elevation of the VENM at the top and bottom excavation levels;
- Laboratory results from samples of designated material verifying a classification as VENM;
- A description of the VENM that was sent to the receiving site; and
- Copies of VENM weighbridge dockets, trip tickets and/or consignment disposal confirmation that confirms the date, exit time, and truck license plate and operator for each load.

In advance of VENM excavation, VENM must be protected from exposure to site contamination activities or materials. Measures to protect VENM from exposure to contamination may include:

- Covering VENM in-situ or in stockpile with plastic sheeting;
- Placing stockpiled VENM on top of protective plastic sheeting;
- Minimising time of exposure to the site environmental conditions; and
- Relocating contaminated soils and/or potentially contaminating activities (i.e. plant refuelling) away from VENM.

7.5.4 Management of ENM

If the volume of natural soils to be removed includes up to 2% of foreign materials, then a classification of excavated natural material (ENM) might be achievable, subject to compliance with the ENM classification requirements. This classification must be verified by sampling and laboratory analysis to confirm that the materials meet the specific chemical and other material

requirements detailed in the NSW EPA *Excavated natural material order 2014*; and *The excavated natural material exemption 2014*.

7.5.5 Disposal of Contaminated Material and Waste Tracking

All contaminated materials excavated and removed from the site shall be disposed at an appropriately licensed landfill facility. Copies of all necessary approvals shall be provided to the Environmental Consultant prior to any contaminated material being removed from the site.

The transportation and disposal of asbestos waste is regulated by the *Protection of the Environment Operations (Waste) Regulation 2014*. All asbestos waste must be disposed of at a licensed landfill according to waste classification under the NSW EPA (2014). All vehicles transporting soils with asbestos are to be tracked in accordance with EPA requirements and registered on the Integrated Waste Tracking Solution (IWTS) system (kpmgorigins.com/iwts).

Details of all contaminated materials removed from the site shall be documented by the contractor including copies of weighbridge dockets, trip tickets and consignment disposal confirmation (where appropriate). Such information must be provided to the Environmental Consultant for reporting purposes.

7.6 Stage 5 – Due Diligence Investigation within TfNSW Dedicated Area

Based on the proposed development (**Section 1.2**), the eastern site boundary will be shifted back from the current alignment along Pacific Highway. The setback area (approximately 3.5m in width) will be dedicated to Transport for NSW (TfNSW) for road widening. A detailed contamination assessment is recommended to assess the environmental conditions (contamination status) of the dedicated area and meet the obligations under the *State Environmental Planning Policy (Resilience and Hazards 2021)*. However hand over requirements should be confirmed with TfNSW.

Investigation may require double-density asbestos sampling for fill materials, and additionally, a range of potential contaminants: eight priority metals, TRH, PAHs, VOCs, OCPs, OPPs PCBs, and general soil physio-chemistry (pH and electrical conductivity). A sampling analysis quality plan (SAQP) should be developed to reflect the site history and align with the following guidelines and frameworks:

- TfNSW (2013) *RMS Guidelines for the Management of Contamination*;
- NSW EPA (2022) *Sampling Design Guidelines;* and
- NEPC (2013) *Schedule B (1) Guideline on Investigation Levels for Soil and Groundwater and Schedule B(2) Guideline on Site Characterisation, in the National Environmental Protection (Assessment of Site Contamination) Amendment Measure 1999*.

7.7 Stage 6 – Site Validation

Once all excavations are completed, a validation assessment will be required to confirm:

- The suitability of the exposed natural soil surfaces after excavation and offsite disposal;
- The suitability of soils to be retained; and
- The suitability of backfill soil that may be imported to site, to reinstate any excavated areas.

Details of the required validation methodologies are presented in **Section 9**.

7.8 Stage 7 – Validation Report Preparation

All results shall be presented in a Site Validation Report, prepared by the Environmental Consultant in accordance with the NSW EPA (2020a) *Consultants Reporting on Contaminated*

Land: Contaminated Land Guidelines. The report will document all aspects of the remediation and site validation program, include an assessment of the environmental data for the remaining site soils against the SAC and provide a clear conclusion about the suitability of the site for its future proposed land use. Preparation of the validation report will satisfy Condition 19 of the NOD of DA0610/17 (refer to **Section1.1**)

Further details on the contents of the validation report are provided in **Section 9.3**.

7.9 Remedial Contingencies

It is anticipated that the proposed remedial technology will be effective in dealing with the identified contamination. However, remedial contingencies may be required should the scenarios detailed in **Table 7-1** arise.

Table 7-1 Remedial Contingencies

Scenario	Remedial Contingencies/Actions Required
Contaminated soils identified during previous investigations are encountered	Work to be suspended until the Environmental Consultant can further assess impacted soils/ materials and associated risks. Follow the unexpected finds protocol as detailed in **Section 8.6** of this RAP.
Underground storage tanks (USTs) are encountered at the site	No USTs have been observed at the site. If they were identified during the excavation, systems to be removed and the excavations appropriately validated and backfilled by experienced contractor. Tank removal works reported by appropriate Environmental Consultant in accordance with NSW EPA (2020b) *Guidelines for the implementation of the POEO (underground petroleum storage systems) Regulation 2019* and Australian Standard AS4976 (2008). Follow the unexpected finds protocol as detailed in **Section 8.6**.
Asbestos wastes are encountered	Asbestos containing materials have not been reported in fill at the site. If suspected asbestos containing materials area encountered then current work is to be suspended and asbestos removed by a suitably qualified contactor, in accordance with SafeWork NSW regulations. Follow the unexpected finds protocol as detailed in **Section 8.6**. Asbestos in air monitoring should follow requirements detailed in **Section 8.5**.
Residual soil impacts remain on-site between site boundary and basement excavation	Review/assess soil conditions. Carry out site specific second tier risk assessment (if required). Review/assess potential vapour hazard. If there is a vapour risk additional remedial measures may be required such as installation of a vapour barrier or passive or active vapour extraction system. Amendment to RAP required.
Contaminated groundwater encountered	Groundwater is expected to be intercepted during remediation and dewatering is required. Following the removal of TRH-impacted soil materials, if contaminated groundwater is confirmed update this RAP as per **Section 7.7**. Review groundwater conditions on site and determine need for further investigation/remediation and/or longer-term management plan.
Contamination is identified near heritage items or significant trees (if identified)	Stop work. Review contaminant concentrations and risks to heritage items / flora. Assess human health and environmental risks if contamination remains in place. Review natural attenuation options.

Scenario	Remedial Contingencies/Actions Required
Changes in proposed land use(s) at the site	Review remediation works for the site.

8. SITE MANAGEMENT

8.1 Responsibilities and Contacts

The responsibilities for the various parties involved with the remediation program are outlined in **Table 8-1**.

Table 8-1 Site Management Responsibilities

Responsible Party	Details/Contacts	Responsible for:
Project Manager	Principal Contractor to be confirmed	▪ Overall management of the site remedial activities.
Property Owner and Site Contractor	Principal Contractor to be confirmed	▪ Notification of site conditions to the NSW EPA under the duty to report contamination under the *Contaminated Land Management Act 1997*. ▪ Registration of details of Site Audit Statement (if Site Auditor is engaged). ▪ Implementation of and compliance with this RAP. ▪ Notification to contractors of the existence of RAP. ▪ Provision of copies of this RAP.
Environmental Management Coordinator (EMC) / Remediation Supervisor	Principal Contractor to be confirmed and Environmental Consultant	▪ Ensuring site remediation works are carried out in an environmentally responsible manner. ▪ Liaison between the appointed Environmental Consultant and Council, providing regular updates and informing of any problems encountered. ▪ Ensuring all environmental protection measures are in place and functioning correctly during site remediation works. ▪ Reporting any environmental issues to owner.
Environmental Consultant	To be confirmed before remedial works are started	▪ Preparation of this RAP. ▪ On-site management and guidance of the remedial works. ▪ Coordination of validation works, documentation, notifications and permits required to conduct remedial works to a standard suitable of obtaining approval from the NSW EPA. ▪ Completing validation sampling and monitoring as requested by the Remediation Contractor and dictated by this RAP. ▪ Liaison between remediation contractor and the client. ▪ Preparation and submission of supporting documentation for Site Auditor review (if required).
Earthworks or Remediation Contractor	Engaged by Principal Contractor, to be confirmed	▪ Ensuring all operations are carried out as identified in this RAP (remediation), as directed by the Project Manager and EMC. ▪ Inducting all employees, subcontractors and authorised visitors on procedures with respect to site works, WHS and environmental management procedures. ▪ Reporting any environmental issues to EMC. ▪ Maintaining site induction, site visitor and complaint registers. ▪ Ensuring that fugitive emissions and dust potentially

Responsible Party	Details/Contacts	Responsible for:
		leaving the confines of the site are suitably controlled and minimised. ▪ Ensuring that water containing any suspended matter or contaminants is minimised, does not leave the site and is suitably controlled, so as not to pollute the environment. ▪ Ensuring that vehicles are cleaned and secured so that no mud, soil or water is deposited on any public roadways or adjacent areas. ▪ Ensuring that noise and vibration levels at the site boundaries comply with the legislative requirements. ▪ Preparation of site specific plans including WHSP, as stated in **Section 7.2**.
Local Council	Ku-Ring-Gai Council	▪ Ensuring requirements of Development Consent and other planning instruments are met. ▪ Registration of details of a Site Audit Statement (if a requirement) on Planning Certificate.
Qualified Independent Consultant – NSW Accredited Site Auditor (if required)	To be confirmed if required	▪ Review of RAP, Site Validation Report. ▪ Preparation of Site Audit Statement and Site Audit Report (if required). ▪ Review of updates, revisions or amendments as applicable. ▪ Provide interim audit advice of consultant or client submissions. ▪ Conduct inspections during remedial works.

8.2 Materials Handling and Management

Table 8-2 summarises the measures that should be implemented in respect of materials handling during remedial and bulk excavation works at the site.

Table 8-2 Materials Handling and Management Requirements

Item	Description / Requirements
Earthworks contractors	Excavation of fill materials should be completed by a suitably qualified contractor to ensure: ▪ All employees and contractors are aware of the environmental and health and safety requirements to be adhered to. ▪ There is no discernible release of dust into the atmosphere as a consequence of the works. ▪ There is no discernible release of contaminated soil into any waterway as a consequence of the works. ▪ There are no pollution incidents, health impacts or complaints. ▪ All site specific management plans such as a Construction Environmental Management Plan (CEMP) should be followed.
Stockpiling of materials	All stockpiles will be maintained as follows: ▪ Stockpiles must be located on sealed surfaces such as sealed concrete, asphalt, or high density polyethylene. ▪ Should stockpiles be placed on bare soils, which may occur adjacent to remediation areas, bare soil should be lined with builder's plastic before stockpile placement in locations that do not pose any environmental risk, and covered with builder's plastic. ▪ Excavated soils should be stored in an orderly and safe condition (≤2m height). ▪ Stockpiles should be battered with sloped angles to prevent collapse. ▪ Stockpiles should be covered after being lightly conditioned by water sprinkler to

Item	Description / Requirements
	prevent dust blow and control odours. ▪ Air emissions to be controlled, if required, by using a hydrocarbon mitigation agent, such as BioSolve®, Pinkwater®, Anotech® or an equivalent product selected by the contractor, in combination with the fine mist spraying. ▪ Should the stockpile remain *in situ* for over 24 hours, silt fences or hay bales should be erected around each stockpile to prevent losses from surface erosion (runoff). ▪ Stockpiles shall be strategically located to mitigate environmental impacts while facilitating material handling requirements.
Loading of material	Loading of stockpiles / materials will be as follows: ▪ Transport of contaminated material off the site is to be via a clearly distinguished haul route. ▪ Measures shall be implemented to ensure that no contaminated material is spilled onto public roadways or tracked off-site on vehicle wheels. Such measures should include the use of a wheel washing/cleaning facility, placed before the egress point on the site, and should be able to handle all vehicles and plant operating on-site. ▪ Residue from the cleaning facility should be collected and either dewatered on site in a contained / bunded area, or disposed as a slurry to an approved facility. Such residue will be deemed contaminated unless proven otherwise.
Transport of materials	Prior to being assigned to an appropriate waste disposal facility, all waste fill/soils will be classified in accordance with the NSW EPA (2014) *Waste Classification Guidelines*. If prior immobilisation treatment of the waste soils is required, disposal consent will be obtained from the NSW EPA prior to spoil transport. ▪ All trucks transporting soils from the site are to be covered with tarpaulins (or equivalent). ▪ All haulage routes for trucks transporting soil, materials, equipment and machinery shall comply with all road traffic rules, minimise noise, vibration and odour to adjacent premises, utilise state roads and minimise use of local road. ▪ All deliveries of soil, materials equipment or machinery should be completed during the approved hours of remediation and exit the site in a forward direction. ▪ Removal of waste materials from the site shall only be carried out by a recognised contractor holding the appropriate NSW EPA licenses, consents and approvals. ▪ Landfills are required to be licensed for the category of waste received according to the *POEO Act 1997*. Additional conditions apply to material that is classified as Hazardous Waste.
Material tracking	Materials excavated from the site should be tracked from the time of excavation until disposal. Tracking of the excavated materials should be completed by recording the following: ▪ Origin of material; ▪ Material type; ▪ Approximate volume; and ▪ Truck registration number. Disposal locations will be determined by the remediation contractor. Disposal location, waste disposal documentation (weighbridge dockets) and the above listed information should be provided to the remediation consultant for reporting purposes. The transportation and disposal of asbestos waste is regulated by the *Protection of the Environment Operations (Waste) Regulation 2014*. All asbestos waste must be disposed of at a licensed landfill according to waste classification under the NSW EPA (2014) Waste Classification Guidelines. All vehicles transporting soils with asbestos are to be tracked in accordance with NSW EPA requirements and registered on the Integrated Waste Tracking Solution (IWTS) system (kpmgorigins.com/iwts).

Item	Description / Requirements
Material visual inspection prior to validation sampling.	Following the completion of remedial works as specified within this RAP, the following applies: ▪ A suitably qualified Environmental Consultant should undertake a visual inspection of the work area. If visual observations indicate contamination, the earthworks contractors should rectify any issues arising from the inspection (i.e. further excavation or 'chasing out' until soils show no evidence of contamination based on visual inspection and/or odours). ▪ Following satisfactory completion of the visual inspection, validation sampling of soils should be completed. Validation sampling is discussed in **Section 9**. Only following satisfactory validation will remedial works be deemed as completed.

8.3 Environmental Management

All remediation work must be undertaken with due regard to the minimisation of environmental effects and meet all statutory environmental and safety requirements. The WHSP and other relevant plans must therefore also address the issues identified in **Table 8-3**.

Table 8-3 Environmental Management Requirements

Category	Preventive / Corrective Measures
Site Stormwater Management and Control	Appropriate measures shall be taken to ensure that potentially contaminated water does not leave the site. Such measures should include, but not be limited to: ▪ Diversion and isolation of any stormwater from any contaminated areas; ▪ Provision of sediment traps including geotextiles or hay bales; and ▪ Discharge of any water to drains and water bodies must meet the appropriate effluent discharge consent condition under the *Protection of the Environmental Operations Act 1997*.
Soil Management	Appropriate measures shall be taken to ensure soils are excavated using an appropriate methodology to reduce nuisance dust and odours from leaving the boundary, and soils are disposed of in accordance with the NSW Government *Protection of the Environment Operations (Waste) Regulation 2014*.
Dust and Odour	Control of dust and odour during the course of the remediation works shall be maintained by the contractor to ensure no nuisance dust or odours are received at the site boundary according to requirements of Ku-ring-gai DCP 2022. Action levels and specific control measures would be described in the site CEMP and may include, but not necessarily be limited to the following: ▪ Site wide water spraying, as and when appropriate, to eliminate wind-blown dust; ▪ Use of mist sprays, and/or sprinklers on stockpiles, fill screening areas and loaded fill to lightly condition the material; ▪ Use of tarpaulin or tack-coat emulsion or sprays to prevent dust blow from stockpiles or from vehicle loads; ▪ Covering of stockpiles or loads with polythene or geotextile membranes; ▪ Restriction of stockpile heights to 2m above surrounding site level; ▪ Ceasing works during periods of inclement weather such as high winds or heavy rain; and ▪ Regular checking of the fugitive dust and odour issues to ensure compliance with the CEMP requirements, undertaking immediate remedial measures to rectify any cases of excessive dust or odour (e.g. use of misting sprays or odour masking agent). It is advised that all site workers use adequate dust masks during soil excavation and that machine operators remain within an enclosed, air conditioned cabin.
Noise and Vibration	Noise and vibration will be restricted to reasonable levels. All plant and machinery used on site will be noise muffled to ensure emissions do not breach statutory levels as defined within Ku-ring-gai DCP 2022.
Hours of Operation	Working hours will be restricted to those specified in the site specific DA conditions.

Category	Preventive / Corrective Measures
Community Engagement	Community engagement should be carried out in accordance with Schedule B(8) of NEPC (2013). Prior to the commencement of any remediation works at the site, every owner and occupier of any land located either wholly or partly within 100m of the boundary of the premises (including local council and the RMS) should be notified at least 30 days in advance. The notice should include: ▪ Advice of demolition and excavation work to be carried out on the premises; ▪ State the time and date such work is to commence; ▪ Indicate that the works are being conducted to minimise any risk of site contamination impacting on off-site receptors; ▪ Provide appropriate site signage at an easily readable location on the site fencing, including site contact name and phone number to be contacted should any matter arise; and ▪ Provide contact information and procedure for registering any complaints.
Incident Management and Community Relations	While various environmental management and occupational safety plans will be developed to protect human health and the environment, incidents may occur which pose a risk to the various stakeholders. To mitigate these risks and ensure that a suitable response is carried out quickly, a response plan to any incident that may occur on site should be prepared and various responsibilities assigned. The site health and safety plan and environmental management plan should document these procedures and responsibilities, and incident contact numbers should be maintained in an on-site register. All other relevant emergency contact numbers such as Police, Fire Brigade, and Hospital should be listed in the Health and Safety Plan and posted on-site for easy access.

8.4 Contingency Plan for Environmental Incidents

A contingency plan to deal with incidents that could arise during the proposed remediation works must form part of the site-specific plans: WHSP and CEMP and AMP. Refer to **Table 8-4** for a selection of potential issues that may require specific management. The Unexpected Finds Protocol (**Section 8.6**) should also be followed should an incident occur.

Table 8-4 Contingency Management

Anticipated Problems	Preventive / Corrective Actions
Chemical / Fuel Spill	Stop work, notify above site project manager. Use accessible soil or appropriate absorbent material on site to absorb the spill (if practicable). Stockpile the impacted material in a secure location, sample and determine the appropriate disposal/treatment option.
Additional Asbestos Identified	Stop work, notify above site project manager. Follow the unexpected finds protocol and asbestos assessment procedure as detailed in **Section 8.6** of this RAP. Conduct asbestos air monitoring by a suitably qualified Environmental Consultant/occupational hygienist to assess risk to workers.
Excessive Dust	Use water sprays to suppress the dust or stop site activities generating the dust until it abates.
Excessive Noise	Identify the source, isolate the source if possible, modify the actions of the source or erect temporary noise barriers if required.
Excessive Odours / Vapours	Stage works to minimise odours/vapours. If excessive organic odours/vapours are being generated, stop works and monitor ambient air across site for organic vapours with a Photo-ionisation Detector (PID) and odours at site boundaries. Implement control measures including respirators for on-site workers, use of odour suppressants, wetting down of excavated material. No nuisance odours shall be detected at any site boundary as part of the remedial works. Should odour emissions be detected at or beyond the site boundary, it is recommended, as part of the CEMP and community consultation, that the Remediation Contractor and the Project Manager notify

	the owners and occupiers of premises adjoining and across the road from the site regarding potential odour issues. Notification should be in writing. . In the notification, as well as on street signage, provide contact details of the site personnel for anyone who may be concerned by odour emission during the remediation. Temporarily pause site works to allow for excess odour to subside to a level acceptable by off-site receptors, should it be necessary, after implementation of the above-listed control measures. Record logs for volatile emissions and odours. Such records should be kept on-site and made available for inspection on request. In regard to off-site impact from petroleum vapour, odour is generally detected at concentrations much lower than what will constitute a health-based risk. Measures listed above for odour control (**Table 8-3**) may also be applied for vapour control.
Excessive Rainfall	Ensure sediment and surface water controls are operating correctly. If possible divert surface water away from active work areas or excavations.
Water in Excavations	Collect samples and assess against relevant POEO requirements to enable disposal options to be formulated.
Leaking Machinery or Equipment	Stop the identified leak (if possible). Clean up the spill with absorbent material. Stockpile the impacted material in a secure location, sample and determine the appropriate disposal/treatment option.
Failure of Erosion or Sedimentation Control Measures	Stop work, repair failed control measure.
Unearthing Unexpected Materials, Fill or Waste	Stop activities, contact the site project manager. Follow the unexpected finds protocol as detailed in **Section 8.6** of this RAP. Prepare a management plan if required, to address the issue.
Identification of Cultural or Building Heritage Items	Stop work and notify site project manager. Follow the unexpected finds protocol as detailed in **Section 8.6** of this RAP. Prepare action or conservation plan as required.
Equipment Failures	Ensure that spare equipment is on hand at site, or that the failed equipment can be serviced by site personnel or a local contractor.
Complaint Management	Notify Client, Project Managers and Environmental Consultant (if required) following complaint. Report complaint as per management procedures. Implement control measures to address reason of complaint (if possible). Notify complainant of results of remedial actions.

8.5 Work Health and Safety Plan (WHSP)

As required by the NSW *Work Health and Safety Act 2011* and associated regulations, a WHSP should be prepared, to manage the health and safety of site workers and nearby residents, and address such issues as site security, exclusion zones, excavation safety, vibration, noise, odour and dust levels. The plan should address the risks during the remediation works and cover site specific requirements associated with the contaminants present within the site soils and groundwater.

The site officer responsible for implementing health and safety procedures should induct all site personnel so that they are aware of and comply with, the requirements of this document. It is the contractor's responsibility, with assistance from client/owner(s) of the site to ensure that all other permits, approvals, consents or licences are current. The following hazards and mitigation measures relevant to the remedial works are summarised in **Table 8-5**.

Table 8-5 Remedial Hazards

Anticipated Problems	Corrective Actions
Chemical Hazards	Contaminated sites have chemical compounds, substances or materials that may present a risk to human health and the environment. Chemicals of concern and associated risks are as detailed within the Conceptual Site Model, within **Section 4.** The site specific WHSP should set out controls to mitigate any potential risks.
Physical Hazards	The following hazards are associated with conditions that may be created during site works: ▪ Heat exposure; ▪ Buried services; ▪ Noise, vibration and dust; ▪ Electrical equipment; and ▪ The operation of heavy plant equipment.
Personal Protective Equipment and Monitoring	Personnel should, wherever possible, avoid direct contact with potentially contaminated material. Workers are to ensure that surface waters or groundwater is not ingested or swallowed and that direct skin contact with soil and water is avoided. Standard PPE with the addition of disposable P2 dust masks as specified for the contractor will be sufficient for the prescribed remedial works. Standard PPE includes: ▪ Long sleeve shirt and trousers ▪ Steel-toe footwear ▪ Safety glasses (as required) ▪ Helmet (as required) ▪ Hi-vis vest/clothing (as required)

Asbestos Air Monitoring

Asbestos has not been detected (above laboratory LOR of 0.01 %w/w) in samples of fill at the site. The following information is provided for completeness.

Air monitoring is mandatory for all friable ACM removal work. Air monitoring is not required for the removal of non-friable (bonded) ACM; however it is recommended that air monitoring is conducted during any works involving the removal of ACM, to ensure that the implemented controls are sufficient and not posing a risk to adjacent site users and nearby general public.

In the case that asbestos air monitoring is required, it must be conducted in accordance with the *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres* [NOHSC: 3003 (2005)] and analysed by a NATA-accredited laboratory. The criteria and actions that will apply to this project are summarised in **Table 8-6** and should also be detailed in the AMP, to be prepared for the site.

Note: Asbestos has not been encountered within fill soils during site investigations conducted to date, however non-friable ACM was identified on building structures in the form of asbestos cement (AC) eaves and gables.

Table 8-6 Asbestos Criteria for Air Monitoring

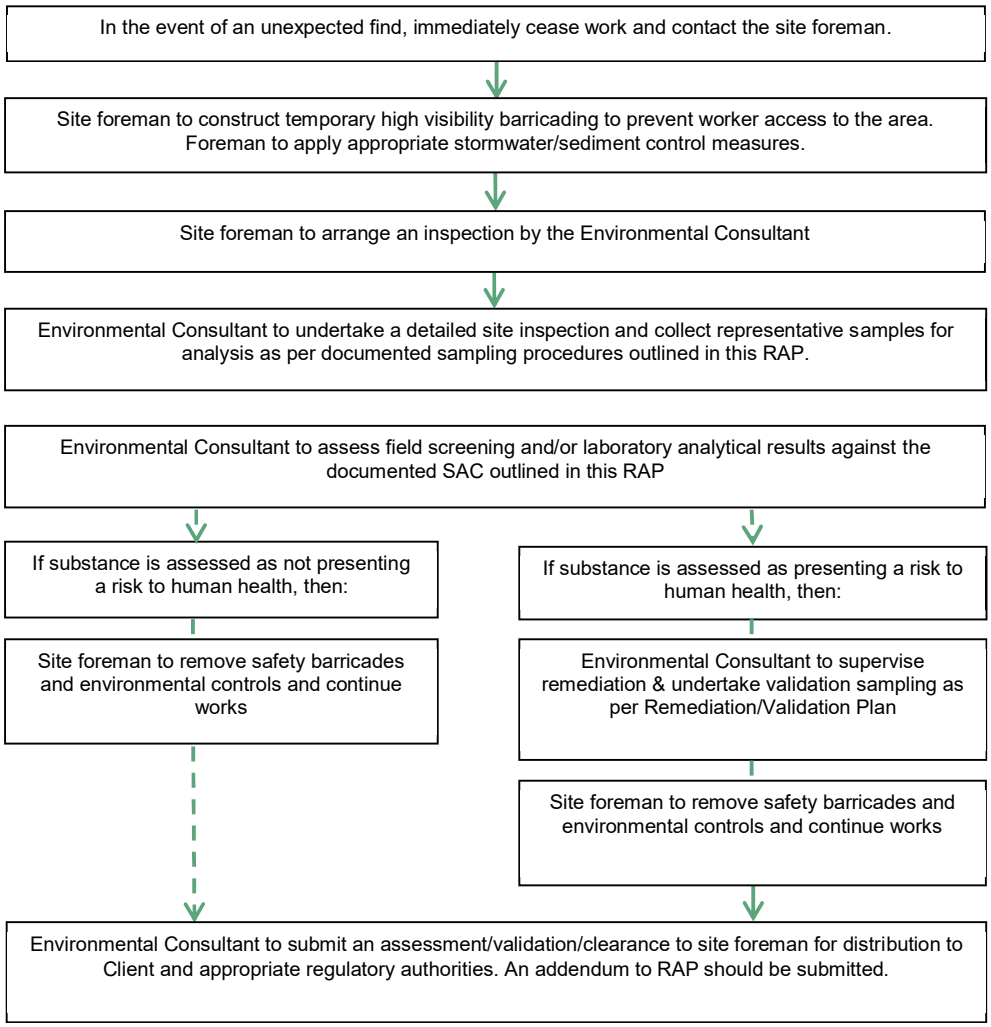
Control Level (fibres/mL)	Control / Action
< 0.01	No Action. Continue with existing control measures.

Control Level (fibres/mL)	Control / Action
⩾0.01	Asbestos Consultant to notify Project Manager of results as soon as practicable. Project Manager to notify/engage a Licensed Asbestos Removal Contractor. Asbestos Consultant and Project Manager to review current control measures and improve, where applicable. This may include improved work practices, use of further control measures (e.g. plastic screening or wet wiping techniques) or changing the work methodology.
⩾0.02	Asbestos Consultant to notify Project Manager of results as soon as practicable. Asbestos Consultant to advise Licensed Asbestos Removal Contractor to stop work immediately. Asbestos Consultant to conduct investigations to establish cause of problem. Asbestos Consultant to advise Licensed Asbestos Removal Contractor on necessary works to rectify problem. Asbestos air monitoring to be continued by Asbestos Consultant. Contractors will be allowed to return to works area after results are <0.01 fibres/mL.

8.6 Unexpected Finds Protocol

Should unexpected finds be encountered, the approach in **Table 8-7** should be followed.

Table 8-7 Unexpected Finds Protocol



Unexpected Findings Protocol – Underground Storage Tank

If a suspected UST or associated infrastructure (e.g. vent pipe, fill point or piping) is encountered during site works, all intrusive activities in the immediate vicinity must cease, and the area should be made safe and secured to prevent disturbance. The discovery must be reported immediately to the environmental consultant and site manager. An assessment will be undertaken by a suitably qualified and experienced environmental consultant to determine the nature, extent, and potential environmental risks associated with the UST. If contamination is suspected, soil and/or groundwater sampling may be required in accordance with the *NSW EPA Guidelines for Consultants Reporting on Contamination Sites (2020)*. Depending on the findings, notification to the NSW EPA under the *Contaminated Land Management Act 1997* may be required. Further management or removal of the UST must be undertaken in accordance with applicable Work Health and Safety (WHS) regulations and relevant Australian Standards (e.g. AS4976 for the decommissioning of USTs).

9. VALIDATION SAMPLING, ANALYSIS AND QUALITY PLAN

Validation sampling is required to confirm that the material remaining or retained for reuse on the site is suitable for its proposed use. Validation will be achieved when either:

- All requirements of this RAP are confirmed as completed;
- All concentrations of the contaminants of concern within material retained at the site are below the SAC (**Section 5.2**); or
- When the 95% upper confidence limit (95% UCL) of the average concentration (for each COPC, except asbestos) in the soils remaining on site is below the SAC.

The sampling and analysis quality plan (SAQP) will be crucial to the site validation phase. It ensures that the data collected are representative and provide a robust basis for site decisions.

9.1 Quality Objectives

9.1.1 Data Quality Objectives

In accordance with the USEPA (2006) *Data Quality Assessment* and the NSW EPA (2017) *Contaminated Land Management: Guidelines for the NSW Site Auditor Scheme* (3rd Edition), data quality objectives (DQO) will be defined by the EI team to determine the appropriate level of data quality needed for the specific requirements of the project. The DQO process to be applied for the proposed remediation is documented in **Table 9-1.**

Table 9-1 Data Quality Objectives

Step	Description
State the Problem	The site is to be rendered suitable for its proposed redevelopment, to be used as a multi-storey residential apartment building with four levels of basement car parking, as described in **Section 1.2**. Based on the proposed land use, the SAC have been defined as NEPC (2013) *HIL-B*, applicable for residential land use, *HIL-D* applicable for the dedicated TfNSW area and *HSL-D* for the basement footprint. Previous investigations (**Section 3.1**) identified contamination (lead and PAHs) within fill soils at multiple locations across site. The tasks and procedures described in this RAP are to be implemented, to achieve the remediation goal of rendering the site suitable for its proposed land use.
Identify the Decision	Based on the remediation objectives outlined in **Section 1.3**, the following decisions need to be made: ▪ Has the nature and extent of soil impacts on-site been defined? ▪ Does the level of impact, coupled with the fate and transport of identified contaminants, represent an unacceptable risk to identified human and/or environmental receptors on or offsite?; and ▪ Will further remediation and/or environmental management be required before the site is suitable for the intended land use?

Step	Description
Identify Inputs to the Decision	Inputs to the decision making process will include: ▪ Findings from previous site investigations; ▪ Details of the proposed site use; ▪ Understanding of current site use and historic activities that have occurred, including potential off-site sources of contamination; ▪ Geological and hydrogeological data relevant to the area; ▪ Field observations for the presence of visual/olfactory contamination indicators; ▪ Contaminant concentrations in soil and groundwater samples confirming effective removal of identified impacts; and ▪ Confirmation that data quality indicators (DQIs) were achieved for sample collection and handling, as well as field and laboratory QC samples.
Define the Boundary of the Remediation / Validation	**Lateral –** Works will be limited to the site boundaries (**Figure 2**, **Appendix A**). **Vertical –** From existing ground surface, underlying fill and natural soil horizons, to the base of contaminated soil. **Temporal –** Results will be valid on the day samples are collected and will remain valid if no changes to site use occur, and contamination (if present) does not migrate from off-site sources.
Develop a Decision Rule	The decision rules for validation are: ▪ Is the site suitable for the proposed land use? *If the concentrations of contaminants that remain are below the SAC for the intended land use* (**Table 5-1**), *then the site will be deemed suitable for the proposed development.* ▪ Is additional information required to determine the suitability of the site for its proposed use? *Should additional information be required, as determined by the updated CSM, then appropriate recommendations will be provided.* Decision criteria for analytical data are defined by the DQIs in **Table 9-2**.
Specify Acceptable Limits on Decision Errors	Specific limits for this project will be in accordance with NEPC (2013), appropriate DQIs for assessing useability of the data and EI standard procedures for field sampling and handling. To assess the useability of data, pre-determined DQIs for accuracy, precision, representativeness and completeness will be applied (presented in **Table 9-2**). If any of the DQIs are not met, further assessment will be necessary to determine whether the non-conformance will significantly affect data useability. Corrective actions may include requesting further information from samplers and/or analytical laboratories, downgrading of the quality of the data and/or re-collection of samples.
Optimise the Design for Obtaining Data	Written instructions will be issued, to guide personnel during the required fieldwork activities. Remediation works are to be performed as per **Section 7**. Validation sampling to be completed as per **Section 9** methodology. All sampling procedures will be implemented to optimise data collection and achieve the DQOs. Review of the results will be undertaken to determine if further excavation and/or additional sampling are warranted. Additional investigations would be warranted where concentrations are found to exceed the SAC endorsed by the NSW EPA, relevant to the proposed land use(s).

9.1.2 Data Quality Indicators

To ensure that the validation data (including any additional assessment data) are of an acceptable quality, the results will be evaluated against the DQIs outlined in **Table 9-2.**

Table 9-2 Data Quality Indicators

QA/QC Component	Data Quality Indicator(s)
Precision A quantitative measure of the variability (or reproducibility) of data	Data precision assessed by reviewing the performance of blind field duplicate sample sets, through calculation of relative percentage differences (RPD). Data precision deemed acceptable if RPDs found to be less than 30%. RPDs that exceed this range are considered acceptable where: ▪ Results were less than 10 times the limits of reporting (LOR); ▪ Results were less than 20 times the LOR and the RPD was less than 50%; or ▪ Heterogeneous materials or volatile compounds were encountered.
Accuracy A quantitative measure of the closeness of reported data to the “true” value	Data accuracy assessed through the analysis of: ▪ Split field duplicate sample sets; ▪ Field and method blanks, analysed for the analytes targeted in the primary samples; ▪ Matrix spike sample sets; and ▪ Laboratory control samples.
Representativeness The confidence (expressed qualitatively) that data are representative of each medium present onsite	To ensure the data produced by the laboratory is representative of conditions encountered in the field, the following measures will be taken: ▪ Blank samples run in parallel with field samples, to confirm there were no unacceptable instances of laboratory artefacts; ▪ Review of relative percentage differences (RPD) values for field and laboratory duplicates to provide an indication that the samples were generally homogeneous, with no unacceptable instances of significant sample matrix heterogeneities; and ▪ The appropriateness of collection methodologies, handling, storage and preservation techniques assessed to ensure/confirm there was minimal opportunity for sample interference or degradation (i.e., volatile loss during transport due to incorrect preservation / transport methods).
Completeness A measure of the amount of useable data from a data collection activity	Analytical data sets acquired during the investigation evaluated as complete upon confirmation that: ▪ Standard operating procedures (SOPs) for sampling protocols adhered to; and ▪ Copies of all chain of custody (COC) documentation are included and found to be properly completed. Consideration of whether the proportion of “useable data” generated in the data collection activities was sufficient for the purposes of the land use assessment.
Comparability The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event	Issues of comparability of separate data sets are reduced through adherence to SOPs and regulator-endorsed or published guidelines and standards on each data gathering activity. In addition the data are to be collected by experienced samplers and NATA-accredited laboratory methodologies will be employed for sample analysis.

9.2 Validation Sampling Methodology

Validation sampling will be undertaken following the removal of identified contaminated material to ensure that the vertical and lateral extent of the impacts have been delineated, as outlined in **Table 9-3**. Should additional contamination be identified, it will be 'chased out' where appropriate until material exceeding the SAC has been completely removed. Soil sampling and handling of the collected samples will be as described in **Table 9-4**.

Table 9-3 Validation Sampling Design

Remediation Area	Sampling Density	Chemicals of Concern
Data Gap Investigation		
Additional sampling in set backs within eastern part of basement footprint	Additional 12 test pit and borehole locations	Site investigation parameters: Plus analytes sufficient for general site characterisation and in situ waste classification (Priority metals, TRH, BTEX, PAH, OCP, OPP, PCB, asbestos presence/absence)
Remediation Areas		
PAH impacted fill areas	Base – 1 sample per 25m^2. Walls – 1 sample per 5m length	PAHs Plus analytes sufficient for general site characterisation and in situ waste classification (Priority metals, TRH, BTEX, PAH, OCP, OPP, PCB, asbestos presence/absence)
Waste Classification		
Stockpiled materials	Any soil material stockpiled on-site for off-site disposal (not pre-classified), will be sampled for waste classification purposes at a rate of one per 25m^3 (with a minimum of 3 samples for stockpiles <25m^3) up to 250 m^3. For stockpiles >250m^3 but <2,500m^3 in size, a statistical analysis approach may be used for classification, with the collection of at least 10 samples (not applicable to asbestos).	Priority metals, TRH, BTEX, PAH, OCP, OPP, PCB and asbestos
In-situ materials	Any soil material destined for off-site disposal and is not pre-classified, can alternatively be sampled in-situ, prior to excavation and stockpiling.	Priority metals, TRH, BTEX, PAH, OCP, OPP, PCB and asbestos
Imported soil materials	If material is required to be sourced from off-site to reinstate excavations, it will be certified suitable for the intended use, prior to importation.	Priority metals, TRH, BTEX, PAH, OCP, OPP, PCB and asbestos

Chase out extent: Excavation of identified contaminated material shall continue until the analytical results indicate compliance with the SAC (i.e. either the concentrations of all contaminants are within the SAC, or the 95% upper confidence limit (UCL) of the average concentration for each detected parameter is within the corresponding criterion). If results indicate that additional excavation is necessary, the excavation shall be extended laterally

and/or vertically until the excavation surface samples indicate that the location is validated as meeting the criterion for each respective contaminant.

Asbestos gravimetric protocol (if required): Sampling and testing for asbestos to be undertaken using the gravimetric procedures as per NEPM (2013), where individual bulk samples (10 L) will be collected then manually screened on-site through a 7mm sieve and the residual remaining in the sieve examined for any bonded asbestos. In addition a 500mL soil sample will be collected from the original sampling point (not from sieved material). Samples will be sent to a NATA Accredited Laboratory for asbestos identification and quantification analysis. Note: Contrasting board may be used as alternative to field sieving, particularly where friable asbestos has been identified.

Table 9-4 Validation Sample Collection and Handling Procedures

Action	Description of Required Works
Sample Collection	Soil validation samples will be collected directly from the exposed (excavated) surface. Sampling data shall be recorded to comply with routine chain of custody requirements.
Sampling, Handling, Transport and Tracking	▪ The use of stainless-steel or disposable (one time use) equipment. ▪ All sampling equipment (including hand tools or excavator parts) to be washed in a 3% solution of phosphate free detergent (Decon 90©), followed by a rinse with potable water prior to each sample being collected. ▪ Direct transfer of the sample into new glass jars, bottles, vials or plastic bags is preferred, with each plastic bag individually sealed to eliminate cross contamination during transportation to the laboratory. ▪ Label sample containers with individual and unique identification including Project No., Sample No., depth, date and time of sampling. ▪ Place sample containers into a chilled, enclosed, and secure container for transport to the laboratory. ▪ Provide chain of custody documentation to ensure that sample tracking and custody can be cross-checked at any point in the transfer of samples from the field to the laboratory.
Sample Containers and Holding Times	▪ Metals - 250g glass jar / refrigeration 4^{o}C / 6 months (maximum holding period). ▪ TRH/BTEX - 250g glass jar / refrigeration 4^{o}C / 14 days (maximum holding period). ▪ PAH/OCP/OPP - 250g glass jar / refrigeration 4^{o}C / 14 days (maximum holding period). ▪ Asbestos - up to a 10 Litre resealable plastic (polyethylene) bag / no refrigeration / indefinite holding time.
Field QA/QC	Quality assurance (QA) and quality control (QC) procedures will be adopted throughout the field sampling program, to ensure sampling precision and accuracy, which will be assessed through the analysis of 10% field duplicate samples. Appropriate sampling procedures will be undertaken to prevent cross contamination, in accordance with EI's Standard Operating Procedures Manual. This will ensure: ▪ Standard operating procedures are followed; ▪ Site safety plans are developed prior to works commencement; ▪ Split duplicate field samples are collected and analysed; ▪ Samples are stored under secure, temperature-controlled conditions;

Action	Description of Required Works
	▪ Chain of custody documentation is employed for the handling, transport and delivery of samples to the contracted environmental laboratory; and ▪ Contaminated soil, fill or groundwater (if encountered) originating from the site area is disposed in accordance with relevant regulatory guidelines. In total, field QA/QC will include one in 10 samples to be tested as intra-laboratory, blind field duplicates, one in 20 samples to be tested as inter-laboratory, split field duplicates, as well as one VOC trip blank, one VOC spike sample per sample batch and one equipment wash blank (rinsate blank) per sample day.
Laboratory Quality Assurance and Quality Control	The contract laboratory will conduct in-house QA/QC procedures involving the routine analysis of: ▪ Reagent blanks; ▪ Surrogate recoveries; ▪ Laboratory duplicates; ▪ Calibration standards and blanks; ▪ Control standards; and ▪ Statistical analysis of each QC measure.
Achievement of Data Quality Objectives	DQOs (**Table 9-1**) are to be achieved and an assessment of the overall data quality should be presented in the final validation report, in accordance with NSW EPA (2017).

9.3 Validation Reporting

Once validation conditions as listed in **Section 9.2** are achieved, all results shall be presented in a Site Validation Report. The validation report will document all desk study findings, fieldwork, laboratory analyses, conceptual site model, investigation methodologies and results, their compliance with this RAP, data quality assessment, and conclusions and recommendations. It will be prepared in accordance with requirements described in:

- NSW EPA (2020a) *Consultants Reporting on Contaminated Land: Contaminated Land Guidelines, Table 2.6 Site Remediation and Validation*; and
- NSW EPA (2017) *Guidelines for the NSW Site Auditor Scheme*.

The site Validation Report should also:

- Provide a clear concluding statement regarding the overall efficacy of the remediation process and the suitability of the site for the proposed development; and
- Be submitted for Council and/or a Site Auditor (if engaged), at the completion of the remediation works programme.

10. CONCLUSIONS

This RAP has been prepared to inform the remediation and validation works to be completed at 810 Pacific Highway, Gordon, NSW. Remediation of identified carcinogenic PAH-impacted fill soils at TP101 was deemed required to render the site suitable for the proposed development. Additionally, metals and TRH concentrations were reported within groundwater exceeding the adopted site criteria.

The purpose of this RAP is to establish a sequential process for remediation and validation works, to support the proposed site redevelopment in compliance with the *State Environment Protection Policy (Resilience and Hazards) 2021.*

The objectives of this RAP, as outlined in **Section 1.3**, have been addressed and the selected, preferred remedial approach will involve the excavation of impacted materials, followed by waste classification and off-site disposal according to NSW EPA (2014). Alternatively, the remedial approach can be conducted as in-situ waste classification, followed by excavation of impacted materials, bulk load-out, and offsite disposal. It is envisaged that the remediation works will be implemented in stages, as follows:

- **Stage 1 –** Site establishment and preparation;
- **Stage 2 –** Building demolition and post–demolition clearances;
- **Stage 3 –** Additional soil sampling in northeast and south east setbacks and general fill in north east portion

Hold Point

- **Stage 4 –** Waste classification and Off-Site Disposal of Soil
- **Stage 5 –** Due Diligence investigation within TfNSW dedicated area;
- **Stage 6 –** Site validation; and
- **Stage 7 –** Preparation of a Validation Report.

This RAP provides protocols for the appropriate management of any unexpected finds that may be discovered during the course of the remediation works. In addition, should any phase of the validation assessment identify residual contamination requiring additional remediation, the procedures described under the validation sampling, analysis and quality plan (SAQP) (**Section 9**) will be implemented until the remediation goals have been achieved and the site is deemed suitable for its proposed future use.

In conclusion, EI considers that the site can be made suitable for its proposed future use through the implementation of the site remediation and validation processes described in this RAP.

11. LIMITATIONS

This plan has been prepared for the exclusive use of Site 3 Group Pty Ltd ('the client'), being the only intended beneficiaries of our work. The scope of this RAP is limited to that agreed with our client.

No other party should rely on the document without the prior written consent of EI, and EI undertakes no duty, or accepts any responsibility or liability, to any third party who purports to rely upon this document without EI's approval.

EI has used a degree of care and skill ordinarily exercised in similar investigations by reputable members of the environmental industry in Australia as at the date of this document. No other warranty, expressed or implied, is made or intended. Each section of this plan must be read in conjunction with the whole of this plan, including its appendices and attachments.

The methods and conclusions presented in this plan are based on a limited investigation of conditions, with specific sampling locations chosen to be as representative as possible under the given circumstances.

EI's professional opinions are reasonable and based on its professional judgment, experience, training and results from analytical data. EI may also have relied upon information provided by the client and other third parties to prepare this document, some of which may not have been verified by EI.

EI's professional opinions contained in this document are subject to modification if additional information is obtained through further investigation, observations, or validation testing and analysis during remedial activities. In some cases, further testing and analysis may be required, which may result in a further plan with different conclusions.

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Appendix A - Figures

LEGEND **Note: All locations are approximate**

Site Boundary

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Drawn:	M.C.
Approved:	C.W.
Date:	15/04/2025

Site 3 Group Pty Ltd

Remediation Action Plan

810 Pacific Highway, Gordon NSW

Site Locality Plan

Figure: 1

Project: E26674.E06_Rev0

Map Source: Nearmap, Imagery date: 20/01/25

LEGEND Note: Areas are approximate

- Site Boundary
- Basement Boundary
- TfNSW Dedicated Area for Future Developement
- Soil Vapour Locations (EI, 2025)
- Test Pit Location (EI, 2025)
- Groundwater Monitoring Well Location (EIS, 2016)
- Groundwater Monitoring Well (JK, 2025)
- Borehole Location (EIS, 2016)
- Borehole Location (EIS, 2016)
- Borehole Location (Geotechnique, 2022)

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Drawn:	M.O.
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AKA Industries Pty Ltd

Data Gap Investigation

810 Pacific Highway, Gordon NSW

Site Layout

Figure: 2

Project: E26674.E03

Map Source: Nearmap, Imagery date: 20/01/25

LEGEND Note: Locations are approximate

- Site Boundary
- Basement Boundary
- Dedicated area, due dilligence assessment subject to consultation with TFNSW
- Test pit location (EI, 2025)
- Additional sampling locations within setback area
- Additional sampling locations

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Drawn:	M.C.
Approved:	C.W.
Date:	17/04/2025

Site 3 Group Pty Ltd

Remediation Action Plan

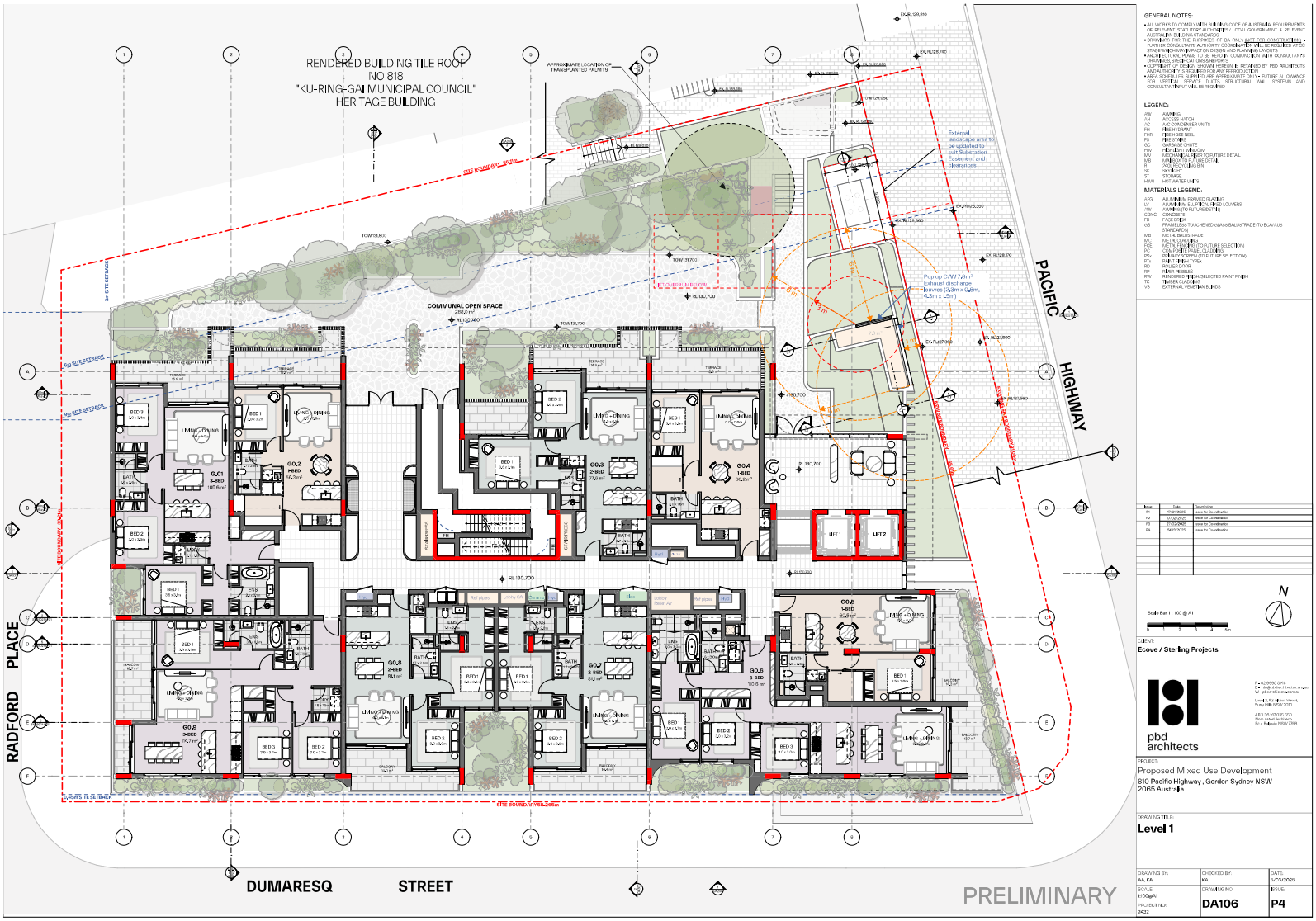
810 Pacific Highway, Gordon NSW

Proposed Sampling Plan

Figure: 3

Project: E26674.E06_Rev0

Appendix B – Architectural Plans



GENERAL NOTES:

- ALL WORKS TO COMPLY WITH BUILDING CODE OF AUSTRALIA, REQUIREMENTS OF RELEVENT STATUTORY AUTHORITIES, LOCAL GOVERNMENT & RELEVENT AUSTRALIAN BUILDING STANDARDS
- DRAWINGS TO BE READ IN CONJUNCTION WITH DA ONLY ISSUE FOR CONSTRUCTION DRAWINGS, CONSULTANTS, AUTHORITY CONDITIONS AND PLANNING LEGISLATIONS, STANDARDS AND ANY VARIATION OR DESIGN AND PLANNING LAYOUTS.
- ARCHITECTURAL PLANS TO BE READ IN CONJUNCTION WITH CONSULTANTS DRAWINGS, SPECIFICATIONS & REPORTS
- COPYRIGHT OF DESIGN SHOWN HEREON IS RETAINED BY PBD ARCHITECTS AND AUTHORITY NOT TO BE COPIED FOR ANY REPRODUCTION
- AREA SCHEDULES SUPPLIED ARE APPROXIMATE ONLY. • FUTURE ALLOWANCE FOR VERTICAL SERVICE DUCTS, STRUCTURAL WALL SYSTEMS AND CONSULTANTS INPUT WILL BE REQUIRED

LEGEND:

AW	AWNING
AH	ACCESS HATCH
AC	A/C CONDENSER UNITS
FH	FIRE HYDRANT
FHR	FIRE HOSE REEL
FS	FIRE STAIRS
GC	GARBAGE CHUTE
HW	HIGHLIGHT WINDOW
MB	MECHANICAL PLANT TO FUTURE DETAIL
MG	MAILBOXES TO FUTURE DETAIL
R	INDIVIDUAL MAIL BOX
SK	SKYLIGHT
ST	STORAGE
HWU	HOT WATER UNITS

MATERIALS LEGEND:

APS	ALUMINIUM PERFORATED PLATING
LV	ALUMINIUM LOUVRE/FIXED LOUVERS
AW	AWNING/OUTFUTURE DETAIL
CONC	CONCRETE
FB	FACE BRICK
GB	GLASS DOOR/SCREEN TO TOUCHENED GLASS BALUSTRADE TO BUILDING
MB	FRAMED SCREEN METAL BALUSTRADE
MC	METAL CLADDING
FCS	METAL FENCING TO FUTURE SELECTION
PC	COMPOSITE PANEL CLADDING
PSc	PRIVACY SCREEN (TO FUTURE SELECTION)
PTs	PAINT FINISH TYPES
RO	ROLLER DOOR
RP	RUBER PEDDING
TF	TIMBER FINISH/SELECTED PAINT FINISH
TO	TIMBER LOUVRES
VB	EXTERNAL VENETIAN BLINDS

Issue	Date	Description
P1	17/07/2025	Issue for Coordination
P2	31/07/2025	Issue for Coordination
P3	21/08/2025	Issue for Coordination
P4	5/09/2025	Issue for Coordination

Scale Bar 1 : 100 @ A1

N

CLIENT:
Ecove / Sterling Projects

pbd architects

PROJECT:
Proposed Mixed Use Development
810 Pacific Highway , Gordon Sydney NSW 2065 Australia

DRAWING TITLE:
Level 1

DRAWING BY:	CHECKED BY:	DATE:
AA, KA	KA	5/09/2025
SCALE: 1:100@A1	DRAWING NO: DA106	ISSUE: P4
PROJECT NO: 2422		

Appendix C – Previous investigation Results

Table C1 – Summary of Soil Analytical Results **E26674 - Gordon**

Sampling Date	Sample ID	Sampling Depth (below mstng ground level)	Soil Matrix	PID Readings (ppm)	Priority Metals								PAHs				BTEX				TRHs				VOCs		Pesticides		PCBs	Asbestos		PFAS		
					As	Cd	Cr^6	Cu	Pb	Hg	Ni	Zn	Carcinogenic PAHs as BaP TEQ	Benzo(a)pyrene	Total PAHs	Naphthalene	Benzene	Toluene	Ethylbenzene	Total Xylenes	F1	F2	F3	F4	Phenol(s)/Styrene	Total VOCs	OCPs	OPPs		(Visual)	Presence / absence	PFOS	PFOS + PFHxS	PFOA
Stage 2 ESA (EIS, 2016d)																																		
FILL																																		
	PQL [5]				4	0.4	1	1	1	0.1	1	1	-	0.5	-	1	0.2	0.5	1	3	25	50	100	100	N.A.	N.A.	0.1	0.1	0.1	N.A.	-	N.A.	N.A.	N.A.
	BH101	0-0.2	Silty clay	0.1	LPQL [1]	LPQL	11	30	31	LPQL	13	430	N.A.	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	N.A.	N.A.	LPQL	LPQL	LPQL	N.A.	Absent	N.A.	N.A.	N.A.
	BH102	0-0.2	Silty sand	0	LPQL	LPQL	6	7	14	LPQL	5	51	N.A.	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	N.A.	N.A.	LPQL	LPQL	LPQL	N.A.	Absent	N.A.	N.A.	N.A.
	BH103	0-0.2	Silty sand	0	LPQL	LPQL	5	6	13	LPQL	4	36	N.A.	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	N.A.	N.A.	LPQL	LPQL	LPQL	N.A.	Absent	N.A.	N.A.	N.A.
	BH104	0.5-0.95	Silty clay	0	6	LPQL	13	18	22	LPQL	9	34	N.A.	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	N.A.	N.A.	LPQL	LPQL	LPQL	N.A.	Absent	N.A.	N.A.	N.A.
10/11/2016	BH104	4.2-4.4	Silty clay	0	5	LPQL	21	12	24	LPQL	13	22	N.A.	0.94	12.14	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	N.A.	N.A.	LPQL	LPQL	LPQL	N.A.	Absent	N.A.	N.A.	N.A.
	BH105	0.5-0.95	Silty sand	0	LPQL	LPQL	33	7	13	LPQL	23	34	N.A.	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	N.A.	N.A.	LPQL	LPQL	LPQL	N.A.	Absent	N.A.	N.A.	N.A.
	BH106	0.5-0.95	Sandy clay	0	LPQL	LPQL	7	2	19	LPQL	1	47	N.A.	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	N.A.	N.A.	LPQL	LPQL	LPQL	N.A.	Absent	N.A.	N.A.	N.A.
	BH106	1.5-1.6	Sandy clay	105.7	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	LPQL	LPQL	LPQL	N.A.	N.A.	N.A.	N.A.	N.A.
	BH107	0.5-0.95	Silty sand	0	10	LPQL	16	5	13	LPQL	6	8	N.A.	LPQL	0.98	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	N.A.	N.A.	LPQL	LPQL	LPQL	N.A.	Absent	N.A.	N.A.	N.A.
	BH108	1.5-1.95	Sand	0	LPQL	LPQL	3	3	5	LPQL	LPQL	2	N.A.	LPQL	3.5	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	N.A.	N.A.	LPQL	LPQL	LPQL	N.A.	Absent	N.A.	N.A.	N.A.
	Statistical Analysis																																	
	Maximum Concentration				10	0	33	30	31	0	23	430	0	0.94	12.14	0.00	0.00	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	N.A.	NC	<PQL	<PQL	<PQL	N.A.	Absent	N.A.	N.A.	N.A.
NATURAL																																		
	BH101	1.1-1.3		0	10	LPQL	8	40	16	LPQL	10	46	N.A.	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	N.A.	N.A.	LPQL	LPQL	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	BH102	0.5-0.75		0	5	LPQL	4	26	23	0.2	6	21	N.A.	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	N.A.	N.A.	LPQL	LPQL	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	BH103	1.4-1.6		0	11	LPQL	11	34	17	LPQL	12	50	N.A.	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	N.A.	N.A.	LPQL	LPQL	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	BH105	1.5-1.95		3.7	LPQL	LPQL	3	LPQL	20	LPQL	LPQL	LPQL	N.A.	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	N.A.	N.A.	LPQL	LPQL	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
10/11/2016	BH105	2.8-3.0	Shale	1,031	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	1	1	292 [4]	LPQL	N.A.	N.A.	N.A.	N.A.	LPQL	LPQL	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	BH106	3.6-3.45		27.1	7	LPQL	2	LPQL	11	LPQL	LPQL	1	N.A.	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	N.A.	N.A.	LPQL	LPQL	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	BH107	1.5-1.8		1.3	5	LPQL	21	1	18	LPQL	2	4	N.A.	LPQL	1.26	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	N.A.	N.A.	LPQL	LPQL	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	BH108	4.5-4.75		0	8	LPQL	8	2	9	LPQL	LPQL	LPQL	N.A.	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	N.A.	N.A.	LPQL	LPQL	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	BH108	5.5-6.0		54.9	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	LPQL	LPQL	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Statistical Analysis																																	
	Maximum Concentration				11	<PQL	21	40	23	0.2	12	50	N.A.	<PQL	<PQL	<PQL	<PQL	<PQL	<PQL	1	1	250	<PQL	<PQL	<PQL	N.A.	N.A.	<PQL	<PQL	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Data Gap Investigation (EI, 2022)																																		
FILL																																		
	TP101_0.1-0.2	0.1-0.2		0.3	3	<0.3	7.8	11	20	<0.05	6.6	42	<0.2	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	100	<120	<0.1	<24	<0.1	<1.7	<0.1	<0.01	Absent	<0.005	<0.005	<0.005
	TP101_0.9-1.0	0.9-1.0		0.5	6	<0.3	24	18	49	0.07	20	40	19	14	160	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	520	<120	<0.1	N.A.	N.A.	N.A.	N.A.	<0.01	Absent	N.A.	N.A.	N.A.
	TP101_1.9-2.0	1.9-2.0		0.4	3	<0.3	3.9	5.1	7	<0.05	1.8	11	2.2	1.6	15	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	110	<120	<0.1	N.A.	<0.1	<1.7	<0.1	<0.01	Absent	N.A.	N.A.	N.A.
	TP101_2.9-3.0	2.9-3.0		0.8	4	<0.3	7.8	19	39	0.05	8.6	43	6.4	4.4	45	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	300	<120	<0.1	N.A.	N.A.	N.A.	N.A.	<0.01	Absent	N.A.	N.A.	N.A.
	TP101_3.9-4.0	3.9-4.0		0.4	4	<0.3	4.9	6.5	8	<0.05	2.4	17	0.3	0.2	2	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<50	<120	<0.1	N.A.	<0.1	<1.7	<0.1	<0.01	Absent	N.A.	N.A.	N.A.
5/03/2025	TP102_0.1-0.2	0.1-0.2	Gravelly Sand	0.2	2	<0.3	7.2	3.9	11	<0.05	2.3	17	<0.2	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<50	<120	<0.1	<24	<0.3	<1.7	<0.1	<0.01	Absent	<0.005	<0.005	<0.005
	TP102_1.0-1.1	1.0-1.1		0.2	4	<0.3	6.9	3.9	27	<0.05	1.9	30	<0.2	0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<50	<120	<0.1	N.A.	N.A.	N.A.	N.A.	<0.01	Absent	N.A.	N.A.	N.A.
	TP102_2.0-2.1	2.0-2.1		0.4	6	<0.3	4.6	<0.3	19	<0.05	<0.3	6.2	<0.2	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<50	<120	<0.1	N.A.	<0.1	<1.7	<0.1	<0.01	Absent	N.A.	N.A.	N.A.
	TP102_2.4-2.5	2.4-2.5		0.2	4	<0.3	6.6	9.1	71	<0.05	3.9	26	0.5	0.4	3.2	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<50	<120	<0.1	N.A.	N.A.	N.A.	N.A.	<0.01	Absent	N.A.	N.A.	N.A.
	TP104_0.15-2.0	0.15-2.0		0.3	2	<0.3	2.4	19	10	0.22	1.3	3.2	<0.2	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<50	<120	<0.1	<24	<0.1	<1.7	<0.1	<0.01	Absent	<0.005	<0.005	<0.005
	TP105_0.15-0.2	0.15-0.2		0.5	4	<0.3	6.1	22	18	<0.05	4.2	16	<0.2	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<50	<120	<0.1	<24	<0.1	<1.7	<0.1	<0.01	Absent	<0.005	<0.005	<0.005
	TP107_0.15-0.2	0.15-0.2		0.3	2	<0.3	13	5	5	<0.05	5.5	19	<0.2	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<50	<120	<0.1	<24	<0.3	<1.7	<0.1	<0.01	Absent	<0.005	<0.005	<0.005
	TP103_2_0.2-0.3	0.2-0.3	Silty SAND	0.2	3	<0.3	7.4	9.3	21	<0.05	6.3	54	<0.2	0.2	1.4	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<50	<120	0.1	<24	<0.1	<1.7	<0.1	<0.01	Absent	N.A.	N.A.	N.A.
	TP103_2_0.5-0.6	0.5-0.6	Silty CLAY	0.1	4	<0.3	19	4.7	19	<0.05	7.6	8.2	<0.2	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<50	<120	<0.1	N.A.	<0.1	<1.7	<0.1	<0.01	Absent	N.A.	N.A.	N.A.
12/03/2025	TP106_2_0.2-0.3	0.2-0.3	Silty SAND	0.1	6	<0.3	5.7	8.4	5	<0.05	4.2	35	<0.2	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<50	<120	<0.1	<24	<0.3	<1.7	<0.1	<0.01	Absent	N.A.	N.A.	N.A.
	TP106_2_0.3-0.4	0.3-0.4	mix of aggregate and bedrock	0.1	5	<0.3	22	37	16	<0.05	35	150	<0.2	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.3	<25	37	150	<120	<0.1	N.A.	<0.1	<1.7	<0.1	<0.01	Absent	N.A.	N.A.	N.A.
	TP108_2_0.2-0.3	0.2-0.3	Roadbase aggregate	0.1	3	<0.3	110	37	4	<0.05	93	78	<0.2	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<50	<120	<0.1	<24	<0.1	<1.7	<0.1	<0.01	Absent	N.A.	N.A.	N.A.
	Statistical Analysis																																	
	Maximum Concentration				6	<0.3	110	37	71	0.22	93	150	19	14	160	<0.1	<0.1	<0.1	<0.1	<0.3	<25	37	520	<120	0.1	<24	<1	<1.7	<0.1	<0.01	Absent	<0.005	<0.005	<0.005
NATURAL																																		
	TP102_3.4-3.5	3.4-3.5	Clayey SAND	0.2	4	<0.3	17	<0.5	17	<0.05	<0.5	28	<0.2	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<50	<120	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	TP104_0.2-0.3	0.2-0.3	SHALE	0.5	3	<0.3	3.1	16	12	<0.05	0.7	3.9	<0.2	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<50	<120	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
5/03/2025	TP105_0.4-0.5	0.4-0.5		0.2	5	<0.3	4.3	20	9	<0.05	2.7	17	<0.2	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<50	<120	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	TP107_0.2-0.3	0.2-0.3		0.3	4	<0.3	2.4	20	6	<0.05	2.6	8.6	<0.2	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<50	<120	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
	Statistical Analysis																																	
	Maximum Concentration				5	<0.3	17	20	17	<0.05	2.7	28	<0.3	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.3	<25	<25	<50	<120	0.1	<24	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
NEPM (2013) Criteria																																		
HIL B - Residential with minimal soil access					500	150	500 Cr(VI)	30,000	1,200	120	1,200	60,000	4		400													600		1					
HSL D - Commercial / Industrial Soil texture classification – CLAY [7]					Source depths (0 m to <1 m BGL)												NL	4	NL	NL	NL	310	NL						0.05% bonded ACM	No visible asbestos for surface soil			
					Source depths (1 m to <2 m BGL)												NL	6	NL	NL	NL	480	NL											
					Source depths (2 m to <4 m BGL)												NL	9	NL	NL	NL	NL	NL											
					Source depths (4 m + BGL)												NL	10	NL	NL	NL	NL	NL											
EILs / ESLs - Urban residential and public open space [3]					100		410	220 [7]	1,100		170 [8]	520 [9]		0.7			170	50	85	70	105	180	120	300	2,800									
Management Limits – Residential, parkland and public open space [3]																						700	1,000	2,500	10,000								
HEPA (2025) PFAS - Residential with minimal soil access [6]																															2		20
HEPA (2025) PFAS - Ecological [10]																															1		10^{11}

Notes:

Highlighted values exceed HIL / HSL

Concentration exceeds highlighted criteria

Results are recorded in mg/kg

HIL B — NEPC 1999 Amendment 2013: HIL - Health-based residential with minimal soil access settings.

HSL D — NEPC 1999 Amendment 2013 HSL D Health Based Screening Levels applicable for vapour intrusion values applicable for commercial / industrial settings, coarse grained sands selected as the conservative option.

\# — Thresholds are for Chromium VI.

N.A. — Not Analysed

NL — Not Limiting If the derived soil vapour limit exceeds the soil concentration at which the pore water phase cannot dissolve any more of the individual chemical

NC — Not calculated

1 — Fine-grained soil assessment criteria were applied.

2 — EIS (2016) used 'LPQL' refer to as less than PQL on their results table.

3 — EIL criteria is derived from a site specific Added Contaminant Limit (ACL) with the Ambient Background Concentration (ABC) for a high traffic NSW suburb.
This criteria were considered relevant for retained deep soils of the amended site.

4 — Value derived from the National Environmental Management Plan (NEPM 3.0) for PFAS - Soil Criteria for Investigation - Human Health Based Guidance Values for Commerical / Industrial Sites.

5 — Envirlab Practical Quantification Limit

6 — EIS (2016) adopted HSL - B (NEPC, 2012) as the site criteria. However, EI (2025) adopted HSL - D, with reference to Section 2.4.8 (NEPC, 2013).

7 — On the basis of CEC: 10 cmol/kg, pH 7, high traffic volume and aged suburb.

8 — On the basis of CEC: 10 cmol/kg, high traffic volume and aged suburb.

9 — On the basis of CEC: 10 cmol/kg, pH 7, high traffic volume and aged suburb.

10 — NEPC (2025) NEMP 3.0 - Table 6, Ecological direct exposure - all land-uses

11 — PFOA is 0.005 x an interim screening value if reptiles may be exposed.

F1 — F1 is obtained by subtracting the sum of BTEX concentrations from the C6-C10 fraction.

F2 — F2 is obtained by subtracting naphthalene from the >C10-C16 fraction.

F3 — (>C16-C34)

F4 — (>C34-C40)

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Table C2 - Summary of Laboratory Results for In-Situ Soil Samples, Assessed Against Waste Classification Criteria **E26674 - Gordon**

Sample ID		Sampling date	Sampling Depth (fill material below metre ground level, unless specified)	Heavy Metals										PAHs			BTEX				TRHs		Total OCPs	Total OPPs	Total PCBs	Asbestos Presence / Absence
				As	Cd	Cr (VI)	Cr (VI) TCLP	Cu	Pb	Ni	Ni TCLP	Zn	Hg	Benzo(a)pyrene	TCLP Benzo(a)pyrene	Total PAHs	Benzene	Toluene	Ethylbenzene	Total Xylenes	C6 - C9	C10 - C36				
Waste Classification Assessment Criteria	NSW EPA 2014 General Solid Waste	CT1 (mg/kg) [1]		100	20	100 [5]			100	40			4	0.8		200	10	288	600	1,000	650	10,000	<50	<50	<50	Asbestos presence: Special Waste - Asbestos Waste
		TCLP1 (mg/L) [2]		5	1		5		5		2		0.2		0.04	NR	0.5	14.4	30	50	NR	NR	NR	NR	NR	
		SCC1 (mg/kg) [2]		500	100	1,900			1500	1,050			50	10		200	18	518	1,080	1,800	650	10,000	<50	<50	<50	
	NSW EPA 2014 Restricted Solid Waste	CT2 (mg/kg) [3]		400	80	400 [5]		NR	400	160		NR	16	3.2		800	40	1,152	2,400	4,000	2,600	40,000	NR	NR	NR	
		TCLP2 (mg/L) [4]		20	4		20		20		8		0.8		0.16	NR	2	58	120	200	NR	NR	NR	NR	NR	
		SCC2 (mg/kg) [4]		2,000	400	7,600			6,000	4,200			200	23		800	72	2,073	4,320	7,200	2,600	40,000	<50	<50	<50	
	Special Waste / Scheduled Waste [5, 6]																						>2mg/kg Scheduled Waste [5]		>2mg/kg Scheduled Waste [6]	
Detailed Site Investigation (EIS, 2016)																										
PQL				4	0.4	1		1	1	1		1	0.1	0.5	-	1	0.2	0.5	1	3	25	250	0.1	0.1	0.1	-
BH101		10/11/2016	0-0.2	LPQL	LPQL	11	-	30	31	13	-	430	LPQL	LPQL		LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Absent
BH102			0-0.2	LPQL	LPQL	6	-	7	14	5	-	51	LPQL	LPQL	-	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Absent
BH103			0-0.2	LPQL	LPQL	5	-	6	13	4	-	36	LPQL	LPQL	-	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Absent
BH104			0.5-0.95	6	LPQL	13	-	18	22	9	-	34	LPQL	LPQL	-	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Absent
BH104			4.2-4.4	5	LPQL	21	-	12	24	13	-	22	LPQL	0.94	-	12.14	LPQL	LPQL	LPQL	LPQL	LPQL	140	LPQL	LPQL	LPQL	Absent
BH105			0.5-0.95	LPQL	LPQL	33	-	7	13	23	-	34	LPQL	LPQL	-	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Absent
BH106			0.5-0.95	LPQL	LPQL	7	-	2	19	1	-	47	LPQL	LPQL	-	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Absent
BH106			1.5-1.6	N.A.	N.A.	N.A.	-	N.A.	N.A.	N.A.	-	N.A.	N.A.	N.A.	-	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
BH107			0.5-0.95	10	LPQL	16	-	5	13	6	-	8	LPQL	LPQL	-	0.98	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Absent
BH108			1.5-1.95	LPQL	LPQL	3	-	3	5	LPQL	-	2	LPQL	LPQL	-	3.5	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Absent
BH101			1.1-1.3	10	LPQL	8	-	40	16	10	-	46	LPQL	LPQL	-	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	N.A.
BH102			0.5-0.75	5	LPQL	4	-	26	23	6	-	21	0.2	LPQL	-	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	N.A.
BH103			1.4-1.6	11	LPQL	11	-	34	17	12	-	50	LPQL	LPQL	-	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	N.A.
BH105			1.5-1.95	LPQL	LPQL	3	-	LPQL	20	LPQL	-	LPQL	LPQL	LPQL	-	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	N.A.
BH105			2.8-3.0	N.A.	N.A.	N.A.	-	N.A.	N.A.	N.A.	-	N.A.	N.A.	N.A.	-	LPQL	LPQL	LPQL	1	1	140	110	LPQL	LPQL	LPQL	N.A.
BH106			3.0-3.45	7	LPQL	2	-	LPQL	11	LPQL	-	1	LPQL	LPQL	-	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	N.A.
BH107			1.5-1.8	5	LPQL	21	-	1	18	2	-	4	LPQL	LPQL	-	1.26	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	N.A.
BH108			4.5-4.75	8	LPQL	8	-	2	9	LPQL	-	LPQL	LPQL	LPQL	-	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	N.A.
BH108			5.8-6.0	N.A.	N.A.	N.A.	-	N.A.	N.A.	N.A.	-	N.A.	N.A.	N.A.	-	N.A.	N.A.	N.A.	N.A.	N.A.	LPQL	LPQL	LPQL	LPQL	LPQL	N.A.
Data Gap Investigation (EI, 2025)																										
TP101_0.1-0.2		3/03/2025	0.1-0.2	3	<0.3	7.8	-	11	20	6.6	-	42	<0.05	<0.1	-	<0.8	<0.1	<0.1	<0.1	<0.3	<20	130	<0.1	<1.7	<0.1	Absent
TP101_0.9-1.0			0.9-1.0	6	<0.3	24	-	18	49	20	-	40	0.07	14	<0.1	160	<0.1	<0.1	<0.1	<0.3	<20	570	N.A.	N.A.	N.A.	Absent
TP101_1.9-2.0			1.9-2.0	3	<0.3	3.9	-	5.1	7	1.8	-	11	<0.05	1.6	-	15	<0.1	<0.1	<0.1	<0.3	<20	130	<0.1	<1.7	<0.1	Absent
TP101_2.9-3.0			2.9-3.0	4	<0.3	7.8	-	19	39	8.6	-	43	0.05	4.4	0.3	45	<0.1	<0.1	<0.1	<0.3	<20	350	N.A.	N.A.	N.A.	Absent
TP101_3.9-4.0			3.9-4.0	4	<0.3	4.9	-	6.5	8	2.4	-	17	<0.05	0.2	-	2	<0.1	<0.1	<0.1	<0.3	<20	<110	<0.1	<1.7	<0.1	Absent
TP102_0.1-0.2			0.1-0.2	2	<0.3	7.2	-	3.9	11	2.3	-	17	<0.05	<0.1	-	<0.8	<0.1	<0.1	<0.1	<0.3	<20	<110	<0.1	<1.7	<0.1	Absent
TP102_1.0-1.1			1.0-1.1	4	<0.3	6.9	-	3.9	27	1.9	-	30	<0.05	0.1	-	<0.8	<0.1	<0.1	<0.1	<0.3	<20	<110	N.A.	N.A.	N.A.	Absent
TP102_2.0-2.1			2.0-2.1	6	<0.3	4.6	-	<0.5	19	<0.5	-	6.2	<0.05	<0.1	-	<0.8	<0.1	<0.1	<0.1	<0.3	<20	<110	<0.1	<1.7	<0.1	Absent
TP102_2.4-2.5			2.4-2.5	4	<0.3	6.6	-	9.1	71	3.9	-	26	<0.05	0.4	-	3.2	<0.1	<0.1	<0.1	<0.3	<20	<110	N.A.	N.A.	N.A.	Absent
TP104_0.15-2.0			0.15-2.0	2	<0.3	2.4	-	19	10	1.3	-	3.2	0.22	<0.1	-	<0.8	<0.1	<0.1	<0.1	<0.3	<20	<110	<0.1	<1.7	<0.1	Absent
TP105_0.15-0.2			0.15-0.2	4	<0.3	6.1	-	22	18	4.2	-	16	<0.05	<0.1	-	<0.8	<0.1	<0.1	<0.1	<0.3	<20	<110	<0.1	<1.7	<0.1	Absent
TP107_0.15-0.2			0.15-0.2	2	<0.3	13	-	5	5	5.5	-	19	<0.05	<0.1	-	<0.8	<0.1	<0.1	<0.1	<0.3	<20	<110	<0.1	<1.7	<0.1	Absent
TP103.2_0.2-0.3			0.2-0.3	3	<0.3	7.4	-	9.3	21	6.3	-	54	<0.05	0.2	-	1.4	<0.1	<0.1	<0.1	<0.3	<20	<110	<0.1	<1.7	<0.1	Absent
TP103.2_0.5-0.6			0.5-0.6	4	<0.3	19	-	4.7	19	7.6	-	8.2	<0.05	<0.1	-	<0.8	<0.1	<0.1	<0.1	<0.3	<20	<110	<0.1	<1.7	<0.1	Absent
TP106.2_0.2-0.3			0.2-0.3	6	<0.3	5.7	-	8.4	5	4.2	-	35	<0.05	<0.1	-	<0.8	<0.1	<0.1	<0.1	<0.3	<20	<110	<0.1	<1.7	<0.1	Absent
TP106.2_0.3-0.4			0.3-0.4	5	<0.3	22	-	37	16	35	-	150	<0.05	<0.1	-	<0.8	<0.1	<0.1	<0.1	<0.3	<20	<110	<0.1	<1.7	<0.1	Absent
TP108.2_0.2-0.3			0.2-0.3	3	<0.3	110	0.006	37	4	93	0.07	78	<0.05	<0.1	-	<0.8	<0.1	<0.1	<0.1	<0.3	<20	<110	<0.1	<1.7	<0.1	Absent
TP102_2.4-3.5 Natural		5/03/2025	2.4-3.5 Natural	4	<0.3	17	-	<0.5	17	<0.5	-	28	<0.05	<0.1	-	<0.8	<0.1	<0.1	<0.1	<0.3	<20	<110	N.A.	N.A.	N.A.	N.A.
TP104_0.2-0.3 Natural			0.2-0.3 Natural	3	<0.3	3.1	-	16	12	0.7	-	3.9	<0.05	<0.1	-	<0.8	<0.1	<0.1	<0.1	<0.3	<20	<110	N.A.	N.A.	N.A.	N.A.
TP105_0.4-0.5 Natural			0.4-0.5 Natural	5	<0.3	4.3	-	20	9	2.7	-	17	<0.05	<0.1	-	<0.8	<0.1	<0.1	<0.1	<0.3	<20	<110	N.A.	N.A.	N.A.	N.A.
TP107_0.2-0.3 Natural			0.2-0.3 Natural	4	<0.3	2.4	-	20	6	2.6	-	8.6	<0.05	<0.1	-	<0.8	<0.1	<0.1	<0.1	<0.3	<20	<110	N.A.	N.A.	N.A.	N.A.
Statistics																										
Maximum Concentration				11	<0.3	110	0.006	40	71	93	0.07	430	0.22	14	0.3	160	<0.1	<0.1	<0.1	<0.3	<20	570	<1	<1.7	<1	Absent
95% UCL				N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	2.75	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.

Detection or exceedance

Exceeded criteria

NR No criteria are currently recommended

* ACM fragments sampled beneath stockpile surface

1 CT1 General Solid Waste Thresholds (without leachate test), in NSW EPA 2014 Waste Classification Guidelines, Table 1

2 TCLP1/SCC1 General Solid Waste Thresholds (leachable concentration and total concentration when used together), in NSW EPA 2014 Waste Classification Guidelines Table 2

3 CT2 Restricted Solid Waste Thresholds (without leachate test), in NSW EPA 2014 Waste Classification Guidelines, Table 1

4 TCLP2/SCC2 Maximum values for Leachable concentration and specific contaminant concentration for Restricted Solid Waste Thresholds, NSW EPA 2014 Waste Classification Guidelines Table 2

5 NSW EPA Scheduled Chemical Wastes Chemical Control Order 2004, Section 4.14

6 NSW EPA Polychlorinated Biphenyl (PCB) Chemical Control Order 1997. Where PCBs are reported at concentrations >2 mg/kg and <50 mg/kg, material is *non-scheduled PCB waste* . Where PCBs are reported at concentrations >50 mg/kg, material is *scheduled PCB waste* .

7 These limits apply to chromium in the +6 oxidation state only.

N.A Not available

Table C3 - Summary of Groundwater Analytical Results

E26674 - Gordon

Sample ID	Sampling Date	Metals								PAHs							BTEX					TRHs					VOCs				Total Phenols	PFAS			
		As	Cd	Cr	Cu	Pb	Hg	Ni	Zn	Total PAHs	Benzo(a)pyrene	Benzo(b)anthracene #	Phenanthrene #	Fluoranthene #	Pyrene #	Naphthalene	Benzene	Toluene	Ethylbenzene	o-xylene	mp-xylene	F1	F2	Silica Gel Test	F3	F4	Chloroform (THM) #	1,2-dichloroethane #	cis-1,4-dichloro-2-butene #	Total VOC		PFOS	PFOS + PFHxS	Perfluoropentanoic acid (PFPeA) #	PFOA
Preliminary Environmental Site Assessment (EIS, 2016)																																			
PQL		1	0.1	2	1	1	0.05	1	1	-	0.1	0.1	0.1	0.1	0.1	0.1	1	1	1	1	2	25	50	-	100	100	-	-	-	-	-	-	-	-	-
MW1	22/8/2016	2	LPQL	LPQL	LPQL	LPQL	LPQL	5	31	-	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	190	-	-	-	-	-	-	-	-	-	-	-	-
MW3		2	LPQL	LPQL	LPQL	LPQL	LPQL	9	40	-	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	-	-	-	-	-	-	-	-	-	-	-	-
MW5		4	1	LPQL	12	LPQL	LPQL	120	330	-	LPQL	LPQL	LPQL	LPQL	LPQL	0.2	770	2	85	230	74	1,300	750	-	-	-	-	-	-	-	-	-	-	-	-
Stage 2 Environmental Site Assessment (EIS, 2016)																																			
MW1	10/11/2016	7	LPQL	LPQL	LPQL	LPQL	LPQL	8	10	0.69	LPQL	0.1	0.3	0.1	0.1	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	-	LPQL	LPQL	-	-	-	-	-	-	-	-	-
MW3		1	LPQL	LPQL	LPQL	LPQL	LPQL	7	14	0.20	LPQL	LPQL	0.1	0.1	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	NA	LPQL	-	LPQL	LPQL	-	-	-	-	-	-	-	-	-
MW5		4	LPQL	LPQL	5	LPQL	LPQL	49	370	0.60	LPQL	LPQL	LPQL	LPQL	LPQL	0.6	1,400	3	110	190	59	2,600	1,000	-	LPQL	LPQL	-	-	-	-	-	-	-	-	-
Data Gap Investigation (EI, 2025)																																			
MW201	19/3/2025	5	<0.1	<1	<1	<1	<0.1	3	5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<50	<60	-	<500	<500	2.4	<0.5	<1	<10	<0.05	<0.01	<0.01	<0.01	<0.01
MW202		2	<0.1	<1	<1	<1	<0.1	4	15	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<50	<60	-	<500	<500	2.8	<0.5	<1	<10	<0.05	<0.01	<0.01	<0.01	<0.01
MW203		<1	0.2	<1	<1	<1	<0.1	52	150	3	<0.1	<0.1	<0.1	<0.1	<0.1	0.6	<0.5	<0.5	4.5	3	6.3	360	310	NA / <60	<500	<500	3.2	4	1	23	0.1	<0.01	<0.01	0.01	<0.01
MWQD01		<1	0.3	<1	<1	<1	<0.1	59	170	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	1.1	<0.5	<0.5	5.5	4	6.3	620	430	NA / 140	<500	<500	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
MWQT01		<1	0.2	<1	<1	<1	<0.05	46	150	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	<1	<1	<1	4	5	<2	190	480	NA / NA	<100	<100	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
MW1		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<50	74	NA / <60	<500	<500	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
MW5		N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	<0.1	N.A.	N.A.	N.A.	N.A.	<0.5	1.1	<0.5	0.7	<1	<0.5	310	290	NA / <60	<500	<500	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
Statistical Analysis																																			
Maximum Concentration		7	1	<1	12	<1	<0.1	120	370	3	<0.1	0.1	0.3	0.1	0.1	1.1	1400	3	110	230	74	2600	1000	140	<500	<500	3.2	4	1	23	0.1	0	0	0.01	0
GILs																																			
HSL D - *Commerical / Industrial* Soil texture classification – Clay		2m to <4m														NL	30	NL	NL	NL	NL	NL	NL												
		4m to <8m														NL	30	NL	NL	NL	NL	NL	NL												
		8m+														NL	35	NL	NL	NL	NL	NL	NL												
GILs	Fresh Waters [1]	24 (AsIII) 13 (AsV)	0.2	1 (Cr VI)	14 [3]	3.4	0.06 [2]	11	80 [3]		0.1					16	950	180 [4]	80 [4]	350	275 [4]	50 [5]	60 [5]		500 [5]	500 [5]	770				320				
PFAS - Freshwater [8]																															0.13			220

Notes:

Highlighted indicates criteria not met

Highlighted indicates criteria exceeded ecological criteria

All values are µg/L unless stated otherwise

HSL D	NEPC 1999 Amendment 2013 'HSL D' Health Based Screening Levels for vapour intrusion applicable for commercial / industrial settings.
PQL	Practical Quantification Limit (Envirolab Services Sydney Pty Ltd)
LPQL	Less than PQL
NL	Not Limiting
NA	'Not Analysed' i.e. the sample was not analysed,
ND	Not Detected - i.e. concentration below the laboratory PQL
GIL	Groundwater Investigation Levels
#	Only detected concentrations were tabulated.
&	EIS completed a preliminary site assessment in August 2016, the key findings were mentioned in the Section 3 of the current investigation report.
*	In the absence of health criteria or aesthetic criteria is more conservative, aesthetic criteria applied.
F1	Obtained by subtracting the sum of BTEX from the C6-C10 fraction.
F2	Obtained by subtracting naphthalene from the >C10-C16 fraction.
F3	(>C16-C34)
F4	(>C34-C40)
1	NEPC (2013) Groundwater Investigation Levels for fresh and marine water quality, based on ANZECC & ARMCANZ (2000).
2	Chemical for which possible bioaccumulation and secondary poisoning effects should be considered, refer to ANZG (2018) for further guidance.
3	NSW EPA Site Auditors accept 1 order of magnitude higher than GIL due to elevated regional background levels.
4	Low reliability toxicity data, refer to ANZECC & ARMCANZ (2000)
5	In lack of the criteria the laboratory PQL has been used (DEC, 2007).
7	Value dervied from the NJDEP vapour intrusion groundwater screening levels (GWSL)
8	Value dervied from the National Environmental Management Plan for PFAS - 95% species protection for slightly to moderately disturbed systems.

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Table C4 - Soil Vapour Results

E26674 - Gordon

Sample ID	Location	Compounds detected by US EPA Compendium Methods TO-15 Analysis #																						BTEXN							Total Recoverable Hydrocarbons			
		Tetrachloroethene (TCE)	1,1,1-Trichloroethane (1,1,1-TCA)	Tetrachloroethene (PCE)	1,1-Dichloroethene	1,2-Dichloroethene	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Vinyl Chloride	1,2-Dichlorobenzene	1,2-Dichloropropane	Hexane	Cyclohexane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	2,2,4-Trimethylpentane	4-Ethyltoluene	Propylbenzene	Chloromethane	Chloroform	Isopropanol	Freon 11 (Trichlorofluoromethane)	Benzene	Toluene	Ethylbenzene	m/p-xylene	o-xylene	Total # Xylenes	Naphthalene	>C5-C8	>C8-C16 (minus TEX)	>C16-C34	>C34-C40 (minus Naphthalene (F2))
SV1	North-western corner, open space.	0.00001	<0.0051	<0.007	<0.0045	<0.0064	<0.0038	<0.0051	<0.0038	<0.0026	<0.0083	<0.012	<0.0038	<0.0026	0.0051	<0.0038	<0.0058	<0.0038	NA	<0.0038	0.13	4.9	<0.0019	<0.0032	0.0038	<0.0038	<0.0083	<0.0038	<0.0121	<0.013	0.5	0.49	<0.13	<0.13
SV-QD1	Duplicate of SV1	<0.0048	<0.0042	<0.0058	<0.0037	<0.0053	<0.0032	<0.0042	<0.0032	<0.0021	<0.0069	<0.0095	<0.0032	<0.0021	0.0056	<0.0032	<0.0048	<0.0032	NA	<0.0032	<0.0048	1.5	<0.0016	0.012	0.018	<0.0032	0.012	0.0042	0.0162	<0.011	0.54	0.49	<0.11	<0.11
SV2	South-western portion, former basement footprint.	<0.0043	<0.0038	<0.0053	<0.0034	<0.0048	<0.0029	<0.0038	<0.0029	<0.0019	<0.0062	<0.0086	<0.0029	33	<0.0038	<0.0029	<0.0043	<0.0029	NA	<0.0029	0.13	23	<0.0014	<0.0024	0.0041	<0.0029	<0.0062	<0.0029	<0.0091	<0.01	0.41	0.4	0.11	0.11
SV4	South-eastern corner, higher elevation end.	<0.0051	<0.0045	<0.0062	<0.0039	<0.0056	<0.0034	<0.0045	<0.0034	<0.0023	<0.0073	<0.01	<0.0034	<0.0023	<0.0045	<0.0034	<0.0051	<0.0034	NA	<0.0034	0.0061	1.8	<0.0017	<0.0028	<0.0034	<0.0034	<0.0073	<0.0034	<0.0107	<0.012	<0.11	<0.11	0.14	0.14
SV5	eastern portion, higher elevation end.	<0.0052	<0.0046	<0.0064	<0.0041	<0.0058	<0.0035	<0.0046	<0.0035	<0.0023	<0.0075	<0.01	<0.0035	<0.0023	<0.0046	<0.0035	<0.0052	<0.0035	NA	<0.0035	<0.0052	0.99	<0.0017	<0.0029	<0.0035	<0.0035	<0.0075	<0.0035	<0.011	<0.012	<0.12	<0.12	<0.12	<0.12
Statistical Evaluation																																		
Number of Samples		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
No. of Detected Concentrations		5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Minimum Concentration		0.00001	0.0038	0.0053	0.0034	0.0048	0.0029	0.0038	0.0029	0.0019	0.0062	0.0086	0.0029	0.0021	0.0038	0.0029	0.0043	0.0029	0	<0.0029	0.0048	0.99	<0.0014	<0.0024	<0.0034	<0.0029	<0.0062	<0.0029	0.0091	<0.011	<0.11	<0.11	<0.11	<0.11
Maximum Concentration		<0.0051	<0.0051	<0.007	<0.0041	<0.0064	<0.0035	<0.0046	<0.0035	<0.0023	<0.0075	<0.01	<0.0035	33	0.0056	<0.0035	<0.0052	<0.0035	0	<0.0035	0.13	23	<0.0017	0.012	0.018	<0.0035	0.012	0.0042	0.0162	<0.01	0.54	0.49	0.14	0.14
Investigation Levels																																		
Commercial / Industrial	**NEPC 2013 HIL B [1]**	0.02	60	2				0.08		0.03																								
	NEPC 2013 HSL D - SAND [2]	Source Depths (0 m to < 1 m. BGL)																						4	4,800	1,300			840	3		680		500
	NEPC 2013 HSL D - SAND [3]	Source Depths (1 m to < 2 m. BGL)																						10	16,000	4,600			3,200	15		2,800		2,400

Notes:
All values are mg/m^3 unless stated otherwise
1 - NEPC (2013) Soil Vapour Investigation Levels, Table 1A(2) Interim soil vapour health investigation levels for volatile organic chlorinated compounds
2 - NEPC (2013) Soil Vapour Investigation Levels, Table 1A(3) Soil vapour HSLs for vapour intrusion (SAND) with 0 to <1 m distance from source applied as a conservative measure
3 - NEPC (2013) Soil Vapour Investigation Levels, Table 1A(3) Soil vapour HSLs for vapour intrusion (SAND) with 1-<2m distance from source applied as a conservative measure
4 - US EPA Regional Screening Levels for Residential and Commercial Air (US EPA 2021) as prescribed by Golder (2023a) SAQP
TO15 Analysis as per NATA Accreditation